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

<b>Appropriation/Budget Activity</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army / BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605830A / <i>Aviation Ground Support Equipment</i>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	-	7.616	1.664	1.467	-	1.467	1.385	1.333	1.161	0.996	0.000	15.622
EE5: <i>Aviation Ground Support Equipment</i>	-	7.616	1.664	1.467	-	1.467	1.385	1.333	1.161	0.996	0.000	15.622

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

Aviation Ground Support Equipment (AGSE) conducts developmental testing and the acquisition of prototypes to enhance the functionality of current and future aircraft maintenance equipment. This will be accomplished by identifying more effective aircraft maintenance equipment, validating new maintenance concepts, improving machine interfaces, updating aircraft maintenance processes, and developing improved diagnostic technologies which will reduce Operation and Support costs. This program provides for the development of rapid battle repair procedures, tools, ground handling, and test equipment to speed the return of aircraft to a fully mission capable status. Included in this program are: Tool Set, Aviation Unit Maintenance (TS, AUM), Self-propelled Crane Aircraft Maintenance and Positioning Increment II (SCAMP II), Expeditionary Variant, Pitot Static Test Set (PSTS), Aviation Ground Power Unit Next Generation (AGPU Nex Gen), Modernized Flexible Engine Diagnostic System (MFEDS), Modernized Maintenance Stands (MMS), Aircraft Cleaning and De-icing System (ACDS), Aviation Intermediate Maintenance Shop Set (AVIM SS), Common Aviation Tool System (CATS), Generic Aircraft Nitrogen Generator (GANG), Aviation Light Utility Mobile Maintenance Cart (ALUMMC), Standard Aircraft Towing System (SATS) and development of support equipment required for maintenance of modernized/future force aircraft.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>
Previous President's Budget	7.703	1.664	1.468	-	1.468
Current President's Budget	7.616	1.664	1.467	-	1.467
Total Adjustments	-0.087	0.000	-0.001	-	-0.001
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.087	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-0.001	-	-0.001

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Army										<b>Date:</b> February 2020		
<b>Appropriation/Budget Activity</b> 2040 / 5					<b>R-1 Program Element (Number/Name)</b> PE 0605830A / Aviation Ground Support Equipment				<b>Project (Number/Name)</b> EE5 / Aviation Ground Support Equipment			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
EE5: Aviation Ground Support Equipment	-	7.616	1.664	1.467	-	1.467	1.385	1.333	1.161	0.996	0.000	15.622
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Aviation Ground Support Equipment (AGSE) conducts developmental testing and the acquisition of prototypes to enhance the functionality of current and future aircraft maintenance equipment. This will be accomplished by identifying more effective aircraft maintenance equipment, validating new maintenance concepts, improving machine interfaces, updating aircraft maintenance processes, and developing improved diagnostic technologies which will reduce Operation and Support costs. This program provides for the development of rapid battle repair procedures, tools, ground handling, and test equipment to speed the return of aircraft to a fully mission capable status. Included in this program are: Tool Set, Aviation Unit Maintenance (TS, AUM), Self-propelled Crane Aircraft Maintenance and Positioning Increment II (SCAMP II), Expeditionary Variant, Pitot Static Test Set (PSTS), Aviation Ground Power Unit Next Generation (AGPU Nex Gen), Modernized Flexible Engine Diagnostic System (MFEDS), Modernized Maintenance Stands (MMS), Aircraft Cleaning and De-icing System (ACDS), Aviation Intermediate Maintenance Shop Set (AVIM SS), Common Aviation Tool System (CATS), Generic Aircraft Nitrogen Generator (GANG), Aviation Light Utility Mobile Maintenance Cart (ALUMMC), Standard Aircraft Towing System (SATS) and development of support equipment required for maintenance of modernized/future force aircraft.

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

	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
<b>Title:</b> SCAMP II, Expeditionary Variant	0.620	-	-
<b>Description:</b> The SCAMP II, Expeditionary Variant, will remove and replace major aircraft components (maintenance lifting) in support of Army Aviation Maintenance. Type 2 supports maintenance on unimproved, austere locations, split operations and downed aircraft recovery.			
<b>Title:</b> Pitot Static Test Set (PSTS)	0.905	0.786	-
<b>Description:</b> PSTS is a portable aircraft air data systems tester which provides the capability of troubleshooting, repairing, and verifying proper operation of flight critical aircraft air data systems.			
<b>FY 2020 Plans:</b> Conducted logistics demonstrations, verified tech manual and developed Technical Data Package (TDP).			
<b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> Decrease is due to completion of the logistics demonstration, technical manuals, and TDP efforts.			
<b>Title:</b> Aviation Ground Power Unit Next Generation (AGPU Next Gen)	0.100	0.803	1.467

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>
<p><b>Description:</b> The AGPU Next Gen provides external hydraulic, pneumatic, and AC/DC electrical power to meet Army helicopter servicing requirements.</p> <p><b>FY 2020 Plans:</b> Begin development of the Test Plan and Acquisition Documentation.</p> <p><b>FY 2021 Plans:</b> Acquire test articles and begin the Initial Operational Test and Evaluation (IOT&amp;E) of the AGPU Next Gen candidates.</p> <p><b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> Increase is due to the acquisition of test articles.</p>				
<p><b>Title:</b> Next Generation Health Monitoring System</p> <p><b>Description:</b> The Next Generation Health Monitoring System is funded in the AGSE line, however, NGHMS funds are being executed by the Lakota Program Office as this is the platform operational testing is being conducted.</p>		5.000	-	-
<p><b>Title:</b> Modernized Flexible Engine Diagnostic System (MFEDS)</p> <p><b>Description:</b> The MFEDS is an advanced technology engine test system designed to test and verify flight readiness of engines removed from aircraft for maintenance.</p>		0.350	-	-
<p><b>Title:</b> Technical Engineering Services</p> <p><b>Description:</b> Technical Engineering Services in support of Airworthiness and Safety certifications for Aviation Ground Support Equipment.</p>		0.641	-	-
<p><b>Title:</b> FY 2020 SBIR/STTR Transfer</p> <p><b>Description:</b> Funding transferred in accordance with Title 15 USC ?638</p> <p><b>FY 2020 Plans:</b> Funding transferred in accordance with Title 15 USC ?638</p> <p><b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> Funding transferred in accordance with Title 15 USC ?638</p>		-	0.075	-
<b>Accomplishments/Planned Programs Subtotals</b>		7.616	1.664	1.467

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Army		<b>Date:</b> February 2020
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605830A / Aviation Ground Support Equipment	<b>Project (Number/Name)</b> EE5 / Aviation Ground Support Equipment

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

<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2021</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To</u>	<u>Total Cost</u>
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	
• AZ3520: AVIATION GROUND SUPPORT EQUIPMENT	34.818	18.624	17.584	-	17.584	14.856	15.164	16.109	13.012	0.000	130.167

**Remarks**

**D. Acquisition Strategy**

This project is an aggregate of aviation ground support equipment related projects. While the detailed acquisition strategy varies from program to program, the general strategy for each individual program is to complete the development effort through Government test (developmental and operational). Program documentation for each milestone decision is prepared, as appropriate, concurrently with the development effort.

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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 / 5				PE 0605830A / Aviation Ground Support Equipment				EE5 / Aviation Ground Support Equipment								
<b>Management Services (\$ in Millions)</b>				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	
Management Support Services	Various	PM AGSE : Redstone Arsenal, AL	1.586	-		-		-		-		-	0.000	1.586	-	
FY 2020 SBIR/STTR Transfer	TBD	Various : Various	-	-		0.075		-		-		-	0.000	0.075	-	
<b>Subtotal</b>			1.586	-		0.075		-		-		-	0.000	1.661	N/A	
<b>Product Development (\$ in Millions)</b>				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	
SCAMP II, Expeditionary Variant	Various	AMCOM, RSA; CCDC, RSA : Redstone Arsenal, AL	1.746	0.620	Aug 2019	-		-		-		-	0.000	2.366	-	
PSTS	Various	RTC; Redstone Arsenal : Redstone Arsenal	-	0.905	Jun 2019	0.786	Apr 2020	-		-		-	0.000	1.691	-	
AGPU Next Gen.	PO	RTC : Redstone Arsenal, AL	4.226	0.100	Aug 2019	0.803	May 2020	1.467	May 2021	-		1.467	Continuing	Continuing	Continuing	
Modernized Flexible Diagnostic System	MIPR	RTC : Redstone Arsenal	0.045	0.350	Sep 2019	-		-		-		-	0.000	0.395	-	
Next Generation Health Monitoring System	TBD	To Be Determined : To Be Determined	-	5.000	Dec 2018	-		-		-		-	0.000	5.000	-	
<b>Subtotal</b>			6.017	6.975		1.589		1.467		-		1.467	Continuing	Continuing	N/A	
<b>Support (\$ in Millions)</b>				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	
Technical Engineering Services	MIPR	AATD : Ft. Eustis, VA	0.977	0.641	Jun 2019	-		-		-		-	0.000	1.618	-	



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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2021 Army</b>		<b>Date:</b> February 2020
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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								
AGPU Next Gen.	[Redacted]																																			
AGPU Next Gen.	[Redacted]																																			
Tool Set, Aviation Unit Maintenance (TS, AUM)	[Redacted]				[Redacted]																															
TS, AUM	[Redacted]																																			
Self-Propelled Crane Aircraft Maintenance and Positioning II, Ex	[Redacted]								[Redacted]																											
SCAMP II, Expeditionary Variant	[Redacted]																																			
Pitot Static Test Set (PSTS)	[Redacted]				[Redacted]																															
PSTS	[Redacted]																																			
Aircraft Cleaning and Deicing System (ACDS)	[Redacted]																																			
ACDS	[Redacted]																																			

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2021 Army		<b>Date:</b> February 2020
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605830A / Aviation Ground Support Equipment	<b>Project (Number/Name)</b> EE5 / Aviation Ground Support Equipment

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
AGPU Next Gen.	4	2018	1	2024
Tool Set, Aviation Unit Maintenance (TS, AUM)	4	2016	4	2019
Self-Propelled Crane Aircraft Maintenance and Positioning II, Expeditionary Vari	3	2015	3	2020
Pitot Static Test Set (PSTS)	3	2019	2	2020
Aircraft Cleaning and Deicing System (ACDS)	1	2024	4	2025

**Note**

AGPU: Aviation Ground Unit Power