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 0708045A / *End Item Industrial Preparedness Activities*

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	-	106.766	108.348	61.012	-	61.012	62.484	63.689	64.326	64.974	0.000	531.599
E25: *Mfg Science & Tech*	-	51.966	108.348	61.012	-	61.012	62.484	63.689	64.326	64.974	0.000	476.799
EA2: *MANTECH INITIATIVES (CA)*	-	54.800	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	54.800

A. Mission Description and Budget Item Justification

This Program Element (PE) develops, demonstrates, and transitions manufacturing processes that enable improvements in producibility and affordability of emerging and enabling components and subsystems of Army ground and air platforms, Soldier systems, weapons systems, air & missile defense systems, and sensors and electronics. Initiatives within the PE result in cost savings and reduced risk of transitioning military-unique manufacturing processes into production. Project E25 fosters the transfer of new/improved manufacturing technologies to the industrial base, including manufacturing efforts that have potential for high payoff across the spectrum of Army systems.

The cited work is consistent with the Under Secretary of Defense, Research and Engineering science and technology focus areas and the Army Modernization Strategy.

Work in this PE is performed by the United States (U.S.) Army Futures Command; and the Army Space and Missile Defense Command/Army Forces Strategic Command (SMDC/ARSTRAT), Huntsville, AL.

B. Program Change Summary ($ in Millions)

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	108.696	59.848	61.071	-	61.071
Current President's Budget	106.766	108.348	61.012	-	61.012
Total Adjustments	-1.930	48.500	-0.059	-	-0.059
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	48.500			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-1.930	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-0.059	-	-0.059

Congressional Add Details ($ in Millions, and Includes General Reductions)

	FY 2019	FY 2020
Project: EA2: *MANTECH INITIATIVES (CA)*		

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 0708045A / *End Item Industrial Preparedness Activities*

Congressional Add Details ($ in Millions, and Includes General Reductions)	**FY 2019**	**FY 2020**
Congressional Add: *Additive Manufacturing Technology Insertion*	10.007	-
Congressional Add: *Nanoscale Materials*	19.935	-
Congressional Add: *Lightweight Transparent Armor*	10.006	-
Congressional Add: *Engineering Data Synchronization*	9.807	-
Congressional Add: *Power Take-Off Hybridization*	5.006	-
Congressional Add: *FY 2018 NDAA SEC 825 MDAP Cost Overrun*	0.039	-
Congressional Add Subtotals for Project: EA2	54.800	-
Congressional Add Totals for all Projects	54.800	-

Change Summary Explanation

FY20 increase due to congressional adds of $48.500 Million

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 0708045A / *End Item Industrial Preparedness Activities*	**Project (Number/Name)** E25 / *Mfg Science & Tech*

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
E25: *Mfg Science & Tech*	-	51.966	108.348	61.012	-	61.012	62.484	63.689	64.326	64.974	0.000	476.799
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project develops and demonstrates manufacturing processes that enable improvements in producibility and affordability of emerging and enabling components and subsystems of Army ground and air platforms, Soldier systems, weapons systems, air & missile defense systems, and sensors and electronics. Focus is on components and subsystems such as advanced armor, lightweight structural components, sensors, propellants, and gun tubes. Additionally, work is performed to advance the state of the art in manufacturing processing and fabrication techniques for coatings, multifunctional materials, and structural elements for Army specific applications.

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: Long Range Precision Fires ***Description:*** The effort funds manufacturing improvements to support areas such as Advanced Weapon Systems, Fire Control, and Advanced Energetics and Warheads. Work focuses on addressing challenges in areas such as enhanced missile seekers; fuses and initiators for munitions; and boring, honing, and rifling cannon and mortar barrels. ***FY 2020 Plans:*** Demonstrate advanced materials, processing techniques, and tools to fabricate, bore, and rifle large caliber mortar and cannon tubes that enable long range fires; demonstrate more efficient propellant mixing and packing processes for rocket motors. ***FY 2021 Plans:*** Will demonstrate reduced cost and time in manufacturing activities of advanced material, advanced processes, and new tooling to enable long range precision fires. Will decrease the use of multiple tools and eliminate long lead times on repairing and replacing items for Long Range Precision Fires. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funding realigned to support higher priority Army modernization efforts within the project.	9.716	6.054	2.962
Title: Next Generation Combat Vehicle ***Description:*** This effort funds manufacturing technology advances needed for more affordable components and subsystems for tactical and combat vehicles and weapons systems. Work focuses on addressing challenges in areas such as advanced armor, lighter weight components, insensitive propellants, precision munitions, and vehicle power devices.	19.375	25.029	22.180

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 0708045A / *End Item Industrial Preparedness Activities*	**Project (Number/Name)** E25 / *Mfg Science & Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
FY 2020 Plans: Mature processing of weight sensitive armor and protection systems that meet size, weight and power requirements; demonstrate manufacturing processes and non-destructive evaluation techniques to enable advanced welding for vehicle structures; develop manufacturing technologies that address unit cost and enable lower life cycle costs as compared to currently available modern combat powertrain components; develop manufacturing processes required to produce composite rubber track systems applicable to heavy ground combat systems. ***FY 2021 Plans:*** Will use additive manufacturing advanced practices to reduce transition time and cost in replacement parts to increase in-theatre readiness. Will develop manufacturing processes to produce lighter weight armor protection and evaluate advanced welding practices. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funding realigned to support higher priority Army modernization efforts within the project.			
Title: Future Vertical Lift ***Description:*** This effort funds manufacturing technology advances needed for more affordable manned and unmanned aircraft components and subsystems. Work focuses on addressing challenges in areas such as engine performance and life, reliable component integration/attachment, structural durability at low weight, sensors for aircraft protection and pilotage, and reduced corrosion. ***FY 2020 Plans:*** Develop novel automated manufacturing methods for composite air platform components which are lighter weight and more maintainable; develop manufacturing of targeting sensors for airborne applications. ***FY 2021 Plans:*** Will develop manufacturing processes to increase performance and increase process automation with more reliable materials; will develop novel approaches to reduce acquisition cost of materials, reduce component costs and reduce weight of overall components. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funding increased to support the Army Future Vehicle Lift modernization priority.	1.436	4.877	6.290
Title: Networks and Command, Control, Communications and Intelligence ***Description:*** This effort funds manufacturing technology advances needed for more affordable components and subsystems for intelligence, surveillance, reconnaissance and targeting systems, mission command systems, electronic warfare and improved	9.356	12.181	12.440

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 0708045A / *End Item Industrial Preparedness Activities*	**Project (Number/Name)** E25 / *Mfg Science & Tech*	

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
explosive device detect/defeat systems. Work focuses on addressing challenges in areas such as large format multi-color focal plane arrays, flexible displays, night vision sensors, target detectors, advanced antennas and sensors. ***FY 2020 Plans:*** Improve process maturation and material growth and yield of dual band digital imagers for aviation protection and pilotage; demonstrate optics coating deposition techniques for 3rd generation sensor platforms; develop Micro Electro Mechanical Systems (MEMS)-based navigation-grade inertial measurement units. ***FY 2021 Plans:*** Will improve manufacturing processes for digital sensors for aviation and pilotage; will demonstrate manufacturing of high dynamic range digital pixel images for aviation; develop manufacturing processes of dual band optical coatings. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funding change reflects planned lifecycle of this effort.			
Title: Air & Missile Defense ***Description:*** This effort funds manufacturing improvements to support areas such as High Energy Laser system components (e.g. diodes, optics), interceptor components, and armament systems for counter-unmanned aerial systems and counter-rocket, artillery, and mortar systems. ***FY 2020 Plans:*** Develop prototype tooling, test, and evaluation processes to improve manufacturing yield for high energy laser diodes; optimize manufacturing techniques for High Energy Laser (HEL) optics through manufacturing improvements to reduce lead time; develop improvements to the manufacturing process for electromagnetic mitigation devices to eliminate co-site, jamming, and other threats to radar and other communication systems; design and develop a manufacturing process for critical gyroscope components. ***FY 2021 Plans:*** Will develop high energy lasers that reduce manufacturing and supply chain costs and provide engagement capability against rockets, artillery, mortars and Unmanned Aerial Vehicles (UAVs); Will produce manufacturing processes that adapt to eliminate co-site, jamming and other electromagnetic spectrum threats; will optimize production processes to manufacture large precision optics. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funding increased to support the Army Air and Missile Defense modernization priority.	1.436	3.553	8.000
Title: Soldier Lethality	6.550	5.138	9.140

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 0708045A / *End Item Industrial Preparedness Activities*	**Project (Number/Name)** E25 / *Mfg Science & Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Description: This effort funds manufacturing technology advances needed for more affordable components and subsystems in areas such as aerial delivery of supplies, expeditionary basing, Soldier-borne sensors, clothing, and protective equipment. Work focuses on addressing challenges in areas such as multifunctional fabrics for shelters, uniforms and portage equipment; lightweight materials for body armor; and medical technologies such as biotechnology. ***FY 2020 Plans:*** Develop manufacturing scale up for advanced metal organic materials to enable better integrated warfighter protection systems; advance manufacturing processes low light level imagers for night time situational awareness for Soldiers. ***FY 2021 Plans:*** Will continue to develop manufacturing techniques for low next generation hand grenades and advance soldier protection with Chemical, Biological, Radiological, and Nuclear (CBRN) filters. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funding increased to support the Army Soldier Lethality modernization priority.			
Title: Cross-cutting ***Description:*** This effort funds manufacturing technology advances with impact across processes or platforms of Army interest. Work focuses on addressing challenges in areas such as advanced additive manufacturing technologies for fabrication of weapons systems, platforms, and munitions; and novel manufacturing techniques for expedient and cost effective repair of worn or damaged platform components. ***FY 2020 Plans:*** Demonstrate advanced machining solutions for large caliber weapons. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funding realigned to support higher priority Army modernization efforts within the project.	4.060	1.747	-
Title: FY 2018 NDAA SEC 825 MDAP Cost Overrun ***Description:*** FY 2018 NDAA SEC 825 MDAP Cost Overrun	0.037	-	-
Title: FY 2020 Congressional Add - Technical Textiles ***Description:*** Program increase - technical textiles ***FY 2020 Plans:***	-	4.819	-

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 0708045A / *End Item Industrial Preparedness Activities*	**Project (Number/Name)** E25 / *Mfg Science & Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
FY 2020 Congressional Add ***FY 2020 to FY 2021 Increase/Decrease Statement:*** FY 2020 congressional add funding to support technical textiles.			
Title: FY 2020 Congressional Add - Nanoscale Materials Manufacturing ***Description:*** Program increase - nanoscale materials manufacturing ***FY 2020 Plans:*** FY 2020 Congressional Add ***FY 2020 to FY 2021 Increase/Decrease Statement:*** FY 2020 congressional add funding to support nanoscale materials manufacturing.	-	12.318	-
Title: FY 2020 Congressional Add - Glass Separators for Lithium Batteries ***Description:*** Program increase - glass separators for lithium batteries ***FY 2020 Plans:*** FY 2020 Congressional Add ***FY 2020 to FY 2021 Increase/Decrease Statement:*** FY 2020 congressional add funding to support glass separators for lithium batteries.	-	4.819	-
Title: FY 2020 Congressional Add - Additive Manufacturing Technology Insertion ***Description:*** Program increase - additive manufacturing technology insertion ***FY 2020 Plans:*** FY 2020 Congressional Add ***FY 2020 to FY 2021 Increase/Decrease Statement:*** FY 2020 congressional add funding to support additive manufacturing technology insertion.	-	4.819	-
Title: FY 2020 Congressional Add - Power Take-off Hybridization ***Description:*** Program increase - Power take-off hybridization ***FY 2020 Plans:***	-	6.819	-

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
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B. Accomplishments/Planned Programs ($ in Millions)	**FY 2019**	**FY 2020**	**FY 2021**
FY 2020 Congressional Add ***FY 2020 to FY 2021 Increase/Decrease Statement:*** FY 2020 congressional add funding to support power take-off hybridization.			
Title: FY 2020 Congressional Add - Tungsten Manufacturing Affordability Initiative for Armaments ***Description:*** Program increase - Tungsten manufacturing affordability initiative for armaments ***FY 2020 Plans:*** FY 2020 Congressional Add ***FY 2020 to FY 2021 Increase/Decrease Statement:*** FY 2020 congressional add funding to support Tungsten manufacturing affordability initiative for armaments.	-	4.819	-
Title: FY 2020 Congressional Add - Manufacturing Technology Program ***Description:*** Program increase - Manufacturing technology program ***FY 2020 Plans:*** FY 2020 Congressional Add ***FY 2020 to FY 2021 Increase/Decrease Statement:*** FY 2020 congressional add funding to support the manufacturing technology program.	-	4.819	-
Title: FY 2020 Congressional Add - Transparent Armor ***Description:*** Program increase - Transparent armor ***FY 2020 Plans:*** FY 2020 Congressional Add ***FY 2020 to FY 2021 Increase/Decrease Statement:*** FY 2020 congressional add funding to support transparent armor.	-	3.819	-
Title: FY 2020 SBIR/STTR Transfer ***Description:*** Funding transferred in accordance with Title 15 USC ?638 ***FY 2020 Plans:***	-	2.718	-

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
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			
Accomplishments/Planned Programs Subtotals	51.966	108.348	61.012

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Not applicable for this item.

D. Acquisition Strategy

Not applicable for this item.

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 0708045A / *End Item Industrial Preparedness Activities*	Project (Number/Name) E25 / *Mfg Science & Tech*	

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
FY 2018 NDAA SEC 825 MDAP Cost Overrun	Allot	N/A : N/A	-	0.037		-		-		-		-	0.000	0.037	-
FY 2020 SBIR/STTR Transfer	TBD	Various : Various	-	-		2.718		-		-		-	0.000	2.718	-
		Subtotal	-	0.037		2.718		-		-		-	0.000	2.755	N/A

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
TBD	Various	TBD : TBD	350.422	50.080		105.630		58.815		-		58.815	0.000	564.947	-
FY 2019 SBIR / STTR Transfer	TBD	TBD : TBD	-	1.849		-		2.197		-		2.197	0.000	4.046	-
		Subtotal	350.422	51.929		105.630		61.012		-		61.012	0.000	568.993	N/A

	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	350.422	51.966		108.348		61.012		-		61.012	0.000	571.748	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 0708045A / *End Item Industrial Preparedness Activities*	**Project (Number/Name)** E25 / *Mfg Science & Tech*

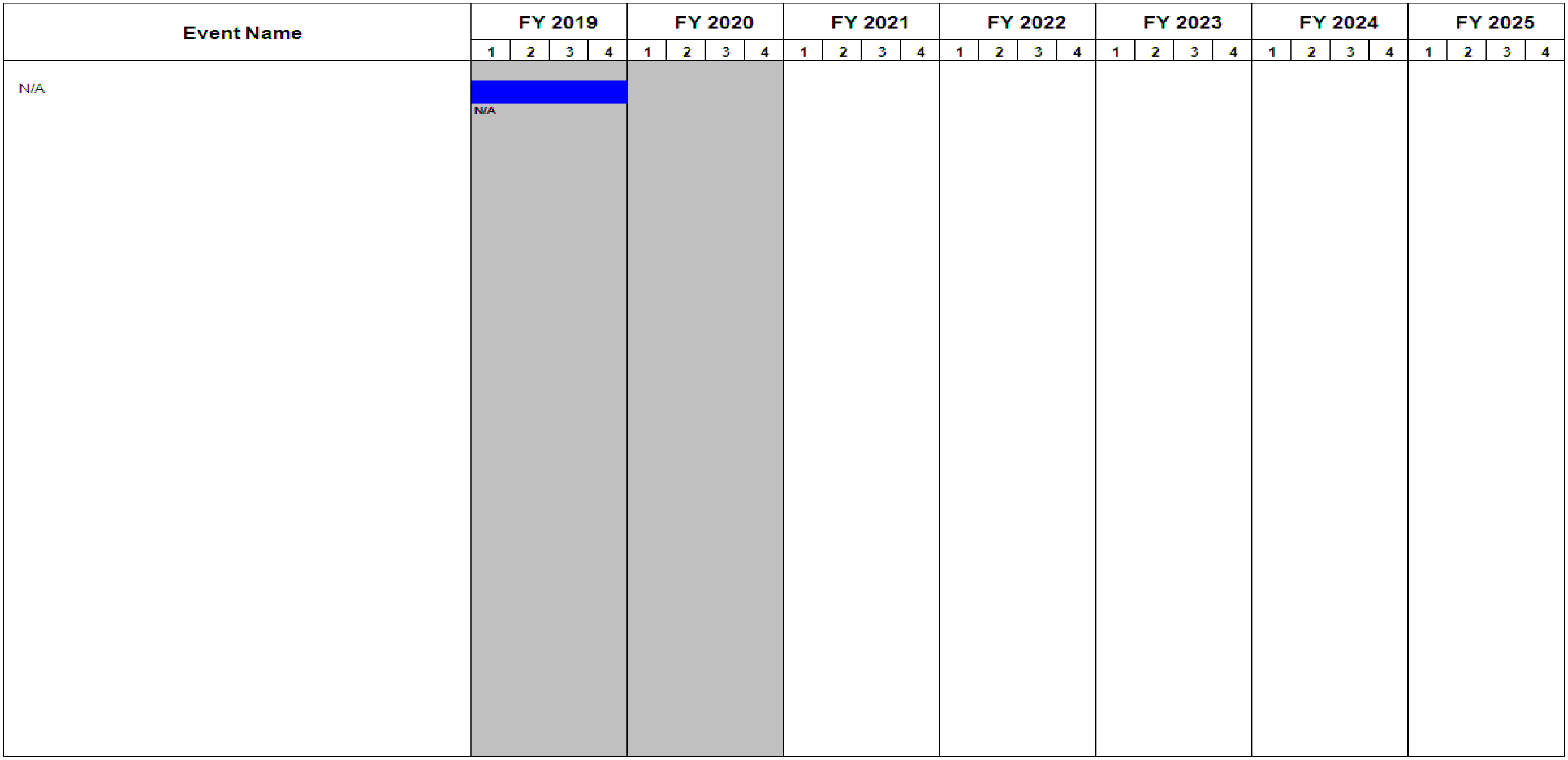

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0708045A / *End Item Industrial Preparedness Activities*	**Project (Number/Name)** E25 / *Mfg Science & Tech*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
N/A	1	2016	4	2019

Note

N/A

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 0708045A / *End Item Industrial Preparedness Activities*	**Project (Number/Name)** EA2 / *MANTECH INITIATIVES (CA)*

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
EA2: *MANTECH INITIATIVES (CA)*	-	54.800	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	54.800
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This effort accelerates manufacturing technology for more affordable electronic warfare, communications and sensors systems components and subsystems to include radio frequency amplifiers, antennas, and focal plane arrays. This effort accelerates and supplements manufacturing technology for more affordable components and subsystems for tactical and combat vehicles and weapon systems. Work focuses benefit from working to develop and scale up the manufacturing process for nano-tungsten carbide powders and high-volume single-crystal tungsten rod manufacturing processes. This effort accelerates and supplements manufacturing technology for more advanced manufacturing and enterprise solutions. Work focuses on accelerating model based manufacturing to specific organic Army facilities and novel ways of applying additive manufacturing and monitoring material powder beds and process controls during additive manufacturing part build for weapon system components.

B. Accomplishments/Planned Programs ($ in Millions)	**FY 2019**	**FY 2020**
Congressional Add: Additive Manufacturing Technology Insertion ***FY 2019 Accomplishments:*** Additive Manufacturing Technology Insertion	10.007	-
Congressional Add: Nanoscale Materials ***FY 2019 Accomplishments:*** Nanoscale Materials	19.935	-
Congressional Add: Lightweight Transparent Armor ***FY 2019 Accomplishments:*** Lightweight Transparent Armor	10.006	-
Congressional Add: Engineering Data Synchronization ***FY 2019 Accomplishments:*** Engineering Data Synchronization	9.807	-
Congressional Add: Power Take-Off Hybridization ***FY 2019 Accomplishments:*** Power Take-Off Hybridization	5.006	-
Congressional Add: FY 2018 NDAA SEC 825 MDAP Cost Overrun ***FY 2019 Accomplishments:*** FY 2018 NDAA SEC 825 MDAP Cost Overrun	0.039	-
Congressional Adds Subtotals	54.800	-

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 0708045A / *End Item Industrial Preparedness Activities*	**Project (Number/Name)** EA2 / *MANTECH INITIATIVES (CA)*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

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 0708045A / *End Item Industrial Preparedness Activities*	Project (Number/Name) EA2 / *MANTECH INITIATIVES (CA)*	

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
FY 2018 NDAA SEC 825 MDAP Cost Overrun	TBD	N/A : N/A	-	0.039		-		-		-		-	0.000	0.039	-
		Subtotal	-	0.039		-		-		-		-	0.000	0.039	N/A

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
TBD	TBD	TBD : TBD	71.800	54.761		-		-		-		-	0.000	126.561	-
		Subtotal	71.800	54.761		-		-		-		-	0.000	126.561	N/A

	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	71.800	54.800		0.000		-		-		-	0.000	126.600	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Army		Date: February 2020
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
N/A																												

	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
N/A																												

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 0708045A / *End Item Industrial Preparedness Activities*	**Project (Number/Name)** EA2 / *MANTECH INITIATIVES (CA)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
N/A	1	2016	4	2016