Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Army											Date: February 2020	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0607134A *I Long Range Precision Fires (LRPF)*							
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	-	152.573	156.682	122.733	-	122.733	145.681	183.768	231.673	231.680	Continuing	Continuing
ES1: *Long Range Precision Fires (LRPF)*	-	152.573	156.682	122.733	-	122.733	145.681	183.768	231.673	231.680	Continuing	Continuing
Program MDAP/MAIS Code: 494												

A. Mission Description and Budget Item Justification

Precision Strike Missile (PrSM), formerly known as Long Range Precision Fires (LRPF), is the Army's next generation surface-to-surface missile that replaces and improves upon Army Tactical Missile System (ATACMS) capabilities. PrSM requirements include: max range of greater than 400 kilometers (km), specified lethality against the designated target set, a Launch Pod Missile Container (LPMC) that holds two missiles, survivability in a threat environment, and compatibility with the existing launcher platforms (M270A2 Multiple Launch Rocket System (MLRS) and M142 High Mobility Artillery Rocket System (HIMARS)). PrSM will meet cluster and insensitive munition requirements and is being designed with an open system architecture that provides the capability for future growth to counter new and emerging threats. Future Spirals will include the ability to attack moving maritime and ground targets, provide increased lethality and extended range. The mission of the PrSM System is to attack/ neutralize/suppress/destroy targets using missile delivered indirect precision fires. PrSM will provide Joint Force Commanders with a 24/7, all-weather capability to attack critical and time sensitive area and point targets including threat air defense, missile launchers, command and control centers, assembly/ staging areas and high payoff targets at all depths of the multi-domain battlefield. PrSM will counter the enemy's ability to conduct combat maneuver and air defense operations. Milestone A was approved on 31 March 2017 and the program is currently in the Technology Maturation and Risk Reduction (TMRR) phase.

Fiscal Year (FY) 2021 base dollars in the amount of $122.733 million supports the transition of PrSM from TMRR to Engineering Manufacturing Development (EMD). The program successfully completed a flight demonstration in 1st Quarter (1Q) FY 2020 and awarded a follow-on TMRR agreement to a single contractor. TMRR efforts to include: finalize tactical design, complete sub-assembly and missile qualification testing, finalize missile interface, and continue software integration with existing launcher platforms before flight testing four (4) PrSM Engineering Development Test (EDT) missiles. Additionally, the program will establish pilot line manufacturing processes and validate capabilities to support PrSM production. Demonstration of capabilities through a rigorous test program ensures the Army makes an informed production decision for building missiles beginning in FY 2022. After completion of Milestone B, the Government will award a single EMD phase contract for final Government safety and qualification testing.

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Army					Date: February 2020
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 7: *Operational Systems Development*		R-1 Program Element (Number/Name) PE 0607134A / *Long Range Precision Fires (LRPF)*			
B. Program Change Summary ($ in Millions)	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**
Previous President's Budget	159.278	164.182	122.852	-	122.852
Current President's Budget	152.573	156.682	122.733	-	122.733
Total Adjustments	-6.705	-7.500	-0.119	-	-0.119
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-7.500			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-6.705	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-0.119	-	-0.119

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army			Date: February 2020
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0607134A / *Long Range Precision Fires (LRPF)*	Project (Number/Name) ES1 / *Long Range Precision Fires (LRPF)*	

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
ES1: *Long Range Precision Fires (LRPF)*	-	152.573	156.682	122.733	-	122.733	145.681	183.768	231.673	231.680	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Precision Strike Missile (PrSM), formerly known as Long Range Precision Fires (LRPF), is the Army's next generation surface-to-surface missile that replaces and improves upon Army Tactical Missile System (ATACMS) capabilities. PrSM requirements include: max range of greater than 400 kilometers (km), specified lethality against the designated target set, a Launch Pod Missile Container (LPMC) that holds two missiles, survivability in a threat environment, and compatibility with the existing launcher platforms (M270A2 Multiple Launch Rocket System (MLRS) and M142 High Mobility Artillery Rocket System (HIMARS)). PrSM will meet cluster and insensitive munition requirements and is being designed with an open system architecture that provides the capability for future growth to counter new and emerging threats. Future Spirals will include the ability to attack moving maritime and ground targets, provide increased lethality and extended range. The mission of the PrSM System is to attack/ neutralize/suppress/destroy targets using missile delivered indirect precision fires. PrSM will provide Joint Force Commanders with a 24/7, all-weather capability to attack critical and time sensitive area and point targets including threat air defense, missile launchers, command and control centers, assembly/ staging areas and high payoff targets at all depths of the multi-domain battlefield. PrSM will counter the enemy's ability to conduct combat maneuver and air defense operations. Milestone A was approved on 31 March 2017 and the program is currently in the Technology Maturation and Risk Reduction (TMRR) phase.

Fiscal Year (FY) 2021 base dollars in the amount of $122.733 million supports the transition of PrSM from TMRR to Engineering Manufacturing Development (EMD). The program successfully completed a flight demonstration in 1st Quarter (1Q) FY 2020 and awarded a follow-on TMRR agreement to a single contractor. TMRR efforts to include: finalize tactical design, complete sub-assembly and missile qualification testing, finalize missile interface, and continue software integration with existing launcher platforms before flight testing four (4) PrSM Engineering Development Test (EDT) missiles. Additionally, the program will establish pilot line manufacturing processes and validate capabilities to support PrSM production. Demonstration of capabilities through a rigorous test program ensures the Army makes an informed production decision for building missiles beginning in FY 2022. After completion of Milestone B, the Government will award a single EMD phase contract for final Government safety and qualification testing.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Technology Maturation and Risk Reduction (TMRR)	152.573	149.567	78.765
Description: TMRR activities to develop the Army's next generation missile capability that doubles volume of fire, meets range requirements by exceeding 400km, provides required lethality for both point and area targets, ensures survivability, meets cluster munition policy requirements, and provides an open system architecture. PrSM provides field artillery units with a deep-strike capability while supporting Brigade, Division, Corps, Army, Theater, Joint and Coalition forces in full, limited or expeditionary operations.			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0607134A / *Long Range Precision Fires (LRPF)*	**Project (Number/Name)** ES1 / *Long Range Precision Fires (LRPF)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
FY 2020 Plans: Finalized tactical design, completed missile software development and launcher integration, completed prototype missile builds, finalized integration at White Sands Missile Range (WSMR) required to conduct system level flight testing, and completed prototype test flights. Continued build of an additional four (4) missiles to support flight testing in FY 2021. Continued to conduct Hardware in the Loop (HWIL), Software in the Loop (SWIL), and 6 Degrees of Freedom (6DoF) analysis. Completed assessment and implementation of software cybersecurity requirements, begun subsystem qualification, and conducted critical missile survivability assessments. Government continued activities to support missile software integration with the HIMARS fire control system to include required interface with Advanced Field Artillery Tactical Data System (AFATDS). Government continued to assess PrSM performance through modeling, simulation, and performance testing. The Army ensured all efforts support transition to Engineering and Manufacturing Development (EMD) in FY 2021. ***FY 2021 Plans:*** Complete execution of TMRR activities to include four (4) PrSM EDT missile flights. One of the flight tests will be a maximum range demonstration. Continue subsystem qualifications, HWIL, SWIL, 6 Degrees of Freedom (6DoF) analysis, and conduct critical missile survivability assessments. Government will continue activities to support PrSM missile software integration with the HIMARS fire control system to include required interface with AFATDS. After the completion of Milestone B, the Product Office will award an EMD contract. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funding decrease in TMRR funding from FY 2020 to 2021 is attributed to the completion of TMRR phase activities and transition to a single contractor in EMD.			
Title: Engineering Manufacturing Development (EMD)	-	-	43.968
Description: EMD activities to develop the Army's next generation missile capability that doubles volume of fire, meets range requirements by exceeding 400km, provides required lethality for both point and area targets, ensures survivability, meets cluster munition policy requirements, and provides an open system architecture. PrSM provides field artillery units with a deep-strike capability while supporting Brigade, Division, Corps, Army, Theater, Joint and Coalition forces in full, limited or expeditionary operations. ***FY 2021 Plans:*** After the completion of Milestone B, the Army will award an EMD. The contractor will identify and implement required design changes informed by TMRR testing, begin any additional sub-assembly system qualification, finalize production planning in support of Manufacturing Readiness Assessments for UMR, and order long lead items for system safety testing and assembly of (12) PQT flight test articles. The Government will continue to assess the contractor's missile performance through modeling,			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0607134A / *Long Range Precision Fires (LRPF)*	**Project (Number/Name)** ES1 / *Long Range Precision Fires (LRPF)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
simulation, and performance testing. The Army will continue tactical software integration on the HIMARS launcher, prioritize required qualification, safety and transportation hazard classification approvals necessary to meet UMR requirements. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** EMD funding increase from FY 2020 to 2021 is attributed to the initiation of EMD in 3Q FY 2021.			
Title: FY 2020 SBIR/STTR Transfer ***Description:*** Funding transferred in accordance with Title 15 USC ?638 ***FY 2020 Plans:*** Funding transferred in accordance with Title 15 USC ?638 ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC ?638	-	7.115	-
Accomplishments/Planned Programs Subtotals	152.573	156.682	122.733

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The PrSM Acquisition Strategy supports development of the Army's next generation surface to surface missile that replaces and improves upon ATACMS capabilities with major improvements in range, effectiveness, lethality, and rate of fire, while meeting insensitive and cluster munition policy requirements. PrSM provides an open system architecture that facilitates future growth. PrSM provides responsive engagement of high value point and area targets by Army and Joint Force Commanders under all weather conditions, at operational ranges defended by enemy air-defense systems. An AoA supporting the MS A decision was completed by U.S. Army Training and Doctrine Command (TRADOC) Analysis Center-White Sands Missile Range (TRAC-WSMR), with an OSD letter of sufficiency issued in September 2015. In 4Q FY 2016, the Army awarded 9 month risk reduction, trade study and initial design development agreements to two contractors. The effort resulted in development of initial baseline designs presented during final technical reviews that resulted in a seamless transition into the TMRR phase. Subsequent to MS A approval on 31 March 2017, the Army awarded TMRR agreements to two contractors. TMRR is ongoing and includes risk reduction activities and further maturation of contractor design concepts. Both contractors participated in a PDR in 1Q FY 2019 to inform design.

In FY 2018, the Army directed acceleration of PrSM capability in response to immediate near-peer threats and the requirement to engage targets with a precision guided missile out to 499km. As a result, the program was restructured to conduct the following key activities previously not planned for in TMRR: finalize tactical designs, build additional missiles for system level EDT flight tests, begin subsystem qualification, and establish a production capability. This approach allows the Army to reduce program risk prior to EMD award, and accelerate an early capability.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0607134A / *Long Range Precision Fires (LRPF)*	**Project (Number/Name)** ES1 / *Long Range Precision Fires (LRPF)*

The EMD phase will include assembly of PQT flight test articles in parallel with completion of ground and system qualification, tactical software integration on the HIMARS and M270A2 launch platforms and production planning efforts. Also during this time the program will refine critical missile survivability assessments to ensure the selected EMD design will successfully meet the Army's PrSM kinetic, electro-magnetic spectrum, cyber, environmental, nuclear requirements. The culmination of these efforts will inform a Government CDR planned for 1Q FY 2022 and support of fielding an early capability via Urgent Materiel Release (UMR) in FY23. After the program meets the UMR requirements the remaining EMD phase activities will complete product development, system level qualification, production readiness assessment, and Initial Operational Test and Evaluation (IOT&E).

Beginning in FY 2021 and thru the Future Years Defense Program (FYDP), the Army has programmed Missile Procurement Army (MIPA) funding on line item number 8540C29600. These funds will support initial UMR fielding to close the capability gap between the current capability and near-peer missile capabilities before the program transitions to Full Rate Production (FRP).

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army			Date: February 2020
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0607134A / *Long Range Precision Fires (LRPF)*	Project (Number/Name) ES1 / *Long Range Precision Fires (LRPF)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Program Management	MIPR	Various : RSA	6.520	1.819	Nov 2018	0.526	Nov 2019	1.984	Dec 2020	-		1.984	Continuing	Continuing	Continuing
FY 2020 SBIR/STTR Transfer	TBD	Various : Various	-	-		7.115		-		-		-	0.000	7.115	-
		Subtotal	6.520	1.819		7.641		1.984		-		1.984	Continuing	Continuing	N/A

Remarks

RSA - Redstone Arsenal, Alabama

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PrSM TMRR - 2 Vendors* (Raytheon and Lockheed Martin)	C/Various	DOTC : Picatinny, NJ	103.153	130.306	Nov 2018	135.869	Nov 2019	56.120	Dec 2020	-		56.120	0.000	425.448	Continuing
PrSM EMD - 1 Vendor	C/FFP	TBD : TBD	-	-		-		43.968	Jun 2021	-		43.968	Continuing	Continuing	Continuing
Development Engineering Support	MIPR	AMCOM/CCDC AvMC/S3I : RSA	4.743	9.988	Nov 2018	9.275	Nov 2019	11.149	Dec 2020	-		11.149	Continuing	Continuing	Continuing
		Subtotal	107.896	140.294		145.144		111.237		-		111.237	Continuing	Continuing	N/A

Remarks

*Lockheed Martin awarded TMRR in 1QFY20 after successful flight test, AMCOM - Aviation and Missile Command; CCDC AvMC - Combat Capabilities Development Center Aviation & Missile Command; DOTC - DoD Ordnance Technology Consortium; OTA - Other Transaction Agreements; S3I - Systems Simulation, Software and Integration; RSA - Redstone Arsenal, Alabama

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Quality, Safety, Systems Engineering, and Analysis	SS/T&M	Various : RSA	1.829	2.491	Nov 2018	1.270	Nov 2019	2.444	Dec 2020	-		2.444	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army			Date: February 2020
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0607134A / *Long Range Precision Fires (LRPF)*	Project (Number/Name) ES1 / *Long Range Precision Fires (LRPF)*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			1.829	2.491		1.270		2.444		-		2.444	Continuing	Continuing	N/A

Remarks

RSA - Redstone Arsenal, AL

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Support	MIPR	WSMR; RTC : WSMR,NM; RSA, AL	0.767	7.969	Nov 2018	2.627	Nov 2019	7.068	Dec 2020	-		7.068	Continuing	Continuing	Continuing
Subtotal			0.767	7.969		2.627		7.068		-		7.068	Continuing	Continuing	N/A

Remarks

WSMR, NM - White Sands Missile Range, New Mexico; RTC - Redstone Test Center; RSA - Redstone Arsenal, Alabama

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	117.012	152.573		156.682		122.733		-		122.733	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0607134A / *Long Range Precision Fires (LRPF)*	**Project (Number/Name)** ES1 / *Long Range Precision Fires (LRPF)*

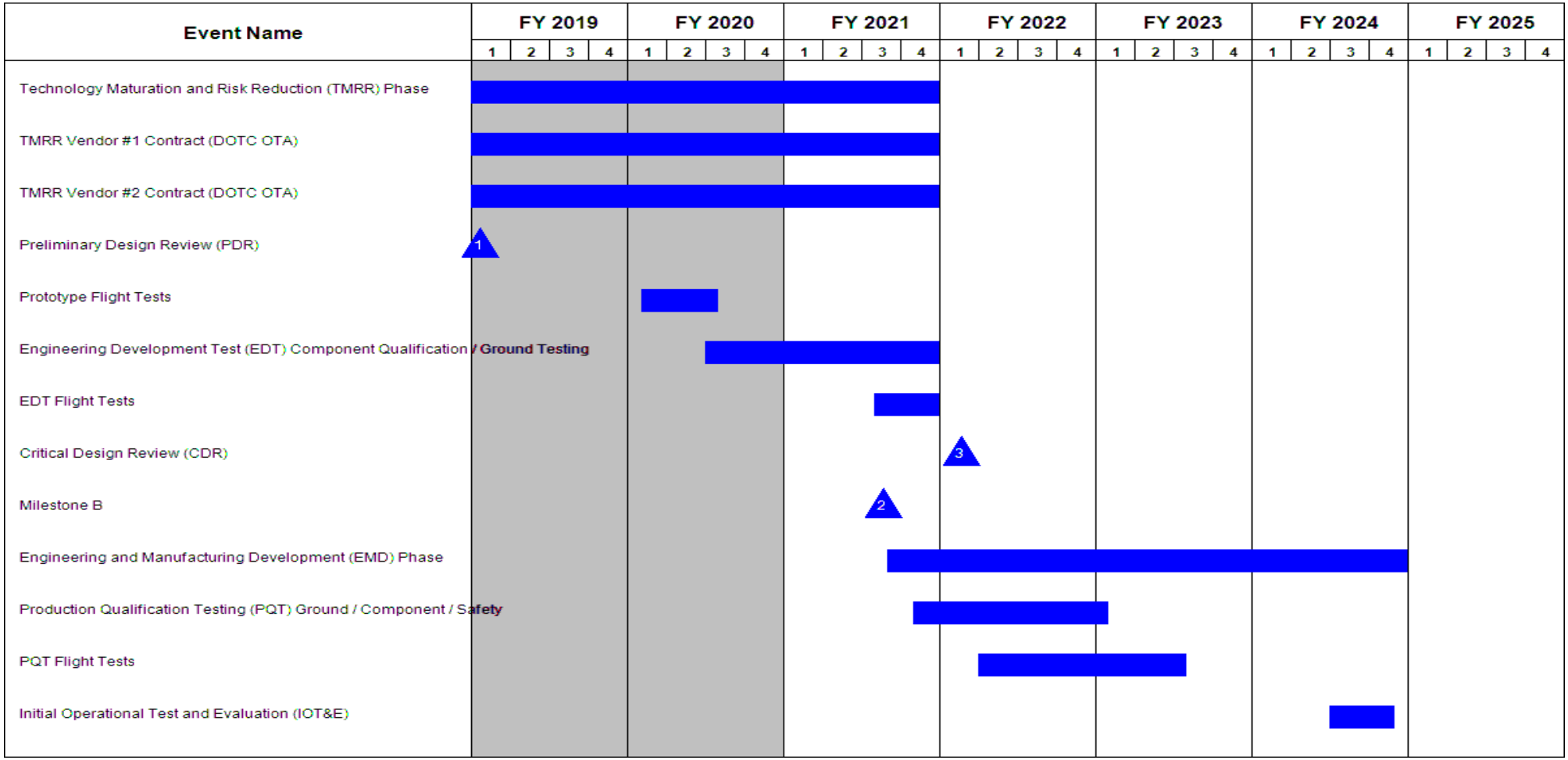

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0607134A / *Long Range Precision Fires (LRPF)*	**Project (Number/Name)** ES1 / *Long Range Precision Fires (LRPF)*

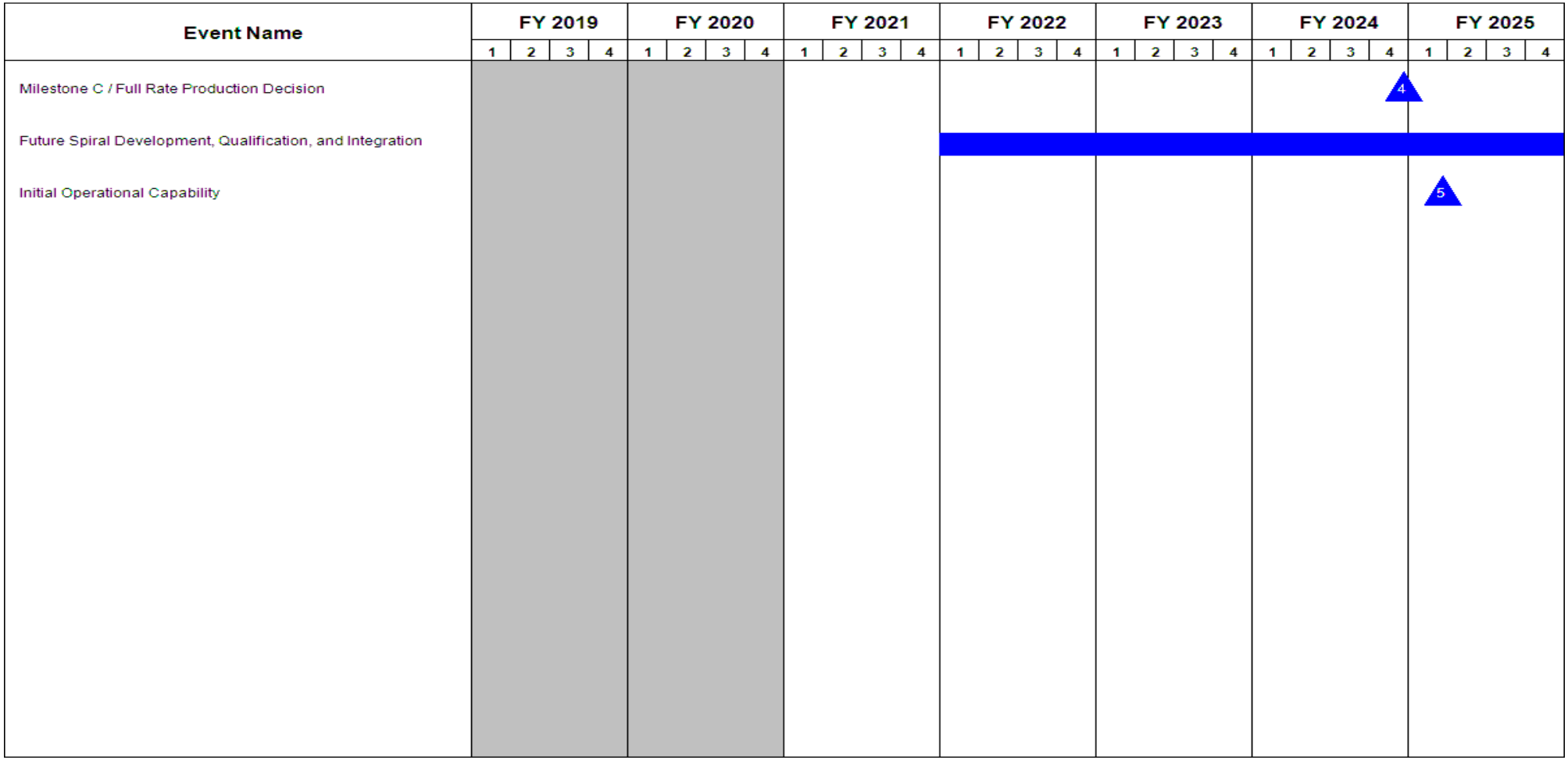

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0607134A / *Long Range Precision Fires (LRPF)*	**Project (Number/Name)** ES1 / *Long Range Precision Fires (LRPF)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
AoA	2	2015	3	2015
Materiel Solution Analysis (MSA)	1	2014	3	2017
MSA Vendor #1 Contract (DOTC OTA)	3	2016	3	2017
MSA Vendor #2 Contract (DOTC OTA)	3	2016	3	2017
Milestone A	2	2017	2	2017
Technology Maturation and Risk Reduction (TMRR) Phase	2	2017	4	2021
TMRR Vendor #1 Contract (DOTC OTA)	3	2017	4	2021
TMRR Vendor #2 Contract (DOTC OTA)	3	2017	4	2021
System Requirements Review (SRR)	4	2017	4	2017
System Functional Review (SFR)	1	2018	1	2018
Preliminary Design Review (PDR)	1	2019	1	2019
Prototype Flight Tests	1	2020	3	2020
Engineering Development Test (EDT) Component Qualification / Ground Testing	3	2020	4	2021
EDT Flight Tests	3	2021	4	2021
Critical Design Review (CDR)	1	2022	1	2022
Milestone B	3	2021	3	2021
Engineering and Manufacturing Development (EMD) Phase	3	2021	4	2024
Production Qualification Testing (PQT) Ground / Component / Safety	4	2021	1	2023
PQT Flight Tests	2	2022	3	2023
Initial Operational Test and Evaluation (IOT&E)	3	2024	4	2024
Milestone C / Full Rate Production Decision	4	2024	4	2024
Future Spiral Development, Qualification, and Integration	1	2022	4	2025

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0607134A / *Long Range Precision Fires (LRPF)*	**Project (Number/Name)** ES1 / *Long Range Precision Fires (LRPF)*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Initial Operational Capability	1	2025	1	2025