Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Army

Date: March 2019

Appropriation/Budget Activity

R-1 Program Element (Number/Name)

2040: Research, Development, Test & Evaluation, Army I BA 6: RDT&E

PE 0605601A I Army Test Ranges and Facilities

Management Support

COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
Total Program Element	-	313.589	315.634	334.468	-	334.468	341.811	349.697	349.433	357.528	0.000	2,362.160
F30: Army Test Ranges & Facilities	-	313.589	315.634	334.468	-	334.468	341.811	349.697	349.433	357.528	0.000	2,362.160

#### A. Mission Description and Budget Item Justification

This Program Element (PE) provides the institutional funding required to operate test activities in accordance with Public Law 107-314 (National Defense Authorization Act for Fiscal Year 2003) Section 232 ("Objective for institutional funding of test and evaluation facilities") in support of Department of Defense (DoD) Program Executive Officers, Program and Product Managers, Research, Development, and Engineering Centers and to the Army Futures Command. Resources provided by this PE operate six elements of the DoD Major Range and Test Facility Base (MRTFB): White Sands Test Center (WSTC) - White Sands Missile Range, New Mexico; Aberdeen Test Center (ATC) - Aberdeen Proving Ground, Maryland; Electronic Proving Ground (EPG) - Fort Huachuca, Arizona; Yuma Test Center (YTC) - Yuma Proving Ground, Arizona; Cold Regions Test Center (CRTC) - Fort Greely, Alaska; and Tropic Regions Test Centers (TRTC) at various locations. This PE also funds the Army's test capability at Redstone Test Center (RTC) - Redstone Arsenal, Alabama.

This PE finances the overhead (institutional) test operating costs not billable to DoD test customers per Department of Defense Instruction (DODI) 3200.18 and Department of Defense Financial Management Regulation (DODFMR) 7000.14-R, which include: recurring test infrastructure/capability sustainment requirements; replacement of test equipment; test operating procedures; and test revitalization/upgrade projects to maintain \$5.5 Billion of testing capabilities; and improvements to the safety, environmental protection, and efficiency of test operations. The test capabilities at these ranges have been uniquely established, are in place to support test and evaluation (T&E) requirements of funded weapons programs, and are required to assure technical performance, adherence to safety requirements, reliability, logistics supportability, Title 10 Live Fire Test and Evaluation, transportability, environmental effects, cyber, electromagnetic effects, and quality of material in development and in production.

This PE sustains the T&E capability required to support Army as well as Joint Service or Other Service systems, materiel, and technologies. Types of systems scheduled for testing include, but are not limited to: Aircraft, Air Delivery, Unmanned Aerial Systems, Counter Unmanned Aerial Systems, Unmanned Ground Vehicles, Air and Missile Defense Systems, Engineering Equipment, Direct fire, Indirect fire, Nonlethal weapons, Ammunition, Automotive Systems, Intelligence Surveillance and Reconnaissance, Ground Soldier Systems, Missiles, Rockets, Mission Command Network, Tactical Command, Control, and Communications, and Robotics/Unmanned Autonomous Systems.

Specific systems supported in Fiscal Year (FY) 2019 with continued support in FY 2020 include: Joint Light Tactical Vehicle (JLTV), Stryker (30mm, ICV), Joint Assault Bridge, Armored Multi-Purpose Vehicle (AMPV), Mobile Protective Firepower, Warfighter Information Network Tactical (WIN-T), AN/ TPQ53 Radar, Distributed Common Ground Sensor - Army (DCGS-A), Patriot Advanced Capability-3 (PAC-3), Joint Air-to-Ground Missile, Army Integrated Air and Missile Defense (AIAMD), M109A7 Family of Vehicles, XM25 Counter Defilade Target Engagement (CDTE), Gray Eagle Extended Range Handheld, Manpack and Small Form Fit (HMS) Man Pack Radio, Soldier Protective System, Precision Guidance Kit (PGK), Marine Corp Amphibious Combat Vehicle, Extended Range Cannon Artillery (ERCA), Autonomous Ground Resupply Safety Test (AGR), Improved-Forward Looking Infrared (I-FLIR), Precision Strike Munition (PrSM), Bradley Fighting Vehicle, Next Generation Squad Weapon

Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Army

Appropriation/Budget Activity

2040: Research, Development, Test & Evaluation, Army I BA 6: RDT&E

Management Support

Date: March 2019

R-1 Program Element (Number/Name)

PE 0605601A I Army Test Ranges and Facilities

Automatic Rifle, Robotic Combat Vehicle, Next Generation Combat Vehicle (NGCV), Army Tactical Missile System (ATACMS), Maneuver Short Range Air Defense (MSHORAD).

B. Program Change Summary (\$ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	307.588	305.759	313.316	-	313.316
Current President's Budget	313.589	315.634	334.468	-	334.468
Total Adjustments	6.001	9.875	21.152	-	21.152
<ul> <li>Congressional General Reductions</li> </ul>	-0.082	-0.125			
<ul> <li>Congressional Directed Reductions</li> </ul>	-	-			
<ul> <li>Congressional Rescissions</li> </ul>	-	-			
<ul> <li>Congressional Adds</li> </ul>	10.000	10.000			
<ul> <li>Congressional Directed Transfers</li> </ul>	-	-			
Reprogrammings	-	-			
SBIR/STTR Transfer	-3.917	-			
<ul> <li>Adjustments to Budget Years</li> </ul>	-	-	21.152	-	21.152

Congressional Add Details (\$ in Millions	and Includes General Reductions)
Cultulessiuliai Aud Detalis (3 III Williulis	, and includes General Reductions,

Project: F30: Army Test Ranges & Facilities

Congressional Add: Cybersecurity Vulnerability and Assessment Test Environment (CVATE

(CVATE)	10.000	10.000
Congressional Add Subtotals for Project: F30	10.000	10.000
Congressional Add Totals for all Projects	10.000	10.000

FY 2018

FY 2019

Exhibit R-2A, RDT&E Project Justification: PB 2020 Army									Date: March 2019			
2040 / 6				,				Project (Number/Name) F30 I Army Test Ranges & Facilities			es	
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
F30: Army Test Ranges & Facilities	-	313.589	315.634	334.468	-	334.468	341.811	349.697	349.433	357.528	0.000	2,362.160
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

#### A. Mission Description and Budget Item Justification

This Project provides the institutional funding required to operate test activities in accordance with Public Law 107-314 (National Defense Authorization Act for Fiscal Year 2003) Section 232 ("Objective for institutional funding of test and evaluation facilities") in support of Department of Defense (DoD) Program Executive Officers, Program and Product Managers, Research, Development, and Engineering Centers and to the Army Futures Command. Resources provided by this Project operate six elements of the DoD Major Range and Test Facility Base (MRTFB): White Sands Test Center (WSTC) - White Sands Missile Range, New Mexico; Aberdeen Test Center (ATC) - Aberdeen Proving Ground, Maryland; Electronic Proving Ground (EPG) - Fort Huachuca, Arizona; Yuma Test Center (YTC) - Yuma Proving Ground, Arizona; Cold Regions Test Center (CRTC) - Fort Greely, Alaska; and Tropic Regions Test Centers (TRTC) at various locations. This Project also funds the Army's test capability at Redstone Test Center (RTC) - Redstone Arsenal, Alabama.

This Project finances the overhead (institutional) test operating costs not billable to DoD test customers per Department of Defense Instruction (DODI) 3200.18 and Department of Defense Financial Management Regulation (DODFMR) 7000.14-R, which include: recurring test infrastructure/capability sustainment requirements; replacement of test equipment; test operating procedures; test revitalization/upgrade projects to maintain \$5.5 Billion of testing capabilities; and improvements to the safety, environmental protection, and efficiency of test operations. The test capabilities at these ranges have been uniquely established, are in place to support test and evaluation (T&E) requirements of funded weapons programs, and are required to assure technical performance, adherence to safety requirements, reliability, logistics supportability, Title 10 Live Fire Test and Evaluation, transportability, environmental effects, cyber, electromagnetic effects, and quality of material in development and in production.

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Specific systems supported in Fiscal Year (FY) 2019 with continued support in FY 2020 include: Joint Light Tactical Vehicle (JLTV), Stryker (30mm, ICV), Joint Assault Bridge, Armored Multi-Purpose Vehicle (AMPV), Mobile Protective Firepower, Warfighter Information Network Tactical (WIN-T), AN/ TPQ53 Radar, Distributed Common Ground Sensor - Army (DCGS-A), Patriot Advanced Capability-3 (PAC-3), Joint Air-to-Ground Missile, Army Integrated Air and Missile Defense (AIAMD), M109A7 Family of Vehicles, XM25 Counter Defilade Target Engagement (CDTE), Gray Eagle Extended Range Handheld, Manpack and Small Form Fit (HMS) Man Pack Radio, Soldier Protective System, Precision Guidance Kit (PGK), Marine Corp Amphibious Combat Vehicle, Extended Range Cannon Artillery (ERCA), Autonomous Ground Resupply Safety Test (AGR), Improved-Forward Looking Infrared (I-FLIR), Precision Strike Munition (PrSM), Bradley Fighting Vehicle, Next Generation Squad Weapon

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Army		,	Date: M	arch 2019	
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605601A I Army Test Ranges and Facilities	Project (Number/Name) F30 / Army Test Ranges & Facilities			ties
Automatic Rifle, Robotic Combat Vehicle, Next Generation Combat Vehicle (SHORAD).	NGCV), Army Tactical Missile System (ATAC	MS), Ma	neuver Short	Range Air De	efense (M-
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2018	FY 2019	FY 2020
Title: Mission Support			77.679	58.486	86.27
<b>Description:</b> Funds support: test equipment upgrades and maintenance; test handling and disposal of hazardous materials, transportation, postage, admin support vehicle maintenance; mission unique installation costs; temporary du certifications; printing and reproduction; communications; land leases; and ra costs for MRTFB Activities (ATC, EPG, WSTC, YTC (including CRTC & TRT6 7000.14-R.	nistrative supplies; tools; software; spare parts; ty/training of civilian and contractor personnel; nge road maintenance. Funding supports indir	test			
FY 2019 Plans: Funds will continue to support test equipment upgrades and maintenance; test handling and disposal of hazardous materials, transportation, postage, admin support vehicle maintenance; mission unique installation costs; temporary du certifications; printing and reproduction; communications; land leases; and ra costs for MRTFB Activities (ATC, EPG, WSTC, YTC (including CRTC & TRTC 7000.14-R.	nistrative supplies; tools; software; spare parts; ty/training of civilian and contractor personnel; nge road maintenance. Funding supports indir	test			
FY 2020 Plans: Funds will continue to support test equipment upgrades and maintenance; test handling and disposal of hazardous materials, transportation, postage, admin support vehicle maintenance; mission unique installation costs; temporary du certifications; printing and reproduction; communications; land leases; and ra costs for MRTFB Activities (ATC, EPG, WSTC, YTC (including CRTC & TRTC 7000.14-R.	nistrative supplies; tools; software; spare parts; ty/training of civilian and contractor personnel; nge road maintenance. Funding supports indir	test			
FY 2019 to FY 2020 Increase/Decrease Statement: Increase in funding will support sustainment of the test capabilities.					
Title: T&E Civilian Pay			139.659	144.279	149.297
<b>Description:</b> This funding supports the overhead costs of the civilian labor for The balance is customer funded. The test customer pays all direct costs that or resource for testing of a particular program. Funding is essential to maintain workforce.	are directly attributable to the use of a test fac	ility			

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PE 0605601A: Army Test Ranges and Facilities

Army

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Army		Date: N	1arch 2019		
Appropriation/Budget Activity R-1 Program Element (Number/Name) Pro			Project (Number/Name) F30 / Army Test Ranges & Facilitie		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2018	FY 2019	FY 2020	
FY 2019 Plans: Funds will continue to support the overhead costs of the civilian funded. The test customer will pay all direct costs directly attribut particular program. Funding will be essential to maintain core T&	table to the use of a test facility or resource for testing of a				
FY 2020 Plans: Funds will continue to support the overhead costs of the civilian funded. The test customer will pay all direct costs directly attribute particular program. Funding will be essential to maintain core T&	table to the use of a test facility or resource for testing of a				
FY 2019 to FY 2020 Increase/Decrease Statement: Increase due to inflation for civilian pay; the majority of the workf	force is in the Acquisition Demonstration Program.				
Title: Contractor Support		50.116	60.294	53.9 <sup>-</sup>	
<b>Description:</b> This funding supports contractor labor costs not bil civilian T&E personnel with additional capabilities and/or capacity support, radar maintenance, warehousing support, project manamaintenance to test facilities and data acquisition support.	y. Functions performed include range operations, automotiv	e test			
FY 2019 Plans: Funds will continue to support contractor labor costs not billable core civilian T&E personnel. Functions performed will include rar warehousing support, project management, maintenance of suppand data acquisition support.	nge operations, automotive test support, radar maintenance	,			
FY 2020 Plans: Funds will continue to support contractor labor costs not billable core civilian T&E personnel. Functions performed will include rar warehousing support, project management, maintenance of suppand data acquisition support.	nge operations, automotive test support, radar maintenance	,			
FY 2019 to FY 2020 Increase/Decrease Statement:  Decrease due to the adjustments in contractor workforce.					

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PE 0605601A: Army Test Ranges and Facilities Army Page 5 of 9 R-1 Line #183

Exhibit R-2A, RDT&E Project Justification: PB 2020 Army			Date: M	1arch 2019	
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605601A I Army Test Ranges and Facilities		ct (Number/N Army Test Ra	Name)	ities
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2018	FY 2019	FY 2020
<b>Description:</b> Funds support the revitalization/upgrade of critic to use institutional funding to sustain, upgrade or create capabilities for the highest priori	pilities that support multiple customers. Funding will be focuse				
FY 2019 Plans: Funds will continue to support the revitalization/upgrade of crit required to use institutional funding to sustain or upgrade capa improving test and evaluation capabilities for the highest priori	abilities that support multiple customers. Funding will be focus				
FY 2020 Plans: Funds will continue to support the revitalization/upgrade of crit required to use institutional funding to sustain or upgrade capa improving test and evaluation capabilities for the highest priori	abilities that support multiple customers. Funding will be focus				
Title: Physical Security Guards and Equipment			12.733	12.492	12.72
<b>Description:</b> This funding supports physical security guards in Command's (ATEC's) Fast Burst Nuclear Reactor (FBR) at WI Army Regulation (AR) 190-54 and Chemical Biological (CB) fa and AR 190-17. These surety facilities maintain nuclear, biological effects and effectiveness of defensive or protective equipment concrete barriers, security fencing around test sites, cameras, and maintenance contracts for equipment. This equipment is reast Burst Nuclear Reactor and chemical biological surety site requirements as outlined in AR 190-17, AR 190-59, AR 190-59.	hite Sands Missile Range (WSMR) in accordance with (IAW) acilities located at Dugway Proving Ground (DPG) IAW AR 19 gical, and chemical (NBC) materials and agents in order to test nent and measures. The physical security equipment consists gate controllers, access and intrusion detection systems, alar necessary to secure arms rooms, ammunition storage facilities es. Physical security equipment is critical to maintain current security.	of ms, s, The			
FY 2019 Plans: Funds will support the physical security guards and equipment Biological facilities at DPG.	t for the Fast Burst Nuclear Reactor at WSMR and Chemical				
FY 2020 Plans: Funds will support the physical security guards and equipmen Biological facilities at DPG.	t for the Fast Burst Nuclear Reactor at WSMR and Chemical				
FY 2019 to FY 2020 Increase/Decrease Statement:					

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Army			Date: M	arch 2019	
			Project (Number/Name) F30 / Army Test Ranges & Fac		
B. Accomplishments/Planned Programs (\$ in Millions)		FY	2018	FY 2019	FY 2020
Increase due to inflation for civilian pay and routine program adjustments	S.				
Title: UH-60 Aircraft			5.631	5.740	5.85
<b>Description:</b> This funding supports the Aviation Restructure Initiative end maintenance, aircrew labor, mandatory training, and aircraft flying hours. 7000.14-R, these costs are not billable to the test customers. UH-60 helic platform and aerial photo/video documentation support for developmentation.	In accordance with DODI 3200.18 and DODFMR copters are used to provide essential logistical, sen	sor			
FY 2019 Plans: Funds will support UH-60 helicopter maintenance, aircrew labor, mandat	ory training and aircraft flying hours.				
FY 2020 Plans: Funds will support UH-60 helicopter maintenance, aircrew labor, mandat	ory training and aircraft flying hours.				
FY 2019 to FY 2020 Increase/Decrease Statement: Change is due to program requirement adjustments.					
Title: Network Enterprise Center			11.152	12.936	12.58
<b>Description:</b> This funding supports the Network Enterprise Center (NEC manpower and contracts, support equipment and associated costs speci coordinate, and execute Communication, Network, and Information Tech	fically identified and measurable to plan, manage,				
FY 2019 Plans: Funds will support all labor, support equipment, and training required for	the Network Enterprise Center.				
<b>FY 2020 Plans:</b> Funds will support all labor, support equipment, and training required for YTC.	the Network Enterprise Center operations at WSTC	and			
FY 2019 to FY 2020 Increase/Decrease Statement: Minor change due to routine program adjustments.					
Title: Cybersecurity Service Provider (CSSP)			1.619	1.800	1.81
<b>Description:</b> This requirement supports compliance with Department of Defense Instruction (DoDI), which directed that all component information certified CSSP and that all information systems and computer networks r States (U.S.) Army Cyber Command (ARCYBER) Operations Order (OP	n systems and computer networks be assigned to a must enter into a service agreement with a CSSP. I	Jnited			

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PE 0605601A: Army Test Ranges and Facilities

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Army		Date: N	March 2019	
Appropriation/Budget Activity 2040 / 6  R-1 Prog PE 06056 Facilities	<b>Project (Number/Name)</b> F30 <i>I Army Test Ranges &amp; Facilities</i>			
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2018	FY 2019	FY 2020
Units (DRU) to take immediate measures to ensure Army assets connected to Defense R (DREN) and Secure Defense Research and Engineering Network (SDREN) enclaves are Laboratory as their CSSP to ensure cyber defense oversight and information security con	aligned with the U.S. Army Research			
FY 2019 Plans: Funds will support cyber defense oversight and continuous monitoring of information secu	ırity.			
FY 2020 Plans: Funds will support cyber defense oversight and continuous monitoring of information secu	ırity.			
FY 2019 to FY 2020 Increase/Decrease Statement: Minor change due to inflation adjustments.				
Title: Military Construction Mission Unique Equipment		-	-	7.00
<b>Description:</b> In 2017, the Army programmed ATEC?s top six Military Construction (MILC Congressional interest in the lack of investment and sustainment of Major Range and Tes associated risk to the development of future technology. This unanticipated event has res necessary Mission Unique Equipment (MUE) associated with each project. MUE includes as an integral part of the facility, but are required to perform the mission of the facility.	t Facility Bases (MRTFBs) and the ulted in an emergent requirement for th			
FY 2020 Plans: Funds will support two MUE projects. The Electronic Proving Ground (EPG) Ground Tran will support vehicle and equipment maintenance and provide platforms for the testing, and Signal Intelligence, and Electronic Combat (EC)/Electronic Warfare (EW) equipment. The Information Systems Facility (ISF) will serve as the main hub to inter-connect internal and (WSMR) data and voice networks used by all test programs, range operations, and other	alysis, and storage of C4I systems and White Sands Test Center (WSTC) external White Sands Missile Range			
FY 2019 to FY 2020 Increase/Decrease Statement: Funds are allocated only in FY2020.				
Title: FY 2019 SBIR / STTR Transfer		-	4.607	-
Description: FY 2019 SBIR / STTR Transfer				
FY 2019 Plans: FY 2019 SBIR / STTR Transfer				
FY 2019 to FY 2020 Increase/Decrease Statement:				

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PE 0605601A: Army Test Ranges and Facilities Army Page 8 of 9 R-1 Line #183

Exhibit R-2A, RDT&E Project Justification: PB 2020 Army			Date: March 2019
Appropriation/Budget Activity	R-1 Program Element (Number/Name)	Project (N	umber/Name)
2040 / 6			
	Facilities		
		•	

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2018	FY 2019	FY 2020
FY 2019 SBIR / STTR Transfer			
Accomplishments/Planned Programs Subtotals	303.589	305.634	334.468

	FY 2018	FY 2019
Congressional Add: Cybersecurity Vulnerability and Assessment Test Environment (CVATE)	10.000	10.000
FY 2018 Accomplishments: Cybersecurity Vulnerability and Assessment Test Environment (CVATE)		
FY 2019 Plans: Cybersecurity Vulnerability and Assessment Test Environment (CVATE)		
Congressional Adds Subtotals	10.000	10.000

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

N/A

**Remarks** 

# D. Acquisition Strategy

N/A

### E. Performance Metrics

N/A