Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603342D8Z / *Defense Innovation Unit (DIU)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	100.206	67.646	104.729	109.614	-	109.614	167.818	173.698	184.857	191.354	Continuing	Continuing
434: *DIU*	100.206	67.646	104.729	109.614	-	109.614	167.818	173.698	184.857	191.354	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

On April 4, 2023, the Secretary of Defense elevated DIU as a direct report, placing the Defense Innovation Unit (DIU) under the Secretary's authority, direction and control and provided guidance on DIU's reporting and management structure. This change significantly increased the scope and scale of DIU's responsibilities and authorities as reflected in the DIU 3.0 strategy. This funding request reflects some of the initial requirements to support these elevated responsibilities. Further resourcing impacts of the codification of DIU in the National Defense Authorization Act of Fiscal Year 2024 and the elevation of the DIU Director as a Principal Staff Assistant (PSA) to the Secretary of Defense will follow based on a full assessment of those needs.

This program supports the Department's initiatives to build enduring advantages across the defense ecosystem - the Department of Defense, the defense industrial base, and the array of private sector enterprises and academia that create and sharpen the Joint Force's technological edge, with a focus on innovation and rapid adjustment to new strategic demands outlined in the 2022 National Defense Strategy (NDS).

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 DoD and the interagency to rapidly prototype, field, and scale commercially derived solutions to meet the most critical operational capability gaps identified by the Department with the focus, speed, and scale required to help deter major conflict and win if forced to fight. With offices in Silicon Valley, Boston, Austin, Chicago, and the Pentagon, DIU is able to attract the best and brightest talent and cutting-edge solutions.

For the Department of Defense (DoD) to effectively implement the NDS and counter the pacing challenge of the People's Republic of China (PRC) while simultaneously addressing the other strategic threats facing the nation, it must leverage commercial technology with the focus, speed, and scale necessary to deter major conflict and win if forced to fight. The Secretary of Defense's decision to realign DIU as a direct report and empower it to provide leadership, namely through serving as the Advisor to the Secretary on commercial technology innovation and chairing the Deputy's Innovation Working Group is a reflection of this imperative.

Spurred by trillions of dollars of private investment, innovation in many critical areas of technology central to military power is proceeding at a much faster rate in the private sector than in the traditional defense sector. Progress in 11 of the 14 critical technology areas identified by the Undersecretary of Defense for Research and Engineering (R&E) is primarily led by the commercial sector, with the most cutting-edge technology more likely to occur in its research and development pathways, tested and refined through its relentless market-driven requirements.

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DIU strengthens the Department's ability to rapidly prototype, acquire and field commercial technology at a pace that effectively deters our adversaries and helps ensure victory if we are forced to fight. 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 efficacy, 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 partners. Additionally, DIU executes projects to leverage commercial sector technology analogous to military applications thereby increasing dual-use technology agility for the DoD. DIU 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.
• 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 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	69.925	104.729	95.210	-	95.210
Current President's Budget	67.646	104.729	109.614	-	109.614
Total Adjustments	-2.279	0.000	14.404	-	14.404
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.272	-			
• Cancelled Account	-0.007	-	-	-	-
• Program Adjustment	-	-	14.404	-	14.404

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 434: *DIU*		

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603342D8Z *I Defense Innovation Unit (DIU)*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Congressional Add: *Small Craft Electric Propulsion*	5.000	-
Congressional Add: *Program Increase*	22.000	-
Congressional Add Subtotals for Project: 434	27.000	-
Congressional Add Totals for all Projects	27.000	-

Change Summary Explanation

-The program increase of $0.356 million is for Economic Assumptions. A reduction of $0.952 million was applied to meet DoD overall funding reductions, which were spread to mitigate impact. In addition, a programmatic increase of $15 million is to increase efforts in facilitating additional follow-on prototype contract awards.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603342D8Z / *Defense Innovation Unit (DIU)*	Project (Number/Name) 434 / *DIU*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
434: *DIU*	100.206	67.646	104.729	109.614	-	109.614	167.818	173.698	184.857	191.354	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

DIU increases the Department's access to commercial technologies and talent, with the ultimate goal of fielding technology at a pace that effectively deters our adversaries and helps ensure victory if we are forced to fight. Consistent with the Administration's 2023 National Defense Strategy and the National Defense Science and Technology Strategy, 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.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Defense Innovation Unit (DIU)	25.646	36.729	51.614

Description: The U.S. DoD relies on innovation to maintain our nation's ability to deter, and if need be, prevail in conflict. With Silicon Valley, Boston, Austin, Chicago, and the Pentagon, DIU serves as a bridge between those in the U.S. Military executing national security and defense missions with companies developing cutting-edge commercially derived technology. DIU continuously experiments with methods to identify, contract, prototype, and transition novel commercial solutions from leading companies to meet the most critical operational capability gaps identified by the Department with the focus, speed, and scale required to help deter major conflict and win if forced to fight. The end goal is to accelerate DoD adoption of cutting-edge technology and grow the national security innovation base to support U.S. military-technical superiority.

FY 2024 Plans:

Execute on DIU 3.0 Strategy focused on identifying and delivering cutting-edge commercial innovation to the warfighter to impact the most critical capability gaps identified by DoD partners in the Services, components, Defense Agencies, and Combatant Commands. DIU works to solve challenges and issues for the Department in areas such as artificial intelligence and machine learning, autonomy, cyber, energy, human systems, and space. The DIU Director also serves as the Advisor to the Secretary Defense on technology innovation, competition and strategic impact.

Based on its recent elevation by the Secretary, DIU will ensure that the Department can leverage the best of commercial technology and innovation at speed and scale to deter major conflict or win in forced to fight. DIU will amplify its coordination and collaboration both inside and outside the Department along eight lines of efforts: Focus, Scale, Innovation Community, Commercial Leverage, International, Trust/Momentum, Team/Culture, and Advise.

FY 2025 Plans:

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603342D8Z / *Defense Innovation Unit (DIU)*	**Project (Number/Name)** 434 / *DIU*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Execute at an accelerated pace on DIU 3.0 strategy leveraging the codification of DIU in the National Defense Authorization Act of Fiscal Year 2024 and momentum from throughout 2024, to: •Refocus DIU on a smaller number of critical technology solutions that make a meaningful difference to the nation's most strategic priorities, i.e., through real impact on Operational Plans, deterrence options, and scale operations •Ensure clarity of demand signals (Combatant Commands, Services, 4th Estate) for commercial technology solutions and staff support (Office of Secretary of Defense, Joint Staff, others) for commercial technology solutions to help the Department maximize likelihood of scale execution required for strategic impact; help develop and institutionalize appropriate processes to support scale at speed while managing risk •Catalyze/mobilize/enable nodes of commercial tech innovation across DoD into a coordinated community of innovation in support of Secretary and Deputy Secretary of Defense priorities •Serve as focal/bridging point to commercial tech sector and related private sector communities (e.g., financial), including at leadership level, in order to clarify the demand signals required for focus, speed, and scale, and best leverage those relationships to drive impact for DoD •Build an international community of innovation among our closest allies and partners, through exchange of Embeds, collaboration where appropriate, and sharing of best practices; deliver impact from that community for strategic technology priorities, strategic comms, and scale opportunity for commercial partners •Build trust and sense of momentum, in all directions (Congress, tech sector, Office of Secretary of Defense, Services, Combatant Commands) •Reshape DIU culture and team to deliver as a fully integrated disruptive change leader— and great teammate—on the broader DoD team. •Serve as senior advisor to the Secretary and Deputy Secretary of Defense on technology innovation, competition, and strategic impact Under DIU's expanded mandate, DIU will utilize the $15M increase towards the following efforts, in addition to efforts alongside innovation partners and end-customers in Services, Combatant Commands and Office of Secretary of Defense: •Critical Tech Industrial Base Expansion: $3M, invest in domestic & allied hardware companies (microelectronics, advanced comms, human systems) to protect them from adversary capital •Global Partnerships: $3M, expand DIU's collaboration to develop and deliver commercial technology solutions with allies & partners •Blue Unmanned Aircraft Systems: $2M, expedite delivery of commercial UAS for warfighter use •Director's Immediate Strategic Impact: $3M to enable DIU Director to rapidly address emerging needs with innovative solutions •Academic Innovation Network: $4M, Facilitate the sustainment of ongoing academic programming and current and future OnRamp Hub sites, along with support activities associated with these facilities. These support activities include the funding to support the broader Regional Network Team, and programs such as accelerators, prize challenges, and mentoring activities			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603342D8Z / *Defense Innovation Unit (DIU)*	**Project (Number/Name)** 434 / *DIU*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
designed to support early-stage ventures and talent as they navigate the national security innovation base. Initial funding for OnRamp Hubs and associated programming provided by a FY 2023 congressional add in the NSIN PE 0603950D8Z and in FY 2025 combined with DIU's PE as part of the larger integration of NSIN into DIU. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The $15 million increase provides partial funding to execute the expanded mission set outlined in DIU 3.0 Strategy. In addition, an increase of $0.481 million is to increase efforts in facilitating additional follow-on prototype contract awards. A reduction of $0.952 million was applied to meet DoD overall funding reductions, which were spread to mitigate impact. Funding increase of $0.356 million for Economic Assumptions.			
Title: Defense Advanced Battery Supply Chain ***Description:*** DoD's low-demand signal and complex specifications for batteries make it difficult to engage with high-volume automotive battery suppliers. This typically results in the use of bespoke, inferior, and expensive batteries for military applications. The Defense Advanced Battery Supply Chain program currently encompasses both the Jumpstart for Advanced Battery Standardization (JABS) project and Family of Advanced Standard Battery (FAStBat) projects. The JABS project is advancing and assessing battery modules using novel commercial technology in various DoD platforms to achieve standardization of commercial EV batteries. This will allow for a more resilient supply as well as state-of-the-art battery systems for DoD platforms. The FAStBat project will prototype, test, and transition standardized battery families with completed Performance Specifications (MIL-PRFs) into their respective active Programs of Record. Both projects emphasize domestic onshoring while scaling battery production in the United States and reducing dependency on China and other foreign sources. These prototypes will assess and strengthen the manufacturing and supply chain resiliency of advanced batteries from domestic producers; accelerate efforts to partner with domestic battery producers targeting the commercial market for standardization and certification; align defense and Defense Industrial Base to commercial advanced battery development and production; address supply chain challenges for the use of commercial batteries. This funding supports the onshoring of domestic manufacturing, production, and standardization of advanced batteries at the raw material, battery cell, and module levels. ***FY 2024 Plans:*** Prototype, assess, and iterate standardized commercial battery modules: - Test modules in fully electric and hybrid tactical vehicles, storage systems, weapons, and maritime vessels to demonstrate military utility. - Increase access to developing domestic infrastructure to reduce costs and align defense capabilities to the rapidly evolving commercial sector standards.	15.000	48.000	38.000

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603342D8Z / *Defense Innovation Unit (DIU)*	**Project (Number/Name)** 434 / *DIU*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
- Execute additional supporting solicitations for prototypes of raw materials, battery safety management, and smaller form factors from commercial technologies. ***FY 2025 Plans:*** DIU will continue prototyping and validating multiple standardized commercial battery modules for a variety of platforms and initiate low-rate initial production of proven solutions for a variety of tactical vehicles, storage systems, weapons, and maritime vessels. Supporting on-shoring of domestic battery manufacturing capabilities is consistent with the Inflation Reduction Act. As a result of these efforts, the Defense Advanced Battery Supply Chain program will increase energy resilience with a competitively sourced network of domestic battery suppliers, reduce cost, ensure Soldier safety with fault-tolerant testing and certification, lower element costs, and leverage common charging infrastructure for preferred batteries across DoD Services. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The $10.000 million decrease between FY 2024 and FY 2025 is in alignment with final prototyping and initial low rate production of proven solutions of Defense Advanced Battery Supply Chain efforts.			
Title: Tactical Vehicle Hybridization	-	10.000	10.000
Description: Liquid fuels create battlefield logistics challenges and do not inherently support future operational requirements. However, fully electric tactical vehicles present their own battlefield logistics challenges, making quick conversion to pure-electric impractical. Further hybridizing vehicles is a critical step in the transition to an all-electric tactical fleet. By integrating commercial technologies on hybrid power systems, battery integration, and auxiliary power units, the DoD can speed up transition to electric by years. This funding will expand on the Tactical Vehicle Hybridization project launched by DIU in FY 2022 on behalf of the Army and the Marines. This funding will enable the commercial vendors to expand capabilities to the powertrain, allowing full hybrid options and expand the capabilities to the remaining variants of Tactical Vehicles. ***FY 2024 Plans:*** Expand the anti-idle hybridization capability to up to 5 more vehicle variants and add additional hybridization capabilities for the current set of tactical vehicle variants (Joint Light Tactical Vehicles (JLTV), Family of Medium Tactical Vehicles (FMTV), Heavy Expanded Mobility Tactical Truck (HEMITT), Logistic Vehicle System Replacement (LVSR), and High Mobility Multi-purpose-Wheeled Vehicle (HMMWV)). Capabilities include: hybridizing the powertrain, integrating auxiliary power units, and enabling battlefield recharging. ***FY 2025 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
This funding will cover the next segment of hybridizing vehicles. This includes converting the power trains on legacy equipment and sourcing components for new acquisitions - such as the Range Extender. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** No change.			
Title: Synthetic Fuels for Contested Environments ***Description:*** The DoD lacks an ability to generate liquid fuel on-site. Defense fuel logistics are reliant on the global energy supply chain, which is easily disrupted. Current transport means are costly, inefficient, slow, and vulnerable to attack. Simultaneously, our fuel source is dependent on carbon-intense commercially procured fuel market. By creating a highly-agile, rapidly-deployable synthetic fuel production system (leave-behind or onboard) that could be dispersed throughout any area of responsibility (AOR) to produce just-in-time fuel at the edge, the DoD can mitigate the impact of fuel logistics disruption. ***FY 2024 Plans:*** Expand upon the FY 2023 DIU/Air Force project to produce synthetic hydrocarbon fuels (jet fuel, diesel, etc.) on-site, from ubiquitous feedstocks such as air or seawater, in a small, mobile form-factor that enables agile combat employment concepts and is carbon neutral. This funding will contribute to developing a fully containerized solution that can be employed in an austere environment. Additionally, this funding will enable the establishment of one or more fixed Sustainable Aviation Fuel (SAF) centers as required by the FY 2023 NDAA. ***FY 2025 Plans:*** This funding would expand and scale up the continuous generation of synthetic jet fuel, providing continuous refinement and sample testing. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** No change.	-	5.000	5.000
Title: Hydrogen at the Tactical Edge of Contested-Logistics (HyTEC) ***Description:*** Fuel supply chains are vulnerable to disruption and an energy dense alternative fuel is necessary to sustain operational capabilities and improve energy resilience. The DoD anticipates operating in austere, remote locations where efficient storage and use of energy will play a vital role in military operations. The Joint Force requires the capability to preposition, create, and distribute Operational Energy to the last tactical mile above and beyond the current inventory of legacy energy delivery platforms. Additionally, DoD lacks a systems-integrated solution that can provide energy generation and storage untethered from the larger logistics supply chain. The HyTEC program represents a solution to those DoD problems. Hydrogen technologies are	-	5.000	5.000

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
commercially available in every stage of the hydrogen supply chain at high TRL, which would allow for onsite fuel production thereby reducing the demand for complex fuel logistics supply chains, particularly in contested environments. ***FY 2024 Plans:*** This funding will develop a working integrated solution capable of hydrogen (H2) generation, storage, and fueling for USMC and USN applications in contested environments. ***FY 2025 Plans:*** This funding will go towards integration testing in the field and applying this fuel generations towards H2-fueled platforms include, but are not limited to: tactical vehicles, ground-based robotics, stratospheric balloons, mobile storage, and multiple classes of unmanned aerial vehicles (UAVs). In addition, this funding will integrate INDOPACOM J4 equities into the project. This will include shipboard generation and transport of hydrogen to create an untethered fuel supply chain. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** No change.			
Accomplishments/Planned Programs Subtotals	40.646	104.729	109.614

	FY 2023	FY 2024
Congressional Add: Small Craft Electric Propulsion ***FY 2023 Accomplishments:*** This project leverages Congressionally directed funds toward commercial, electric personal watercraft capable of performing search and rescue (SAR) / Maritime Reconnaissance (MR) operations in littoral and riverine areas and off naval vessels. Funding was allocated during FY 2023 and is planned to be executed during the second year of the appropriation.	5.000	-
Congressional Add: Program Increase ***FY 2023 Accomplishments:*** Aligned with the FY 2022 National Defense Strategy (NDS) and COCOM needs. The Defense Innovation Unit (DIU) focused funding to accelerate the project timelines of a select number of FY 2023 priority projects and address capability common gaps for high-priority warfighter needs that the Department is not currently addressing. Key priorities identified include: Soldier Robotic Controller, Blue Unmanned Air System (UAS), Hybrid Space Architecture, Global Navigation Satellite System Spoofing, and Gig Eagle.	22.000	-
Congressional Adds Subtotals	27.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• BA 04; O&M: *PE 0901583D8Z*	17.134	18.542	18.679	-	18.679	19.059	19.447	19.847	20.245	-	-

Remarks

NA

D. Acquisition Strategy

DIU primarily utilizes Title 10 U.S. Code § 4022 authority to prototype projects to enhance military effectiveness through the Commercial Solutions Opening (CSO) process.