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Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Office of the Secretary Of Defense **Date:** February 2019

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603923D8Z / <i>Coalition Warfare Program</i>
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COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
Total Program Element	62.235	10.515	8.509	11.316	-	11.316	11.050	10.317	10.501	10.499	Continuing	Continuing
923: <i>Coalition Warfare</i>	62.235	10.515	8.509	11.316	-	11.316	11.050	10.317	10.501	10.499	Continuing	Continuing

Note

The increase from FY2019 to FY2020 is to underpin the additional projects that support the National Defense Strategy/SecDef top three priorities.

A. Mission Description and Budget Item Justification

The Coalition Warfare Program (CWP) supports DoD organizations that: 1) work with foreign partners to collaboratively address strategic technology gaps for current and future missions; 2) develop interoperability solutions for coalition operations; and 3) develop and strengthen defense relationships. CWP is the only Office of the Secretary of Defense (OSD) program with this mission; that comprehensively addresses all three National Defense Strategy lines of effort: to develop a more lethal joint force, strengthen alliances and attract new partners, and implement business practices for greater performance and affordability. Coalition warfare and multinational operations are fundamental features of the U.S. National Security Strategy. Coalitions provide a broad base of technological, operational, and logistical support for military operations and ease the U.S. financial and manpower burdens associated with meeting military goals and objectives. Coalitions and relationships with international partners are high priorities for the nation and the Department of Defense.

CWP supplements a U.S. Government proponent’s funding for cooperative efforts, ensuring U.S. funds are sufficient to complete the engagement with the foreign partner(s). When CWP funds are used to help fund a cooperative project, that project leverages technical and financial contributions of the foreign partner(s) and speeds the development and delivery of technical solutions to the warfighter. For every \$1 CWP has invested in cooperative projects, the program has leveraged \$3 in foreign partner funding – from 76 foreign partners – and \$2 in other U.S. Government funding, providing an overall 5:1 return on investment. CWP funding enables DoD project teams to move a technology into the next stage of development or to complete and transition a technology to operational forces. These projects may also form the basis for future cooperation with international partners.

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B. Program Change Summary (\$ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	10.740	8.528	12.501	-	12.501
Current President's Budget	10.515	8.509	11.316	-	11.316
Total Adjustments	-0.225	-0.019	-1.185	-	-1.185
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.204	-			
• FFRDC	-0.021	-0.019	-	-	-
• Program Adjustments	-	-	-1.185	-	-1.185

Change Summary Explanation

The FY2020 funding request was reduced by \$1.185 million to account for the availability of prior year execution balances.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2020 Office of the Secretary Of Defense **Date:** February 2019

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603923D8Z / <i>Coalition Warfare Program</i>	Project (Number/Name) 923 / <i>Coalition Warfare</i>
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COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
923: <i>Coalition Warfare</i>	62.235	10.515	8.509	11.316	-	11.316	11.050	10.317	10.501	10.499	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Coalition Warfare Program (CWP) supports DoD organizations that: 1) work with foreign partners to collaboratively address strategic technology gaps for current and future missions; 2) develop interoperability solutions for coalition operations; and 3) develop and strengthen defense relationships. CWP is the only Office of the Secretary of Defense (OSD) program with this mission; that comprehensively addresses all three National Defense Strategy lines of effort: to develop a more lethal joint force, strengthen alliances and attract new partners, and implement business practices for greater performance and affordability. Coalition warfare and multinational operations are fundamental features of the U.S. National Security Strategy. Coalitions provide a broad base of technological, operational, and logistical support for military operations and ease the U.S. financial and manpower burdens associated with meeting military goals and objectives. Coalitions and relationships with international partners are high priorities for the nation and the Department of Defense.

CWP supplements a U.S. Government proponent’s funding for cooperative efforts, ensuring U.S. funds are sufficient to complete the engagement with the foreign partner(s). When CWP funds are used to help fund a cooperative project, that project leverages technical and financial contributions of the foreign partner(s) and speeds the development and delivery of technical solutions to the warfighter. For every \$1 CWP has invested in cooperative projects, the program has leveraged \$3 in foreign partner funding – from 76 foreign partners – and \$2 in other U.S. Government funding, providing an overall 5:1 return on investment. CWP funding enables DoD project teams to move a technology into the next stage of development or to complete and transition a technology to operational forces. These projects may also form the basis for future cooperation with international partners.

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

	FY 2018	FY 2019	FY 2020
Title: Coalition Warfare Program (Continuing Projects)	10.515	8.509	11.316
<p>Description: CWP provides funding on a competitive basis to DoD organizations to conduct cooperative research, development, test, and evaluation projects with foreign partners. The goals of the CWP program are to: collaboratively address strategic technology gaps for current and future missions, develop interoperability solutions for coalition operations, and strengthen current defense partnerships and developing new relationships. CWP selects projects for funding through an annual competitive selection process in accordance with Department of Defense and Combatant Command needs.</p> <p>Overall, the program provided additional funding to projects that began in earlier selection cycles. Currently, the funded portfolio includes projects with 13 different foreign partners.</p> <p>Including prior year project selections, for FY 2019 selections, the following projects will encompass CWP funding in FY 2019 and FY 2020:</p>			

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2018	FY 2019	FY 2020
<ul style="list-style-type: none"> - Cold Rapid Airfield Damage Repair Solutions (US Air Force) - Autonomous Hybrid Vertical Take-Off and Landing Unmanned Aerial Systems (VTOL UAS) Carrier (US Navy) - Electromagnetic Maneuver Warfare Resource Allocation Management (US Navy) - Improvised Explosive Device Camera (US Navy) - Micro Electro Mechanical System (MEMS) Accelerometers Navigation-Grade (US Army) - Mission Partner Environment Gateway – extended (OSD CIO) - Measurements and Signals Intelligence (MASINT) sharing for Advanced Indications and Warnings (US Army) - Solid Propellant Enhanced Air-Breathing Rotating Detonation Engine Demonstration (US Navy) - Scintillation Prediction Observations Research Task (USSOUTHCOM) - Tactical High-Speed, RESponsive and Highly-Efficient Round (THRESHER) Propulsion Boost Through Burn (US Air Force) - Interoperability and Collaboration Initiatives: Program provides funds in support of new or planned acquisition programs with the aim of 1) promoting coalition interoperability early in the requirements or technical development phases, 2) harmonizing common goals between U.S. and foreign partners, 3) improving management of collaborative efforts. Funds support workshops, risk reduction efforts, standards development, architecture analysis, and information management initiatives. <p><i>FY 2019 Plans:</i> Completion of efforts that reduce size, weight and power of imaging sensors, develop autonomous undersea power stations and improve capability of scalable warhead for an unmanned air vehicle. The Interoperability and Collaboration Initiatives Program funds efforts aimed at building partnerships, improving U.S. interoperability with foreign partners and improving collaborative project processes.</p> <p><i>FY 2020 Plans:</i> Completion of efforts that will reduce size, weight, and power of non-GPS positioning, navigation, and timing processors for soldier-borne equipment; develop autonomous vertical take-off and landing unmanned aerial systems deployment and charging from mobile ground and surface vessel units; develop solid- and liquid-fueled ramjet engines, and develop a coalition interoperable electronic warfare battle management system for common operating picture.</p> <p><i>FY 2019 to FY 2020 Increase/Decrease Statement:</i> FY 2019 to FY 2020 increase is for the additional projects that support the National Defense Strategy/SecDef top three priorities.</p>			
Accomplishments/Planned Programs Subtotals	10.515	8.509	11.316

C. Other Program Funding Summary (\$ in Millions) N/A

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

Remarks

D. Acquisition Strategy

The Combatant Commands, Services, Defense Agencies, and the Office of the Secretary of Defense nominate candidate projects on an annual basis. CWP provides selected projects up to three years of funding. The Program selects projects that address DoD priorities and meet the needs and requirements specified by the Joint Staff and the Combatant Commanders. Projects have equitable contributions from international partners, strong potential for transition, Combatant Command endorsement, and contribute to allied interoperability and/or meet a user need.

E. Performance Metrics

After successful completion of the competitive nomination process, initial project funding is dependent on receipt of project documentation, which includes financial information, project plan, description of project team, etc. Continued project funding is dependent on compliance with CWP requirements, which include: adequate progress toward each project's stated goals, timely reporting on financial status and project activities, financial document close-out, provision of updated project plans and charts, and progress towards transition goals.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Office of the Secretary Of Defense **Date:** February 2019

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Product Development (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Coalition Warfare Program Project Product Development Costs	Various	Various : Various	42.976	8.867		6.819		9.536		-		9.536	-	-	-
Subtotal			42.976	8.867		6.819		9.536		-		9.536	-	-	N/A

Test and Evaluation (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Coalition Warfare Program Project Test and Evaluation Costs	Various	Various : Various	11.322	0.848		0.875		0.950		-		0.950	-	-	-
Subtotal			11.322	0.848		0.875		0.950		-		0.950	-	-	N/A

Management Services (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Coalition Warfare Program Project Management Services Costs	Various	Various : Various	7.937	0.800		0.815		0.830		-		0.830	-	-	-
Subtotal			7.937	0.800		0.815		0.830		-		0.830	-	-	N/A

	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		62.235	10.515		8.509		11.316		-	11.316	-	-	N/A

Remarks

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Office of the Secretary Of Defense **Date:** February 2019

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<u>CWP Project Plan</u>	10/1/2018	10/1/2019	10/1/2020	10/1/2021	10/1/2022	10/1/2023	10/1/2024
FY 2018 Project Execution							
FY 2019 Project Execution							
FY 2020 Project Execution							
FY 2021 Project Execution							
FY 2022 Project Execution							
FY 2023 Project Execution							
FY 2024 Project Execution							

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Office of the Secretary Of Defense		Date: February 2019
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FY 2018 CWP Project Execution	1	2018	4	2019
FY 2019 CWP Project Execution	1	2019	4	2020
FY 2020 CWP Project Execution	1	2020	4	2021
FY 2021 CWP Project Execution	1	2021	4	2022
FY 2022 CWP Project Execution	1	2022	4	2023
FY 2023 CWP Project Execution	1	2023	4	2024
FY 2024 CWP Project Execution	1	2024	4	2024