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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Army **Date:** February 2020

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0604768A / <i>Brilliant Anti-Armor Submunition (BAT)</i>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	-	6.568	20.000	24.975	-	24.975	32.769	38.964	9.991	0.000	0.000	133.267
688: <i>ATACMS BLK II</i>	-	1.784	20.000	24.975	-	24.975	32.769	38.964	9.991	0.000	0.000	128.483
P01: <i>MULTI - MODE SEEKER DEVELOPMENT AND TEST</i>	-	4.784	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	4.784

A. Mission Description and Budget Item Justification

This program element was for Army Tactical Missile System Block II (ATACMS BLK II) missile system Brilliant Anti-Armor (BAT) sub-munition. In Fiscal Year (FY) 2018, it was re-purposed for BREAKER and in FY 2019, Cross Domain (CD) ATACMS was added. BREAKER ended in FY 2019 and CD ATACMS was moved to a different program element. In FY 2020 and beyond, Program Element (PE) 0604768A Brilliant Anti-Armor Sub-munition (BAT) funds only Palletized Field Artillery Launcher (PFAL).

Project P01. Multi-Mode Seeker began integrations of Strategic Capabilities Office (SCO) STRIKE-X program demonstrated capabilities into ATACMS. This effort focuses on providing integration of a seeker to search, detect, acquire, and engage moving maritime/land-based targets. There is no funding in FY 2021.

Project 688 is a developmental effort for the PFAL. Previously, PFAL was STRIKE-X capability 1 of the SCO Demonstration program and Cross Domain (CD) ATACMS was STRIKE-X capability 3. PFAL is a palletized erectable launcher that provides alternatives to deliver near-term innovative long-range strike capabilities to improve operational effectiveness for Combatant Commanders. The PFAL launcher consists of an erectable palletized mechanical structure, Fire Control System (FCS), and Power Management System (PMS). PFAL is capable of firing all current Multiple Launch Rocket System (MLRS) Family of Munitions (MFOM) rockets and missiles, to include the Guided Multiple Launch Rocket System (GMLRS), the ATACMS, and future munitions such as the Precision Strike Missile (PrSM) and Extended Range (ER) GMLRS. PFAL is capable of carrying two launch pods each containing either six GMLRS / MLRS rockets or one ATACMS missile. The PFAL launcher is capable of firing from a fixed ground position, Palletized Load System (PLS) trailer, or maritime vessel.

FY 2021 Base funding in the amount of \$24.975 million for Project 688 ATACMS BLK II funds the integration efforts needed to implement design improvements required to begin a user evaluation. Base year funding allows for continued design, development, and integration to ensure the safe and effective deployment of operational prototypes in a continuous user evaluation. Procure and receive hardware/materials to implement design improvements to the mechanical structure, FCS, and/or PMS subsystems of existing prototypes transitioned from SCO. Support component-level and system-level qualification and integration. Conduct flight tests of existing munitions with existing prototypes to evaluate readiness for supporting a user evaluation. Procure long lead-time hardware/materials necessary to start the fabrication of up to 7 additional prototypes.

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Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0604768A / <i>Brilliant Anti-Armor Submunition (BAT)</i>
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B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	6.886	25.000	36.000	-	36.000
Current President's Budget	6.568	20.000	24.975	-	24.975
Total Adjustments	-0.318	-5.000	-11.025	-	-11.025
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-5.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.318	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-11.025	-	-11.025

Change Summary Explanation

Funding was decreased by \$11.025 million to fund higher Army priorities.

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Army **Date:** February 2020

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604768A / <i>Brilliant Anti-Armor Submunition (BAT)</i>	Project (Number/Name) 688 / <i>ATACMS BLK II</i>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
688: <i>ATACMS BLK II</i>	-	1.784	20.000	24.975	-	24.975	32.769	38.964	9.991	0.000	0.000	128.483
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project 688 is a developmental effort for the Palletized Field Artillery Launcher (PFAL). Previously, PFAL was STRIKE-X capability 1 of the Strategic Capabilities Office (SCO) Demonstration program and Cross Domain Army Tactical Missile System (CD ATACMS) was STRIKE X capability 3. PFAL is a palletized erectable launcher that provides alternatives to deliver near-term innovative long-range strike capabilities to improve operational effectiveness for Combatant Commanders. The PFAL launcher consists of an erectable palletized mechanical structure, Fire Control System (FCS), and Power Management System (PMS). PFAL is capable of firing all current Multiple Launch Rocket System (MLRS) Family of Munitions (MFOM) rockets and missiles, to include the Guided Multiple Launch Rocket System (GMLRS), ATACMS, and future munitions such as the Precision Strike Missile (PrSM) and Extended Range (ER) GMLRS. PFAL is capable of carrying two launch pods each containing either six GMLRS / MLRS rockets or one ATACMS missile. The PFAL launcher is capable of firing from a fixed ground position, Palletized Load System (PLS) trailer, or maritime vessel.

Fiscal Year (FY) 2021 Base funding in the amount of \$24.975 million for Project 688 ATACMS BLK II funds the integration efforts needed to implement design improvements required to begin a user evaluation. Base year funding allows for continued design, development, and integration to ensure the safe and effective deployment of operational prototypes in a continuous user evaluation. Procure and receive hardware/materials to implement design improvements to the mechanical structure, FCS, and/or PMS subsystems of existing prototypes transitioned from SCO. Support component-level and system-level qualification and integration. Conduct flight tests of existing munitions with existing prototypes to evaluate readiness for supporting a user evaluation. Procure long lead-time hardware/materials necessary to start the fabrication of up to 7 additional prototypes.

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

	FY 2019	FY 2020	FY 2021
<p>Title: Strategic Capabilities Office (SCO) BREAKER program</p> <p>Description: The SCO BREAKER program demonstrated capabilities to defeat armored targets and conducted warhead component requirements development, system integration analysis, and transition planning targeted at rapid qualification and fielding of the armor engagement capability. There is no funding in FY 2020 and beyond.</p>	1.784	-	-
<p>Title: Palletized Field Artillery Launcher (PFAL)</p> <p>Description: The PFAL Program provides a palletized erectable launcher capable of firing the MLRS MFOM. This effort will refine prototypes against Combatant Commanders specific requirements to support a continuous user evaluation.</p> <p>FY 2020 Plans:</p>	-	19.092	24.975

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604768A / <i>Brilliant Anti-Armor Submunition (BAT)</i>	Project (Number/Name) 688 / <i>ATACMS BLK II</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
<p>FY 2020 was the first year of funding for Palletized Field Artillery Launcher under Project 688 ATACMS BLK II. Conducted analysis and redesign to demonstrate safe and effective design, development, and deployment of prototypes with Soldiers as part of a continuous user evaluation.</p> <p>FY 2021 Plans: Base year funding allows for continued design, development, and integration to ensure the safe and effective deployment of operational prototypes in a continuous user evaluation. Procure and receive hardware/materials to implement design improvements to the mechanical structure, FCS, and/or PMS subsystems of existing prototypes transitioned from the SCO. Support component-level and system-level qualification and integration. Conduct flight tests of existing munitions with existing prototypes to evaluate readiness for supporting a user evaluation. Procure long lead-time hardware/materials necessary to start the fabrication of up to 7 additional prototypes.</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: Increase of \$4.975 million in FY 2021 facilitates fabrication of PFAL prototypes.</p>			
<p>Title: FY 2020 SBIR/STTR Transfer</p> <p>Description: Funding transferred in accordance with Title 15 USC ?638</p> <p>FY 2020 Plans: Funding transferred in accordance with Title 15 USC ?638</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC ?638</p>	-	0.908	-
Accomplishments/Planned Programs Subtotals	1.784	20.000	24.975

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

N/A

Remarks

D. Acquisition Strategy

The PFAL transitions from a SCO managed effort to management by the Precision Fires Rocket and Missile Systems Project Office. The PFAL program performs development efforts required to refine prototypes against Combatant Commander's specific requirements to support a user evaluation. The PFAL program will conduct analysis and implement design improvements to demonstrate safe and effective design to enable deployment of prototypes as part of a continuous user evaluation.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604768A / <i>Brilliant Anti-Armor Submunition (BAT)</i>	Project (Number/Name) 688 / <i>ATACMS BLK II</i>
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Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Government Program Management	MIPR	Various : RSA	0.900	0.788	Nov 2018	-		0.872	Nov 2020	-		0.872	0.000	2.560	-
FY 2020 SBIR/STTR Transfer	TBD	Various : Various	-	-		0.908		-		-		-	0.000	0.908	-
Subtotal			0.900	0.788		0.908		0.872		-		0.872	0.000	3.468	N/A

Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
FY 2019 SBIR / STTR Transfer	TBD	TBD : TBD	-	0.159		-		-		-		-	0.000	0.159	-
BREAKER Warhead Development	C/CPFF	LMMFC : Dallas, TX	2.100	0.200	Jan 2019	-		-		-		-	0.000	2.300	-
BREAKER System Analysis, Requirement & Spec Dev	MIPR	AMRDEC : Redstone Arsenal, AL	0.840	0.637	Nov 2018	-		-		-		-	0.000	1.477	-
PFAL Development Engineering	MIPR	CCDC AvMC : Redstone Arsenal	-	-		19.092	Jan 2020	8.649	Dec 2020	-		8.649	126.000	153.741	-
PFAL Prototype Development	C/CPIF	AMTC : Redstone Arsenal, AL	-	-		-		3.259	Dec 2020	-		3.259	0.000	3.259	-
Prototype Fabrication	TBD	TBD : TBD	-	-		-		10.649	Dec 2020	-		10.649	0.000	10.649	-
Subtotal			2.940	0.996		19.092		22.557		-		22.557	126.000	171.585	N/A

Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Quality, Safety, Systems Engineering, and Analysis	TBD	Various : Redstone Arsenal, AL	-	-		-		0.457	Dec 2020	-		0.457	0.000	0.457	-
Subtotal			-	-		-		0.457		-		0.457	0.000	0.457	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604768A / <i>Brilliant Anti-Armor Submunition (BAT)</i>	Project (Number/Name) 688 / <i>ATACMS BLK II</i>
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Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Test Support	MIPR	Various : Various	-	-		-		1.089	Dec 2020	-		1.089	0.000	1.089	-
Subtotal			-	-		-		1.089		-		1.089	0.000	1.089	N/A
Project Cost Totals			3.840	1.784		20.000		24.975		-		24.975	126.000	176.599	N/A

Remarks
 Acronyms:
 AvMC: Aviation and Missile Center;
 AMTC: Aviation & Missile Technology Consortium;
 CCDC: Combat Capabilities Development Command;
 AMRDEC: Aviation and Missile Research, Development and Engineering Command;
 LMMFC: Lockheed Martin Missiles and Fire Control;
 RSA: Redstone Arsenal, Alabama;
 CD: Cross Domain

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604768A / <i>Brilliant Anti-Armor Submunition (BAT)</i>	Project (Number/Name) 688 / <i>ATACMS BLK II</i>

Event Name	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025			
	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
System Analysis, Requirement & Spec Development	█				█																							
Warhead Development	█				█																							
Contract Requirements Package Development	█				█																							
PFAL Development Engineering	█				█				█				█				█											
PFAL Flight Tests	█				█				█																			
PFAL Prototype Fabrication	█				█				█				█				█											
PFAL Prototype User Evaluation	█				█				█				█				█											
PFAL Program decision	█				█				█				█				█				█							

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604768A / <i>Brilliant Anti-Armor Submunition (BAT)</i>	Project (Number/Name) 688 / <i>ATACMS BLK II</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
System Analysis, Requirement & Spec Development	1	2018	4	2019
Warhead Development	1	2019	4	2019
Contract Requirements Package Development	1	2018	4	2019
PFAL Development Engineering	1	2020	1	2024
PFAL Flight Tests	3	2020	3	2021
PFAL Prototype Fabrication	1	2021	4	2023
PFAL Prototype User Evaluation	1	2022	3	2024
PFAL Program decision	3	2024	3	2024

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Army **Date:** February 2020

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604768A / <i>Brilliant Anti-Armor Submunition (BAT)</i>	Project (Number/Name) P01 / <i>MULTI - MODE SEEKER DEVELOPMENT AND TEST</i>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
<i>P01: MULTI - MODE SEEKER DEVELOPMENT AND TEST</i>	-	4.784	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	4.784
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

Multi-Mode Seeker will integrate Strategic Capabilities Office (SCO) STRIKE-X program demonstrated capabilities into Army Tactical Missile System (ATACMS). This effort focuses on providing integration of a seeker to search, detect, acquire, and engage moving maritime/land-based targets.

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

	FY 2019	FY 2020	FY 2021
Title: Transition of SCO demonstrated capabilities to defeat maritime targets	4.784	-	-
Description: Conduct seeker component requirements development, system integration analysis, and transition planning targeted at rapid qualification and fielding of the maritime engagement capability. There is no funding in Fiscal Year (FY) 2020 and beyond.			
Accomplishments/Planned Programs Subtotals	4.784	-	-

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

N/A

Remarks

D. Acquisition Strategy

Accelerate the transition of SCO STRIKE-X program demonstrated capabilities into ATACMS.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604768A / <i>Brilliant Anti-Armor Submunition (BAT)</i>	Project (Number/Name) P01 / <i>MULTI - MODE SEEKER DEVELOPMENT AND TEST</i>
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Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Government Program Management	MIPR	Various : RSA	0.900	0.947	Nov 2018	-		-		-		-	0.000	1.847	-
Subtotal			0.900	0.947		-		-		-		-	0.000	1.847	N/A

Remarks
RSA-Redstone Arsenal, Alabama

Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Seeker Development	C/CPFF	Various : Various	0.900	1.500	Jan 2019	-		-		-		-	0.000	2.400	-
System Analysis, Requirement & Spec Dev	MIPR	AMRDEC : RSA	1.123	1.337	Jan 2019	-		-		-		-	0.000	2.460	-
Subtotal			2.023	2.837		-		-		-		-	0.000	4.860	N/A

Remarks
AMRDEC-U.S. Army Research, Development and Engineering Command; RSA-Redstone Arsenal, Alabama

Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Test Support Hardware	MIPR	Redstone Test Center : RSA	1.123	1.000	Nov 2018	-		-		-		-	0.000	2.123	-
Subtotal			1.123	1.000		-		-		-		-	0.000	2.123	N/A

Remarks
RSA-Redstone Arsenal, Alabama

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Army			Date: February 2020
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604768A / <i>Brilliant Anti-Armor Submunition (BAT)</i>	Project (Number/Name) P01 / <i>MULTI - MODE SEEKER DEVELOPMENT AND TEST</i>	

Event Name	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025			
	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
System Analysis, Requirement & Spec Development																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Army		Date: February 2020
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
System Analysis, Requirement & Spec Development	1	2018	1	2019
Sensor Study & Analysis	2	2018	4	2018