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 0604331D8Z / *Rapid Prototyping Program*

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	313.407	89.318	137.349	179.189	0.000	179.189	183.231	189.515	195.923	201.263	-	-
638: *Rapid Prototyping Program*	313.407	89.318	103.330	109.189	0.000	109.189	112.231	114.515	116.923	119.263	-	-
073: *Rapid Defense Experimentation Reserve*	0.000	0.000	34.019	70.000	0.000	70.000	71.000	75.000	79.000	82.000	-	-

Note

New Start (Y/N): Partial
FY 2023 Fully Networked Command, Control, and Communication Focus Areas $16.350 million
FY 2023 Fire Control Focus Area $16.350 million

Project 073, Rapid Defense Experimentation Reserve (RDER), was added to the Rapid Prototyping Program (RPP) Program Element starting in FY 2022. To facilitate rapid modernization of the force, the RDER initiative was established in the Defense Planning Guidance for Fiscal Year 2023-2027, to encourage multi-component experimentation through a campaign of learning. Services, Agencies, and other participating organizations are to identify “best of breed” capabilities developed among the Department of Defense (DoD) prototyping programs, and execute approved projects through large-scale experiments in order to refine and/or validate the Joint Warfighting Concept (JWC). Organizations are to nominate proposals to the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) that are multi-component – involving Joint Services, International partners and/or other government agencies. These proposals should link to one or more of the four key supporting concepts, known as functional battles, of the Joint Warfighting Concept: Joint Concept for Fires, Joint Concept for Command and Control, Joint Concept for Contested Logistics, and Joint Concept for Information Advantage.

A. Mission Description and Budget Item Justification

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

In partnership with the Services and Defense Agencies, the Rapid Prototyping Program (RPP) accelerates joint Service and Defense Agency capability development through prototyping efforts that help push innovative technologies across the “valley of death,” and into existing Service programs of record. RPP addresses strategic joint priorities such as the National Defense Strategy, the OUSD(R&E) critical technology areas, and the Joint Warfighting Concept (JWC) needs; as well as Service or Agency identified capability gaps. New projects are nominated by the Services and Agencies, and selected with inputs from organizations including the Joint Staff, the Combatant Commands, and others in order to minimize duplication, synchronize prototyping efforts, and target projects with the widest benefit to the joint warfighter.

Overarching program goals include modernization of cross-cutting technology areas, providing fieldable end-to-end mission capabilities for Services and joint application, informing programs of record, and delivering capabilities more quickly than traditional acquisition. RPP develops prototypes that reduce technical and integration risk and accelerate capabilities to programs of record. RPP project selection aligns to priority mission and technology areas including artificial intelligence /

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 0604331D8Z / *Rapid Prototyping Program*

machine learning; autonomous systems; hypersonics; electronic warfare; sensors for intelligence, surveillance, and reconnaissance (ISR); and fire control. RPP rapidly develops and fields cross-cutting, prototype capabilities demonstrated in an operational environment to inform DoD and Service leadership.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	92.023	103.575	0.000	0.000	0.000
Current President's Budget	89.318	137.349	179.189	-	179.189
Total Adjustments	-2.705	33.774	179.189	-	179.189
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	34.100			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.687	-			
• Adjustments to Budget Year	-	-	175.423	-	175.423
• Other Program Adjustments	-0.018	-	3.766	-	3.766
• FFRDC Reduction	-	-0.326	-	-	-

Change Summary Explanation

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

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 0604331D8Z / *Rapid Prototyping Program*	Project (Number/Name) 638 / *Rapid Prototyping Program*	

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
638: *Rapid Prototyping Program*	313.407	89.318	103.330	109.189	0.000	109.189	112.231	114.515	116.923	119.263	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Rapid Prototyping Program (RPP) develops prototypes to deliver capabilities, inform requirements, and bridge the gap between RDT&E activities and fieldable solutions. RPP facilitates and accelerates joint, cross-cutting prototyping efforts within the Services and Defense Agencies. This program has the agility to select, fund, and implement projects in the year of execution as new opportunities or threats emerge. In consultation with the Service Science and Technology (S&T) executives, selected projects generally receive a single year of funding to accelerate capability transition to Services' and Agencies' programs of record. Projects deemed critical by the Under Secretary of Defense for Research and Engineering (USD(R&E)) receive higher amounts of funding across multiple years. Planned funding supports the National Defense Strategy, the OUSD(R&E) critical technology areas, and Service and Agency needs to enable rapid response to emergent and time-sensitive threats.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Southern Cross Integrated Flight Research Experiment (SCIFIRE)	37.900	45.400	35.200
Description: SCIFIRE is a joint U.S.- Australia (AUS) partnership to develop and demonstrate an air-launched air-breathing hypersonic weapon prototype leveraging previous science and technology investments in hypersonics. SCIFIRE will further mature hypersonic cruise missile technologies to engage time-critical, heavily defended, and high-value targets in a contested environment. The SCIFiRE form factor provides enhanced capability by allowing for integration on fighter aircraft. In FY 2021, funding supported risk reduction activities, finalized system requirements, established Weapons Open System Architecture (WOSA) evaluation criteria, and began system design efforts and digital system modeling. ***FY 2022 Plans:*** Continue Weapons Open System Architecture (WOSA) implementation, system design efforts for the potential open system alternatives, and digital system modeling. Complete Preliminary Design for the prototype flight system. Develop prototype flight test plans and aircraft integration design in conjunction with AUS. ***FY 2023 Plans:*** Perform detailed design and analysis on the prototype flight system. Develop and test wind tunnel models representing weapon outer mold lines (OML) to inform aircraft integration and operational analyses. ***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 0604331D8Z / *Rapid Prototyping Program*	**Project (Number/Name)** 638 / *Rapid Prototyping Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
FY 2023 funding decreases by $10.200 million due to an offset by Air Force Life Cycle Management Center contributions to the jointly funded project.			
Title: Joint Affordable Kill-Chain Closure (JAKCC) ***Description:*** JAKCC supports the National Defense Strategy's priorities to modernize key capabilities and evolve innovative operational concepts. This effort integrates the fully networked command, control, and communications (FNC3); autonomy; electronic warfare (EW); and intelligence, surveillance, and reconnaissance (ISR) prototypes developed on an autonomous platform. A series of incremental demonstration and experimentation activities are executed in coordination with the Services and Combatant Commands to validate the platform integrated prototype capability to accelerate development and adoption of cost effective and interoperable solutions for defense challenges. The JAKCC project leverages a government reference architecture developed in coordination with the Services and Combatant Commands to enable a Service agnostic prototype acquisition strategy. In FY 2021, the JAKCC project developed a Service agnostic prototype acquisition strategy, created a government reference architecture, and initiated system engineering and platform system design changes to enable integration of prototype payloads. ***FY 2022 Plans:*** In FY 2022, the JAKCC project will complete prototype payload development. Prototypes will undergo testing in a laboratory and an operationally relevant environment prior to integration onto prototype autonomous platforms and the execution of the initial technology demonstration in late FY 2022. The project will begin preliminary planning for a FY 2023 operational demonstration in coordination with the Services and Combatant Commands. JAKCC culminates in a FY 2023 operational demonstration prior to transitioning to multiple Service programs of record for integration. ***FY 2023 Plans:*** In FY 2023 the JAKCC project plans to conduct an additional technology demonstration in early FY 2023. The project will also be finalizing, in coordination with the Services and the Combatant Commands, the plans for the operational demonstration in the third quarter of FY 2023. Following the operational demonstration the findings will be compiled to define requirements that will inform the transition, and resulting acquisition plans, for multiple Service programs of record. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** In FY 2023, funding decreases are driven by the transitions from design/procurement/fabrication activities to integration/ demonstration activities. Also given the operational demonstration will conclude in the third quarter of FY 2023, the FY 2023 fourth quarter activities will consist of results documentation and project close out activities.	30.000	50.000	28.400
Title: Tactical Edge Network Targeting in a Contested Long-range Environment (TENTaCLE)	10.000	-	-

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 0604331D8Z / *Rapid Prototyping Program*	**Project (Number/Name)** 638 / *Rapid Prototyping Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Description: TENTaCLE is a joint U.S. Navy and U.S. Air Force partnership to develop and demonstrate National-Tactical Intelligence, Surveillance, Reconnaissance, and Targeting (ISR-T), Command and Control (C2) data from the cloud to tactical platforms through agile, automated, multi-link Internet Protocol (IP), satellite communication and Tactical Data Links (TDL) networks. TENTaCLE enables joint coordinated Long-Range Fires leveraging National-Tactical advantages in denied environments using resilient links. TENTaCLE is a Rapid Prototype and Rapid Fielding Program that conforms with the acquisition adaptive framework to field pods and integrated kits, ready for the "Fight Tonight" with resilient links and onboard compute sufficient for advanced networked Battle Management Aids (BMAs). TENTaCLE transitioned to the Navy and Air Force.			
Title: Advanced Prototyping to Support OUSD(R&E) Critical Technology Areas	11.418	7.930	12.889
Description: This effort prototypes cutting-edge land, sea, undersea, air, and space capabilities critical to the National Defense Strategy, critical technology areas and objectives of the Department of Defense (DoD). This effort matures and demonstrates with operationally representative prototypes of fully networked command, control, and communications; 5G; space; autonomy; hypersonics; cyber; directed energy; bio-technology, and machine learning systems to accelerate development and adoption of cost effective and interoperable solutions for defense challenges. Selected projects demonstrate and deliver mature prototypes to Service programs of record; mitigate risk in DoD programs; and help characterize potential concepts of operations. Advanced prototyping activities seek to rapidly demonstrate capabilities that can help maintain the U.S. technological edge. Demonstration of advanced prototypes will involve partnerships with the Services, industry, academia, and non-traditional DoD partners. ***FY 2022 Plans:*** Projects will be selected in the year of execution to support National Defense Strategy priorities, OUSD(R&E) critical technology areas, and gaps in the joint Services' investments. Projects focus on cost-effective, mission-focused efforts to design, mature, and deliver new concepts and technology prototypes aimed at supporting the joint Force. One to two prototype efforts are anticipated in FY 2022, leveraging joint, Service, and interagency partnerships. ***FY 2023 Plans:*** Projects will be selected in the year of execution to support National Defense Strategy priorities, OUSD(R&E) critical technology areas, and gaps in the joint Services' investments. Projects focus on cost-effective, mission-focused efforts to design, mature, and deliver new concepts and technology prototypes aimed at supporting the joint Force. One to two prototype efforts are anticipated in FY 2023, leveraging joint, Service, and interagency partnerships. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** RPP anticipates increasing funding in this focus area to accelerate high priority USD(R&E) mission prototyping efforts.			
Title: Fully Networked Command, Control, and Communications Focus Area	-	-	16.350

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 0604331D8Z / *Rapid Prototyping Program*	**Project (Number/Name)** 638 / *Rapid Prototyping Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Description: This focus area demonstrates joint prototypes and concepts of operation for the joint concept for command and control across multi-domain operations. Prototypes will help advance the Joint Warfighting Concept (JWC) roadmaps by addressing high-performance, low power embedded processing and developing algorithms for automatic resource allocating, self-configuring, and self-healing networks. Prototype systems will be demonstrated in operationally relevant, contested environments to help the United States maintain its communication advantage in near-peer conflict. ***FY 2023 Plans:*** RPP anticipates supporting one to two command and control projects in FY 2023. Deliverables will include developmental and fieldable prototypes demonstrated in an operational environment with warfighter participation. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding for this focus area in FY 2023 increases to support acceleration of joint concept for command and control prototyping efforts.			
Title: Fire Control Focus Area ***Description:*** This focus area develops and advances fire control systems to bring faster, more efficient target execution capabilities across multiple domains to the Combatant Commands in support of the joint concept for fires. Through coordination with the Services, projects will advance subsystems to include target tracking, weapon guidance, command, and control with deliverables that include initial capability, concept of employment, and concept of operations. Prototypes developed through these efforts will transition to Service programs of record enabling the United States to maintain technological superiority. ***FY 2023 Plans:*** RPP anticipates supporting one to two Fire Control projects in FY 2023. Deliverables will include developmental and fieldable prototypes demonstrated in an operational environment with warfighter participation. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding for this focus area in FY 2023 increases to support acceleration of joint concept for fires prototyping efforts.	-	-	16.350
Accomplishments/Planned Programs Subtotals	89.318	103.330	109.189

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

N/A

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 0604331D8Z / *Rapid Prototyping Program*	**Project (Number/Name)** 638 / *Rapid Prototyping Program*

D. Acquisition Strategy

RPP leverages the Services' and Defense Agencies' most efficient and effective acquisition approach for rapid prototyping. This includes using Other Transaction Authorities and new or existing contract vehicles.

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 0604331D8Z / *Rapid Prototyping Program*	**Project (Number/Name)** 638 / *Rapid Prototyping Program*	

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
SCIFIRE	MIPR	Air Force Life Cycle Management Center : Eglin, FL	-	29.591		27.923		-		-		-	Continuing	Continuing	-
SCIFIRE	MIPR	SAF/FMBIB : Washington, DC	-	4.200		-		-		-		-	Continuing	Continuing	-
SCIFIRE	MIPR	AFLCMC EPASS : Eglin, FL	-	1.402		-		-		-		-	Continuing	Continuing	-
SCIFIRE	MIPR	MISC : Multiple	-	1.602		-		-		-		-	Continuing	Continuing	-
SCIFIRE	Option/ FP	Johns Hopkins University Applied Physics Laboratory : Laurel, MD	-	-		1.000		-		-		-	Continuing	Continuing	-
SCIFIRE	MIPR	NAWC-AD : Pauxent River, MD	-	1.104		-		-		-		-	Continuing	Continuing	-
JAKCC	MIPR	AFRL : Herndon, VA	-	7.001		-		-		-		-	Continuing	Continuing	-
JAKCC	C/FP	Lead Systems Integrator : Multiple	-	10.000		-		-		-		-	Continuing	Continuing	-
JAKCC	MIPR	Naval Information Warfare Center : Pacific : San Diego, CA	-	2.250		-		-		-		-	Continuing	Continuing	-
JAKCC	MIPR	MISC : Multiple	-	2.091		-		-		-		-	Continuing	Continuing	-
JAKCC	Option/ FP	Johns Hopkins University Applied Physics Laboratory : Laurel, MD	-	1.500		-		-		-		-	Continuing	Continuing	-
TENTaCLE	MIPR	NAWC-WD : China Lake, CA	-	3.900		-		-		-		-	Continuing	Continuing	-
TENTaCLE	MIPR	NAWC-AD : Patuxent River, MD	-	5.020		-		-		-		-	Continuing	Continuing	-
TENTaCLE	MIPR	MISC : Multiple	-	1.080		-		-		-		-	Continuing	Continuing	-
VARIOUS	MIPR	MULTI : MULTI	313.407	18.577	Sep 2021	74.407	Sep 2022	109.189	Sep 2023	0.000		109.189	Continuing	Continuing	-

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 0604331D8Z / *Rapid Prototyping Program*	**Project (Number/Name)** 638 / *Rapid Prototyping Program*

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
		Subtotal	313.407	89.318		103.330		109.189		0.000		109.189	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	313.407	89.318		103.330		109.189		0.000		109.189	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 0604331D8Z / *Rapid Prototyping Program*	**Project (Number/Name)** 638 / *Rapid Prototyping Program*

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
SCIFIRE																												
Contract Award/Project Kickoff																												
Prototype Design Development																												
Prototype Development																												
Joint Affordable Kill-Chain Closure (JAKCC)																												
Project Kickoff																												
Prototype Design Development, Integration (Hardware/Software)																												
Prototype Field Demonstration																												
TENTaCLE																												
Project Kickoff																												
Prototype Design Development, Integration (Hardware/Software)																												
Prototype Field Demonstration																												
Prototype Proposal Selection																												
Proposal Submissions																												
Proposal Evaluations																												
Project Selection																												
Project Kick-offs																												

	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
	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
SCIFIRE																												
Contract Award/Project Kickoff																												
Prototype Design Development																												

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 0604331D8Z / *Rapid Prototyping Program*	**Project (Number/Name)** 638 / *Rapid Prototyping Program*

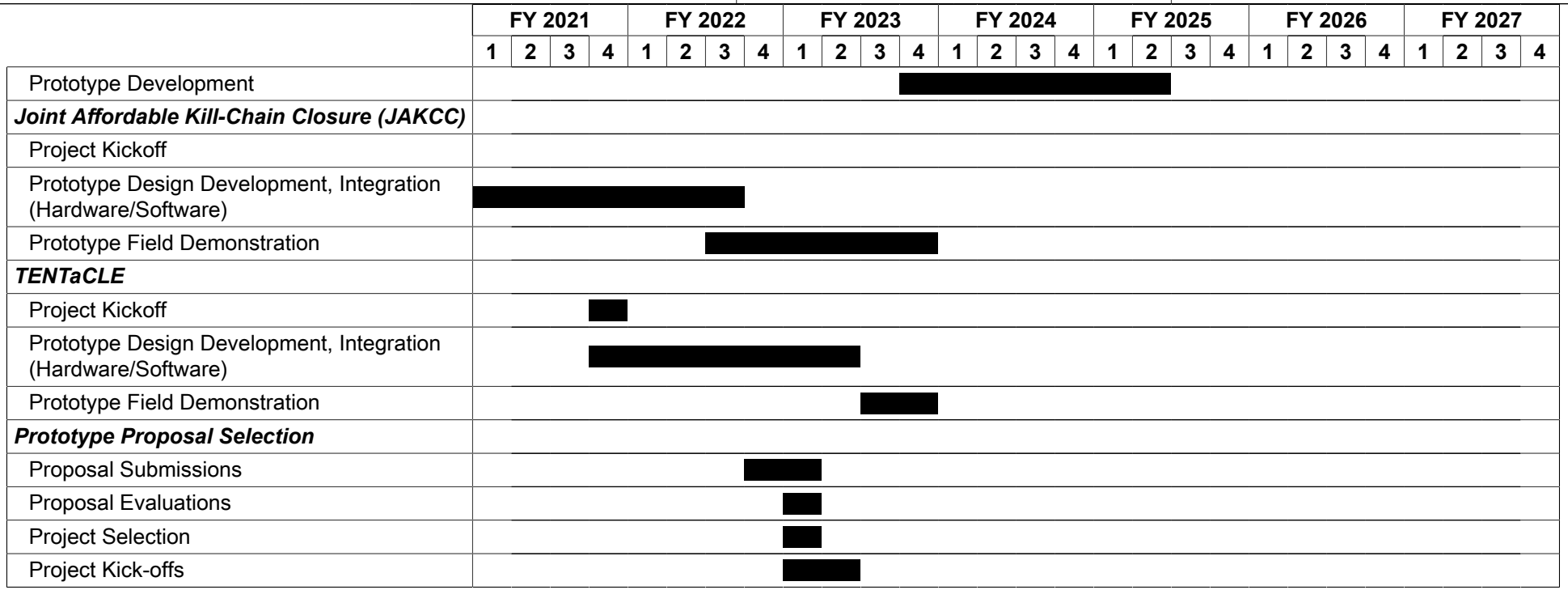

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Office of the Secretary Of Defense		Date: April 2022
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604331D8Z / *Rapid Prototyping Program*	**Project (Number/Name)** 638 / *Rapid Prototyping Program*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
SCIFIRE				
Contract Award/Project Kickoff	1	2021	1	2021
Prototype Design Development	2	2021	4	2023
Prototype Development	4	2023	2	2025
Joint Affordable Kill-Chain Closure (JAKCC)				
Project Kickoff	4	2020	4	2020
Prototype Design Development, Integration (Hardware/Software)	1	2021	3	2022
Prototype Field Demonstration	3	2022	4	2023
TENTaCLE				
Project Kickoff	4	2021	4	2021
Prototype Design Development, Integration (Hardware/Software)	4	2021	2	2023
Prototype Field Demonstration	3	2023	4	2023
Prototype Proposal Selection				
Proposal Submissions	4	2022	1	2023
Proposal Evaluations	1	2023	1	2023
Project Selection	1	2023	1	2023
Project Kick-offs	1	2023	2	2023

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 0604331D8Z / *Rapid Prototyping Program*	Project (Number/Name) 073 / *Rapid Defense Experimentation Reserve*	

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
073: *Rapid Defense Experimentation Reserve*	0.000	0.000	34.019	70.000	0.000	70.000	71.000	75.000	79.000	82.000	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Project Code 073, Rapid Defense Experimentation Reserve (RDER), was added to the RPP Program Element starting in FY 2022. To facilitate rapid modernization of the force, the RDER initiative was established in the Defense Planning Guidance for Fiscal Year 2023-2027, to encourage multi-component experimentation through a campaign of learning. Services, Agencies, and other participating organizations are to identify "best of breed" capabilities developed among DoD prototyping programs, and execute approved projects through large-scale experiments in order to refine and/or validate the Joint Warfighting Concept (JWC). Organizations are to nominate proposals to the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) that are multi-component – involving Joint Services, International partners and/or other government agencies. These proposals should link to one or more of the four key supporting concepts ("functional battles") of the Joint Warfighting Concept: Joint Concept for Fires, Joint Concept for Command and Control, Joint Concept for Contested Logistics, and Joint Concept for Information Advantage.

A. Mission Description and Budget Item Justification

The Department will implement multiple RDER experimentation series through Service nominated projects with execution timelines ranging from one to two years. The USD (R&E) will review project progress, recommend new projects at least annually with the goal of quickly incorporating the most promising innovative prototypes into experiments, and promptly terminate projects that fail to achieve expectations. To incentivize a disciplined approach to rapidly identify, incorporate, and execute projects largely through the Military Services, the Department will fund approved Service projects for the upcoming fiscal year out of the Department reserves. Funding decisions on additional funds in follow-on years for new projects, and funding decrements for project terminations, will be incorporated in budgets annually based on emerging requirements and periodic assessments of project viability. Services will execute these funds under oversight of the OSD in a manner consistent with the experimentation scenario for which individual projects were selected.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Rapid Defense Experimentation Reserve (RDER) Exercise Coordination and Execution	0.000	5.000	10.000
Description: RDER will execute threat informed system-of-systems experiments to fully address joint capability gaps and serve as an integrating effort for DoD and Service prototyping capabilities. Funding will provide for planning, coordination, alignment, and execution of RDER experimentation series into Joint large-scale exercises. Activities include monitoring new technologies through the innovation stakeholder community (Service labs, industry, academia, and federally funded research and development centers) in order to identify those "best of breed" capabilities to be integrated in experiments and aligned to the Defense Planning Scenarios. The integration of multiple capabilities will assess their operational utility under the Joint Warfighting Concept (JWC). Execution will consist of a series of experimentation that is conducted with existing Service and joint exercise programs. This is an FY 2022 new start.			

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 0604331D8Z / *Rapid Prototyping Program*	**Project (Number/Name)** 073 / *Rapid Defense Experimentation Reserve*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
FY 2022 Plans: Establish the RDER Exercise Coordination and Execution cell. Execute the RDER pilot experiment at Exercise VALIANT SHIELD 2022. Report on results, assessments, and lessons learned, and work with Services for transition of new capabilities to new or existing programs of record. Support refinement of the JWC. ***FY 2023 Plans:*** Fully establish the RDER Exercise Coordination and Execution cell, to include liaisons and planners at the Combatant Commands. Plan and execute the RDER FY 2023 Experimentation Campaign. Report on results, assessments, and lessons learned, and work with Services for transition of new capabilities to new or existing programs of record. Support refinement of the JWC. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** In FY 2022, new project code 073 was created under RPP program element for Rapid Defense Experimentation Reserve (RDER) projects and activities, with funds transferred from other program elements to begin the effort. The effort is fully funded starting in FY 2023.			
Title: End-to-End Mission Thread Studies and Analysis ***Description:*** This is an FY 2022 new start project. This funding supports hypothesis and discovery efforts to better inform the capabilities required to enable the Joint Force to execute the Joint Warfighting Concept. ***FY 2022 Plans:*** Execute Mission Engineering analyses, studies, and discovery experiments that will inform the identification of required warfighting capabilities and technologies to close warfighting gaps and support implementation of the Joint Warfighting Concept. ***FY 2023 Plans:*** Execute Mission Engineering analyses, studies, and discovery experiments (for experimentation series 24-1) that will inform the identification of required warfighting capabilities and technologies to close warfighting gaps and support implementation of the Joint Warfighting Concept. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** In FY 2022, new project code 073 was created under RPP program element for Rapid Defense Experimentation Reserve (RDER) projects and activities, with funds transferred from other program elements to begin the effort. The effort is fully funded starting in FY 2023.	0.000	3.500	6.000
Title: RDER Intelligence Analysis Support	0.000	2.000	3.000

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 0604331D8Z / *Rapid Prototyping Program*	**Project (Number/Name)** 073 / *Rapid Defense Experimentation Reserve*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Description: This is an FY 2022 new start project. This will provide for intelligence analysis of near-peer threats to ensure that capabilities that are included in experimentation efforts are informed by the current threat and adaptable to future adversary capabilities. ***FY 2022 Plans:*** Execute and produce analyses that are relevant to and inform the RDER FY 2023 Experimentation Campaign. Look ahead and plan for relevant analysis to support and inform the RDER FY 2024 campaign. ***FY 2023 Plans:*** Execute and produce analyses that are relevant to and inform the RDER FY 2024 Experimentation Campaign. Look ahead and plan for relevant analysis to support and inform the RDER FY 2025 campaign. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** In FY 2022, the effort stood up to ensure experiments for 23-1 and proposals for 24-1 are threat-informed. Steady state support across the fiscal years requires less funding.			
Title: Joint Warfighting Concept Experiments (Supporting Concepts: Fires, Command and Control, Information Advantage, and Contested Logistics) ***Description:*** This is an FY 2022 new start project. This will provide funding for certain individual capability experiments and experimentation series that support capabilities to enable the JWC supporting concepts, also known as the “functional battles.” Experiment proposals will be evaluated and selected in the prior fiscal year. ***FY 2022 Plans:*** Accelerate selected and Deputy Secretary of Defense approved 23-1 experiments and experimentation series. Evaluate and select FY 2023 proposals. ***FY 2023 Plans:*** Fund selected and Deputy Secretary of Defense approved 23-1 experiments and experimentation series. Evaluate and select FY 2024 proposals. Accelerate 24-1 proposals as funding allows. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** In FY 2022, new project code 073 was created under RPP program element for Rapid Defense Experimentation Reserve (RDER) projects and activities, with funds transferred from other program elements to begin the effort. The effort is fully funded starting in FY 2023.	0.000	21.319	48.500
Title: Joint International Experimentation for the Indo-Pacific	0.000	2.200	2.500

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Description: This is an FY 2022 new start project. This will provide for planning and coordination cells in theater that will work with services, allies, and partners to plan and execute the RDER experimentation campaign in the Indo-Pacific region. ***FY 2022 Plans:*** Stand up the U.S. Indo-Pacific Command RDER experimentation planning and execution team. Plan and execute the RDER experimentation efforts in the Indo-Pacific region. Work with partners, allies, services, agencies, and OUSD (R&E) to develop assessment reports, recommendations, and lessons learned following experiment completion. ***FY 2023 Plans:*** Plan and execute the RDER experimentation efforts in the Indo-Pacific region for RDER Experiment 23-1. Work with partners, allies, services, agencies, and OUSD (R&E) to shape proposals for RDER Experiment 24-1, and develop assessment reports, recommendations, and lessons learned following 23-1 experiment completion. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** No significant change between FY 2022 and FY 2023.			
Accomplishments/Planned Programs Subtotals	0.000	34.019	70.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Service experimentation outcomes will be designed to validate and accelerate required capabilities enabling the JWC by evaluating and integrating prototyped technologies in operationally relevant, multi-domain environments. Experimentation results will facilitate Joint Staff analysis in the evaluation of the Joint Warfighting Concept, assist the Joint Requirements Oversight Counsel in requirements determination, and inform the Deputy's Management Action Group to make budget decisions that effect changes throughout the Department.

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 0604331D8Z / *Rapid Prototyping Program*	**Project (Number/Name)** 073 / *Rapid Defense Experimentation Reserve*

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
VARIOUS	MIPR	MULTI : MULTI	-	-		34.019		70.000		-		70.000	Continuing	Continuing	-
		Subtotal	-	-		34.019		70.000		-		70.000	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	-	-		34.019		70.000		-		70.000	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 0604331D8Z / *Rapid Prototyping Program*	**Project (Number/Name)** 073 / *Rapid Defense Experimentation Reserve*

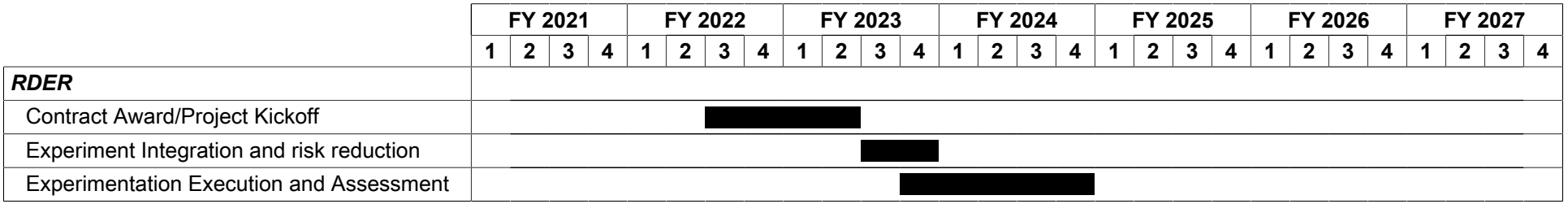

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Office of the Secretary Of Defense		Date: April 2022
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604331D8Z / *Rapid Prototyping Program*	**Project (Number/Name)** 073 / *Rapid Defense Experimentation Reserve*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
RDER				
Contract Award/Project Kickoff	3	2022	2	2023
Experiment Integration and risk reduction	3	2023	4	2023
Experimentation Execution and Assessment	4	2023	4	2024