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

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 4: Advanced Component Development & Prototypes (ACD&P)	R-1 Program Element (Number/Name) PE 0603747A / Soldier Support and Survivability
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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	-	8.067	9.514	5.841	-	5.841	5.954	6.745	7.123	7.126	0.000	50.370
610: Food Adv Development	-	4.425	3.721	3.055	-	3.055	3.172	3.968	4.129	4.129	0.000	26.599
C08: Rapid Equipping Force	-	2.339	5.793	2.786	-	2.786	2.782	2.777	2.994	2.997	0.000	22.468
EL1: Army Field Feeding Programs	-	1.303	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.303

A. Mission Description and Budget Item Justification

This Program Element (PE) supports component development and prototyping for organizational equipment, improved individual clothing and equipment that enhance Soldier battlefield effectiveness, survivability, and sustainment. This PE also supports the component development and prototyping of joint service food and combat feeding equipment designed to reduce logistics burden.

B. Program Change Summary (\$ in Millions)

	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021 Base</u>	<u>FY 2021 OCO</u>	<u>FY 2021 Total</u>
Previous President's Budget	11.735	9.514	9.042	-	9.042
Current President's Budget	8.067	9.514	5.841	-	5.841
Total Adjustments	-3.668	0.000	-3.201	-	-3.201
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-3.668	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-3.201	-	-3.201

Change Summary Explanation

Decrease of \$3.201M in FY 2021 due to reduction in REF anticipated ATEC testing and evaluation costs for project C08 Rapid Equipping Force.

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Army										Date: February 2020		
Appropriation/Budget Activity 2040 / 4					R-1 Program Element (Number/Name) PE 0603747A / <i>Soldier Support and Survivability</i>				Project (Number/Name) 610 / <i>Food Adv Development</i>			
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
610: <i>Food Adv Development</i>	-	4.425	3.721	3.055	-	3.055	3.172	3.968	4.129	4.129	0.000	26.599
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project provides for the advanced component development and prototyping of Joint Service combat ration components/platforms and field feeding equipment designed to improve warfighter performance and reduce the logistics burden of subsistence support. Efforts funded in this Project support all four Services, the Special Operations Command, and the Defense Logistics Agency. The Army serves as the Executive Agent for this Department of Defense (DoD) program, with oversight and coordination provided by the DoD Combat Feeding Research and Engineering Board as required by DoD Directive (DoDD) 3235.02E. Centralized execution of the DoD Combat Feeding Research and Engineering Program (CFREP) with Joint Service review and approval eliminates unnecessary duplication of efforts across the Services and maximizes use of common materiel solutions. Prototypes validated within this effort transition to 0604713A/Project 548 for System Development and Demonstration.

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

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Joint Service Combat Ration Advanced Development	1.751	2.399	1.652	-	1.652
<p>Description: This effort matures and integrates combat ration technologies and prototypes that enable warfighter maneuver, readiness and effectiveness during highly mobile, dispersed operations. Technologies are transitioned from RDTE Budget Activity 3 projects to provide individual and group combat rations and components with improved capabilities including improved warfighter physical and cognitive performance through optimized nutrition and a reduced logistics burden through weight and cube reduction.</p> <p>FY 2020 Plans: Will continue to validate and integrate S&T innovations and COTS/NDI candidate items into existing ration platforms (e.g. Meal, Ready-to-Eat, Unitized Group Ration) to increase operational effectiveness; will conduct T&E of S&T innovations and food component/packaging optimization efforts for integration into prototype CCARs to enable 7-day operations in the absence of resupply and improve readiness through significantly reduced weight, cube, and energy density; will initiate T&E of technologies for integration into prototype Expeditionary Group Rations (EGRs) to decrease the logistics burden and enable group feeding in austere environments; will transition validated prototypes to PE 0604713A/Project 548 for operational testing.</p> <p>FY 2021 Base Plans: Will continue to validate and integrate S&T innovations and COTS/NDI candidate items into existing ration platforms to increase operational effectiveness; will conduct T&E of technologies for integration into prototype Expeditionary Group Rations (EGRs) to decrease the logistics burden and enable group feeding in austere</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Army			Date: February 2020		
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603747A / <i>Soldier Support and Survivability</i>	Project (Number/Name) 610 / <i>Food Adv Development</i>			
B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
environments; will conduct T&E of non-destructive sampling technologies to meet Defense Health Agency Veterinary Services requirements for rapid detection of contaminants in food; and transition validated prototypes to PE 0604713A/Project 548 for operational testing and evaluation (OT&E). FY 2020 to FY 2021 Increase/Decrease Statement: FY 2021 funds realigned to support transition of validated Close Combat Assault Rations (CCAR) prototypes to OT&E					
Title: Joint Service Field Feeding Equipment and Menu Development Description: This effort matures and integrates field feeding equipment technologies and prototypes in support of the Navy, Air Force, and Marine Corps that reduce the logistics burden, improve efficiency, and decrease operation and support costs as directed by the DoD CFREB. This effort also conducts test and evaluation (T&E) on Navy Standard Core Menu components and preparation techniques to enhance efficiency through standardization across the fleet and reduce labor requirements. FY 2020 Plans: Will fabricate prototypes that improve the heating efficiency of rations while reducing overall weight, cube and total lifecycle costs; will initiate T&E of energy conservation technologies for Air Force (USAF) BEAR kitchens; will initiate T&E of upgrades to USMC Expeditionary Field Kitchen (EFK) and new kitchen for shore-based Navy expeditionary units; will initiate T&E of new products and food preparation techniques to enhance menu acceptance and reduce labor requirements; and will transition prototypes to PE 0604713A/Project 548 for operational test and evaluation (OT&E). FY 2021 Base Plans: Will conduct T&E of energy conservation technologies for USAF BEAR kitchens; will conduct T&E of upgrades to or new developments for expeditionary field kitchens for use by deployed units in austere environments; will continue to conduct T&E of new products and food preparation techniques to enhance menu acceptance and reduce labor requirements; and will transition prototypes to PE 0604713A/Project 548 for operational test and evaluation (OT&E). FY 2020 to FY 2021 Increase/Decrease Statement: Change in funding supports USD(R&E) priorities in support of the National Defense Strategy.	2.674	1.153	1.403	-	1.403
Title: FY 2020 SBIR/STTR Transfer Description: Funding transferred in accordance with Title 15 USC ?638	-	0.169	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603747A / <i>Soldier Support and Survivability</i>	Project (Number/Name) 610 / <i>Food Adv Development</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
<i>FY 2020 Plans:</i> Funding transferred in accordance with Title 15 USC ?638					
<i>FY 2020 to FY 2021 Increase/Decrease Statement:</i> Funding transferred in accordance with Title 15 USC ?638					
Accomplishments/Planned Programs Subtotals	4.425	3.721	3.055	-	3.055

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021 Base</u>	<u>FY 2021 OCO</u>	<u>FY 2021 Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• 548: <i>Mil Subsistence Sys</i>	1.092	7.393	2.814	-	2.814	1.815	1.530	1.610	1.610	0.000	17.864

Remarks

D. Acquisition Strategy

Validated prototypes will transition to System Development and Demonstration for operational test and evaluation.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army												Date: February 2020				
Appropriation/Budget Activity				R-1 Program Element (Number/Name)					Project (Number/Name)							
2040 / 4				PE 0603747A / Soldier Support and Survivability					610 / Food Adv Development							
Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Combat Feeding Program Management	Allot	CCDC Soldier Center, Natick, MA : Natick, MA	7.024	0.468	Oct 2018	0.287	Oct 2019	0.322	Oct 2020	-		0.322	Continuing	Continuing	Continuing	
DLA Bill Pay	TBD	Various : Various	2.136	-		-		-		-		-	0.000	2.136	-	
FY 2020 SBIR/STTR Transfer	TBD	Various : Various	-	-		0.169		-		-		-	0.000	0.169	-	
Subtotal			9.160	0.468		0.456		0.322		-		0.322	Continuing	Continuing	N/A	
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Joint Service Rations and Combat Feeding Equipment	Various	Various : Various	35.001	3.555	Oct 2018	3.265	Oct 2019	2.451	Oct 2020	-		2.451	Continuing	Continuing	Continuing	
Subtotal			35.001	3.555		3.265		2.451		-		2.451	Continuing	Continuing	N/A	
Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Joint Service Rations and Combat Feeding Equipment	Allot	CCDC Soldier Center, Natick, MA : Natick, MA	0.887	0.402	Oct 2018	-		0.282	Oct 2020	-		0.282	Continuing	Continuing	Continuing	
Subtotal			0.887	0.402		-		0.282		-		0.282	Continuing	Continuing	N/A	
Project Cost Totals			45.048	4.425		3.721		3.055		-		3.055	Continuing	Continuing	N/A	
Remarks																

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603747A / <i>Soldier Support and Survivability</i>	Project (Number/Name) 610 / <i>Food Adv Development</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
Evaluate individual and group ration enhancements and transition to SDD	[Redacted]																											
Conduct in-house T&E of CCAR and transition to SDD for OT&E	[Redacted]																											
Conduct in-house T&E of optimized MRE and FSR w/ candidate CCAR components	[Redacted]																											
Conduct in-house T&E of EGR and transition to SDD for OT&E	[Redacted]																											
Conduct I-H T&E of non-destructive sampling technologies for food contamination	[Redacted]																											
Provide USN w/CPI, evaluations and menu development to support USN	[Redacted]																											
ID and evaluate advanced galley/scullery equipment for the USN	[Redacted]																											
Conduct T&E of Galley/Scullery equipment and transition to SDD	[Redacted]																											
Identify and procure JIMKE prototypes	[Redacted]																											
Conduct in-house T&E of JIMKE intuitive equipment and transition to SDD	[Redacted]																											
Conduct T&E on rapidly deployable refrigeration prototype	[Redacted]																											
Award contract for build of prototype mobile galley feeding system for USN	[Redacted]																											
Conduct in-house T&E of mobile feeding galley and transition to SDD	[Redacted]																											

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Army			Date: February 2020
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603747A / <i>Soldier Support and Survivability</i>	Project (Number/Name) 610 / <i>Food Adv Development</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
Award contract to fabricate IRefS prototype and conduct in-house																												
Conduct in-house T&E of energy conservation technologies for BEAR Kitchens																												
Conduct in-house T&E of EFK upgrades for USMC																												
Conduct in-house T&E of expeditionary kitchen systems for shore-based Navy units																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603747A / <i>Soldier Support and Survivability</i>	Project (Number/Name) 610 / <i>Food Adv Development</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Evaluate individual and group ration enhancements and transition to SDD for OT&E	1	2017	4	2025
Conduct in-house T&E of CCAR and transition to SDD for OT&E	1	2019	4	2020
Conduct in-house T&E of optimized MRE and FSR w/ candidate CCAR components	1	2020	4	2020
Conduct in-house T&E of EGR and transition to SDD for OT&E	1	2020	4	2022
Conduct I-H T&E of non-destructive sampling technologies for food contamination	1	2021	4	2021
Provide USN w/CPI, evaluations and menu development to support NSCM upgrades	1	2017	4	2025
ID and evaluate advanced galley/scullery equipment for the USN	1	2017	4	2021
Conduct T&E of Galley/Scullery equipment and transition to SDD for OT&E	1	2017	4	2021
Conduct in-house T&E of JSERCS prototype for BEAR Type I kitchen for USAF	1	2017	1	2018
Identify and procure JIMKE prototypes	1	2018	2	2019
Conduct in-house T&E of JIMKE intuitive equipment and transition to SDD for OT&E	2	2019	4	2020
Conduct T&E on rapidly deployable refrigeration prototype	1	2020	4	2020
Award contract for build of prototype mobile galley feeding system for USN	1	2018	1	2019
Conduct in-house T&E of mobile feeding galley and transition to SDD for OT&E	1	2019	1	2020
Award contract to fabricate IRefS prototype and conduct in-house T&E	1	2019	4	2020
Conduct in-house T&E of energy conservation technologies for BEAR Kitchens	1	2020	4	2022
Conduct in-house T&E of EFK upgrades for USMC	1	2020	4	2023
Conduct in-house T&E of expeditionary kitchen systems for shore-based Navy units	1	2020	4	2021

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Army										Date: February 2020		
Appropriation/Budget Activity 2040 / 4					R-1 Program Element (Number/Name) PE 0603747A / <i>Soldier Support and Survivability</i>				Project (Number/Name) C08 / <i>Rapid Equipping Force</i>			
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
C08: <i>Rapid Equipping Force</i>	-	2.339	5.793	2.786	-	2.786	2.782	2.777	2.994	2.997	0.000	22.468
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Equipment mix and configuration may change based on changes in operational environment and circumstances.

A. Mission Description and Budget Item Justification

The REF FY 2021 RDT&E request is \$2.786 million (Base) is for system integration, testing, and evaluation to support project requirements

The REF is the Army's Quick Reaction Capability (QRC) with the ability to acquire, integrate and sustain Commercial-Off-The Shelf (COTS), Government Off-The-Shelf (GOTS), Non-Developmental Item (NDI), and Non-Standard Equipment (NSE) solutions to meet urgent combat requirements for globally employed forces. It inserts selected future force technologies, capabilities, and surrogate materiel solutions into deployed, deploying, select-prepared to deploy, and transformational forces for operational evaluation, assessment, and evolutionary development. The REF assesses the provided capabilities to improve future solutions to inform materiel development for the future Army capability requirements and to potentially transition the capability to an Army acquisition program.

The REF is an enduring organization (Base funded) per Memorandum, Under Secretary of the Army, 30 Jan 2014, subject: Implementation Plan for Stabilization of the Rapid Equipping Force (REF).

The REF bridges the gap between the Army's traditional acquisition process and immediate equipping needs. The REF pursues tangible solutions that can be equipped rapidly with a goal of 180 days. The REF focuses on finding immediate and effective game-changing capabilities to increase Soldier Readiness, effectiveness, protection, and lethality in any operational environment. The REF 10-Liner process provides the ability to react quickly to an ever-changing enemy who changes in days and months, not years in a complex world. The REF coordinates with the Combatant Command (COCOMs) and Army Service Component Command (ASCCs) in theater to fully understand their urgent needs, for which the REF acquisition capability may identify, procure, deliver, and sustain solutions to the deployed units. Although the REF works directly with Operational Commanders at all levels, it focuses on Brigade level and below to equip solutions to identified capability gaps.

The Army Acquisition Executive designated Program Executive Office (PEO) Soldier as the Milestone Decision Authority (MDA) to institutionalize the acquisition authorities in support of the REF and to provide proper acquisition oversight while enhancing visibility of these efforts. The MDA will ensure flexibility and speed focused on the Soldier's needs serviced by the dedicated REF Program Management Office (PMO). This establishes a formal acquisition reporting chain that leverages existing reporting venues to ensure appropriate Assistant Secretary of the Army (Acquisition, Logistics and Technology) (ASA(ALT)) visibility, oversight, and direction.

The REF capabilities cross all Warfighter Functions:

1. Mission Command
2. Movement and Maneuver

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

Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603747A / <i>Soldier Support and Survivability</i>	Project (Number/Name) C08 / <i>Rapid Equipping Force</i>
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- 3. Intelligence
- 4. Fires
- 5. Sustainment
- 6. Protection

The RDT&E funding also provides the REF the flexibility to invest in near-term, and innovative solutions. RDT&E funds are necessary in the majority of all REF projects. Most importantly, REF requires RDT&E funds to conduct safety certification (testing) for non-standard equipment before it is equipped to the Soldier. This critical requirement exists to ensure that REF-provided equipment is safe for Soldiers to use and that any risks are identified and documented. The REF also requires RDT&E funds to integrate several different COTS/GOTS and NDI technologies into one capability that solves the tougher and more complex problems.

The REF requires RDT&E funds to modify, test, and evaluate existing technologies that were developed for one purpose, however may be suitable to solve another problem. REF will also fund deliberate projects in support of technology-solution-scouting to meet anticipated Army needs and to mitigate operational gaps. These efforts measure and identify current technologies, and provide information to better inform Army Training and Doctrine Command (TRADOC) and other communities of interest, with the intent of enlightening future Army requirements. Example efforts that may require RDTE include the following projects: Tactical Satellite Communications (SATCOM) and communications systems; tactical and small Combat Out Post/Forward Operating Base (COP/FOB) Intelligence, Surveillance, and Reconnaissance (ISR) and Force Protection systems; Counter Unmanned Aerial Systems (CUAS); Electronic Warfare (EW) systems; Non-Tactical Vehicles (NTV); Persistent Duration UAS, and Subterranean (SubT) Operations.

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

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
<p>Title: Rapid Equipping Force</p> <p>Description: Funding is provided for the following effort.</p> <p>FY 2020 Plans: The REF partner with Army Service Component Commands (ASCC) forces and Army Special Operations Force (SOF) community to support globally deployed Soldiers and regionally aligned BCTs in all areas of responsibility. The REF anticipates increased uncertainty regarding the future of Operation Inherent Resolve (OIR) and other operations in the CENTCOM Area of Responsibility (AOR) requiring additional flexibility to develop technological solutions supporting the reduced numbers of Soldiers operating globally in order to fill force protection gaps in the face of a lethal terrorism threat. The REF expects to continue our engagement with the ASCCs to address capability gaps generated by geographical and environmental constraints. Conversely, the REF will increase its understanding of evolving threats and operating conditions within the respective ASCC areas of operations. The REF also expects to play a much more deliberate role in providing support to the Global Response Force (GRF) as they prepare for a wider range of response missions. In accordance with REF's participation in the Office of</p>	2.339	5.667	2.786	-	2.786

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

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
<p>Secretary of Defense (OSD) led quick reaction capability effort, the Army determined the REF would provide the Army's warm base capability.</p> <p>REF Warfighter function areas</p> <ol style="list-style-type: none"> 1. Mission Command 2. Movement and Maneuver 3. Intelligence 4. Fires 5. Sustainment 6. Protection <p>The FY20 funds for projects in the amount of \$279K (10% of Budget); breakout is based on the FY 2019 requirements trend.</p> <p>The REF anticipates ATEC testing and evaluation cost of \$2.514 million. The REF requires RDT&E funds to test technologies in order to ensure suitability and safety before equipping the Soldier - any modified COTS/GOTS/NDI item has to be tested.</p> <p>FY 2021 Base Plans: The REF will partner with ASCC forces and Army SOF community to support globally deployed Soldiers and regionally aligned BCTs in all areas of responsibility. The REF anticipates increased uncertainty regarding the future of Operation Inherent Resolve (OIR) and other operations in the CENTCOM Area of Responsibility (AOR) requiring additional flexibility to develop technological solutions supporting the reduced numbers of Soldiers operating globally in order to fill force protection gaps in the face of a lethal terrorism threat. The REF expects to continue our engagement with the ASCCs to address capability gaps generated by geographical and environmental constraints. Conversely, the REF will increase its understanding of evolving threats and operating conditions within the respective ASCC areas of operations. The REF also expects to play a much more deliberate role in providing support to the GRF as they prepare for a wider range of response missions.</p> <ol style="list-style-type: none"> 1. Mission Command 2. Movement and Maneuver 					

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Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603747A / <i>Soldier Support and Survivability</i>	Project (Number/Name) C08 / <i>Rapid Equipping Force</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
3. Intelligence 4. Fires 5. Sustainment 6. Protection The FY 2021 funds for projects in the amount of \$279K (10% of Budget); breakout is based on the current FY 2019 requirements trend. The REF anticipates ATEC testing and evaluation cost of \$2.507 million. The REF requires RDT&E funds to test technologies in order to ensure suitability and safety before equipping the Soldier ? any modified COTS/GOTS/ NDI item has to be tested. FY 2020 to FY 2021 Increase/Decrease Statement: Decrease in funding from FY 2020 to FY 2021 is due to receiving fewer than estimated urgent Warfighter requirements.					
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	-	0.126	-	-	-
Accomplishments/Planned Programs Subtotals	2.339	5.793	2.786	-	2.786

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021 Base</u>	<u>FY 2021 OCO</u>	<u>FY 2021 Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• M80101: <i>Rapid Equipping Soldier Support Equipment</i>	22.429	27.877	8.629	8.500	17.129	10.610	10.365	9.889	9.990	0.000	108.289
Remarks											

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D. Acquisition Strategy

The Rapid Equipping Force (REF) harnesses current and emerging technologies to provide rapid solutions to the urgently required capabilities of U.S. Army Forces employed globally. The REF focus is on rapidly placing capabilities into Soldiers' hands. This mission is accomplished in one of two ways: 1) rapidly adapting COTS/ GOTS/NDI equipment to meet operational needs, and 2) utilizing emerging deployable capabilities via interaction with research and development organizations and academia. All capabilities are safety tested prior to insertion into operational environments. Training and sustainment are provided for every capability until it is transitioned to an approved acquisition program or terminated through an approved Army process. Operational assessments are conducted to provide feedback in support of Army requirements generation and future capability development. REF capabilities routinely serve as a bridge to specific ONS, JUONS, and JEONS gaps to meet urgent operational requirements.

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

Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603747A / <i>Soldier Support and Survivability</i>	Project (Number/Name) C08 / <i>Rapid Equipping Force</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			
FY 2020 SBIR/STTR Transfer	TBD	Various : Various	-	-		0.126		-		-		-	0.000	0.126	-
Subtotal			-	-		0.126		-		-		-	0.000	0.126	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			
Mission Command	C/FFP	Various : Various	0.191	0.016		0.019		0.020		-		0.020	0.000	0.246	-
Movement and Maneuver	C/FFP	Various : Various	0.348	0.039		0.081		0.047		-		0.047	0.000	0.515	-
Intelligence	C/FFP	Various : Various	0.288	0.070		0.139		0.084		-		0.084	0.000	0.581	-
Fires	C/FFP	Various : Various	0.010	0.004		0.004		0.005		-		0.005	0.000	0.023	-
Sustainment	C/FFP	Various : Various	0.237	0.017		0.050		0.021		-		0.021	0.000	0.325	-
Protection	C/FFP	Various : Various	0.494	0.088		0.181		0.102		-		0.102	0.000	0.865	-
Dismounted Improvised Explosive Device (IED) Defeat	C/FFP	Various : Various	2.889	-		-		-		-		-	Continuing	Continuing	Continuing
Dismounted Operations Support	C/FFP	Various : Various	4.796	-		-		-		-		-	Continuing	Continuing	Continuing
Intelligence, Surveillance, and Reconnaissance (ISR) Shortfalls in Environmentally Inhospitable OEs	C/FFP	Various : Various	5.951	-		-		-		-		-	Continuing	Continuing	Continuing
Small Combat Outpost (COP) / Patrol Base (PB) Force Protection and Sustainment	C/FFP	Various : Various	3.738	-		-		-		-		-	Continuing	Continuing	Continuing
Other-REF RIPL Priorities (5-10)	C/FFP	Various : Various	8.778	-		-		-		-		-	Continuing	Continuing	-
Other	C/FFP	Various : Various	2.208	-		-		-		-		-	0.000	2.208	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army												Date: February 2020			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
2040 / 4				PE 0603747A / Soldier Support and Survivability				C08 / Rapid Equipping Force							
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Base: Various Projects-Protect the Force in Counter Insurgency	C/FFP	Various : Various	11.841	-		-		-		-		-	0.000	11.841	-
Small Combat Outpost (COP)/Patrol Base (PB) Sustainment	C/FFP	Various : Various	1.506	-		-		-		-		-	0.000	1.506	-
Base: Various Projects-Enhance Intelligence Surveillance Recon	C/FFP	Various : Various	9.009	-		-		-		-		-	0.000	9.009	-
Small Combat Outpost (COP)/Patrol Base (PB) Force Protection	C/FFP	Various : Various	2.093	-		-		-		-		-	0.000	2.093	-
Dismounted Blue Force Tracking and Mission Command	C/FFP	Various : Various	0.528	-		-		-		-		-	0.000	0.528	-
Base: Various Projects-Logistics/Medical in Counterinsurgency Ops	C/FFP	Various : Various	1.639	-		-		-		-		-	0.000	1.639	-
Base: Various Projects-Timeliness of Analysis and Information Dissemination	C/FFP	Various : Various	6.961	-		-		-		-		-	0.000	6.961	-
Congressional Add-Squad Mission Support System (SMSS)	C/FFP	Various : Various	1.600	-		-		-		-		-	0.000	1.600	-
SSTR/Economic Assumptions/FFRDC and SBIR	C/FFP	Various : Various	1.090	-		-		-		-		-	0.000	1.090	-
OCO: Rapid Equipping Force	C/FFP	Various : Various	19.190	-		-		-		-		-	0.000	19.190	-
Subtotal			85.385	0.234		0.474		0.279		-		0.279	Continuing	Continuing	N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Army			Date: February 2020
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603747A / <i>Soldier Support and Survivability</i>	Project (Number/Name) C08 / <i>Rapid Equipping Force</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
Rapid Equipping Force																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603747A / <i>Soldier Support and Survivability</i>	Project (Number/Name) C08 / <i>Rapid Equipping Force</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Rapid Equipping Force	2	2021	4	2024

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Army										Date: February 2020		
Appropriation/Budget Activity 2040 / 4					R-1 Program Element (Number/Name) PE 0603747A / <i>Soldier Support and Survivability</i>				Project (Number/Name) EL1 / <i>Army Field Feeding Programs</i>			
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
EL1: <i>Army Field Feeding Programs</i>	-	1.303	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.303
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Project EL1 efforts complete in FY 2019

A. Mission Description and Budget Item Justification

This Project provides for the advanced component development and prototyping of Army combat feeding equipment designed to reduce the logistics burden and Operation and Support (O&S) costs of subsistence support to service personnel. Project supports development of rapidly deployable field food service equipment in coordination with ration development efforts. Project conducts demonstration and validation of improved subsistence support items used to enhance soldier effectiveness and quality of life. This project develops critical enablers that support the Joint Future Force Capabilities and the Joint Expeditionary Mindset by maintaining readiness through fielding and integrating new equipment. This equipment enhances the field Soldier's well-being and provides the Soldier with usable equipment, in addition to reducing sustainment requirements, related Combat Support/Combat Service Support (CS/CSS) demands on lift, combat zone footprint, and costs for logistical support.

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

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Containerized Food Sanitation Center (CFSC)	1.303	-	-	-	-
Description: Develop and Test a Containerized Food Sanitation Center (CFSC) that meets the requirements of the Force Provider Expeditionary (FPE) and uses fuel fired water heating to improve energy efficiency..					
Accomplishments/Planned Programs Subtotals	1.303	-	-	-	-

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

Line Item	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
• EL2: <i>Army Field Feeding Equipment</i>	3.301	-	0.000	-	0.000	-	-	-	-	0.000	3.301
• M65806: <i>Assault Kitchen (AK)</i>	4.587	1.673	0.000	-	0.000	-	-	-	-	0.000	6.260
• M65801: <i>REFRIGERATED CONTAINER SYSTEMS</i>	9.140	14.300	0.000	2.279	2.279	-	-	-	-	0.000	25.719
• R62830: <i>Battlefield Kitchen (BK)</i>	2.024	-	0.000	-	0.000	-	-	-	-	0.000	2.024

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603747A / <i>Soldier Support and Survivability</i>	Project (Number/Name) EL1 / <i>Army Field Feeding Programs</i>

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

<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u> <u>Base</u>	<u>FY 2021</u> <u>OCO</u>	<u>FY 2021</u> <u>Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
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Remarks

D. Acquisition Strategy

Project development will transition to Engineering and Manufacturing Development (EMD) and into production after thorough testing.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army												Date: February 2020				
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)								
2040 / 4				PE 0603747A / Soldier Support and Survivability				EL1 / Army Field Feeding Programs								
Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Project Management Support	Various	PMFSS : Natick, MA	0.477	0.489	Nov 2018	-		-		-		-	0.000	0.966	-	
Subtotal			0.477	0.489		-		-		-		-	0.000	0.966	N/A	
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Battlefield Kitchen	Various	PMFSS : Natick, MA	2.632	-		-		-		-		-	0.000	2.632	-	
ECD for MTRCS	Various	Various : Various	0.125	-		-		-		-		-	0.000	0.125	-	
DESERT	Various	PMFSS : Natick, MA	0.177	-		-		-		-		-	0.000	0.177	-	
FSC III	Various	Various : Various	-	0.464	Nov 2018	-		-		-		-	0.000	0.464	-	
Subtotal			2.934	0.464		-		-		-		-	0.000	3.398	N/A	
Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
FSC III	TBD	PMFSS Natick, MA : PMFSS Natick, MA	-	0.350	May 2019	-		-		-		-	0.000	0.350	-	
Subtotal			-	0.350		-		-		-		-	0.000	0.350	N/A	
Project Cost Totals			3.411	1.303		0.000		-		-		-	0.000	4.714	N/A	
Remarks																

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603747A / <i>Soldier Support and Survivability</i>	Project (Number/Name) EL1 / <i>Army Field Feeding Programs</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
Award contract for CFSC sinks and burners	▲ 1																											
Fabricate CFSC test prototype and conduct testing																												
Transition CFSC to production				▲ 2																								

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603747A / <i>Soldier Support and Survivability</i>	Project (Number/Name) EL1 / <i>Army Field Feeding Programs</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Award contract for CFSC sinks and burners	1	2019	1	2019
Fabricate CFSC test prototype and conduct testing	1	2019	4	2019
Transition CFSC to production	4	2019	4	2019