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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0202834F / <i>Vehicles and Support Equipment - General</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	2.909	14.483	15.498	0.000	15.498	11.545	11.570	11.807	12.234	Continuing	Continuing
672800: <i>AVIATION SUPPORT EQUIPMENT MODERNIZATION</i>	-	2.909	14.483	15.498	0.000	15.498	11.545	11.570	11.807	12.234	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Aviation Support Equipment Modernization provides funding for the modernization of organizational and intermediate level support equipment for out-of-production and emerging aircraft, munitions and external stowage to maximize commonality of equipment, improve aircraft readiness/availability and to reduce life cycle sustainment costs. These items, common (used on more than one weapon system) and peculiar (unique to one weapon system), directly support aircraft maintenance, servicing, and sortie generation requirements.

To support aircraft generation requirements, support equipment may be studied, reviewed, modified and/or re-developed in order to maintain operational readiness. Examples of equipment under review and/or modernization includes, but not limited to, power generation, heating, ventilation, and air conditioning (HVAC), munition trailers/accessories, munition lifts/accessories, tow vehicles, munition test/maintenance stands, hydraulic equipment, and engine test stands. Any identified capability gaps may result in the design of new system.

This program element also includes program administrative cost for the Support Equipment and Vehicles program office and funds the cost of studies and research to support the aviation support equipment fleet.

This program element may include necessary emergent or unanticipated civilian pay expenses required to manage, execute, and deliver Aviation Support Modernization for emergent or unanticipated weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 06058XXX.) In FY21 00.000M and in FY22 00.000M was expended for civilian pay expenses in this program element.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	5.889	14.483	13.878	0.000	13.878
Current President's Budget	2.909	14.483	15.498	0.000	15.498
Total Adjustments	-2.980	0.000	1.620	0.000	1.620
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-2.980	0.000	1.620	0.000	1.620

Change Summary Explanation

This PEC took a reduction of \$2.909M in FY22 to be reprogrammed in FY24. FY24 forecasts additional funds to align with forecasted maturity of RDT&E projects and the associated Feasibility and Test and Evaluation activities, and the purchase of Low Rate Initial Production (LRIP) units to execute these activities.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
Title: Powered AGE Systems Modernization	1.618	3.664	5.745
Description: Ensures powered aerospace ground equipment (AGE) remains available and suitable to meet the requirements of legacy and 5th generation aircraft and force employment/basing strategies while providing reduced lifecycle sustainment costs, reduce operational footprint in support of agile combat operations, and providing improved user safety by reducing system emissions and noise. Powered AGE includes hydraulic, generators, lighting, heating/air conditioning, compressors/bleed-air, aerial stores lift trucks and other electrically driven systems used in and around the flight line for the generation and maintenance of aircraft.			
FY 2023 Plans: Efforts include the continued study, research, development, and operational feasibility testing of emerging technologies/systems to provide reliable clean power such as, but not limited to, hybrid, fuel cell, power grid, and battery systems. One or more contracts may be awarded to support efforts such as the design and test of a new large aircraft generator system, battery "powerhead" systems to reduce diesel consumption and replace aging/unsupportable fleet, as well a combined aircraft power/flight line lighting system to support agile basing applications for remotely piloted aircraft. Small business innovative research (SBIR) contract may be awarded to mature technology. Budget includes funds for Program Support Costs, A&AS, travel and other equipment required to execute program activities as well as develop Air Force-wide system requirements.			
FY 2024 Plans:			

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
<p>Efforts include the continued study, research, development, and operational feasibility testing of emerging technologies/systems to provide reliable clean power such as, but not limited to, hybrid, fuel cell, power grid, and battery systems. One or more contracts may be awarded to support efforts such as the design and test of a new large aircraft generator system, battery "powerhead" systems to reduce diesel consumption and replace aging/unsupportable fleet, as well a combined aircraft power/flight line lighting system to support agile basing applications for remotely piloted aircraft. Small business innovative research (SBIR) contract may be awarded to mature technology. Budget includes funds for Program Support Costs, A&AS, travel and other equipment required to execute program activities as well as develop Air Force-wide system requirements.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase of funds aligns with increased maturity of RDT&E projects and the associated Feasibility and Test and Evaluation activities forecasted.</p>				
<p>Title: Munitions Materiel Handling Equipment (MMHE) Modernization</p> <p>Description: Ensures aerial lift trucks (jammers) and munitions trailers continue to safely meet lift & carry requirements as well as fill capability gaps resulting from new/emerging weapons and aircraft stowage, and new force employment/ basing strategies. RDT&E supports emerging opportunities, such as but not limited to, development of semi-autonomous loading systems, alternative electrical power/drive systems and exploring & implementing a Family-of-Jammers concept to address low observable aircraft loading challenges, agile operations in contested environment, and heavy-weight lift capabilities resulting from emerging weapons. Equipment may be studied, reviewed, modified and/or re-developed in order to maintain operational readiness</p> <p>FY 2023 Plans: Efforts include the continued study, research, development, and operational feasibility testing of emerging technologies/systems to ensure MMHE equipment continue to meet current and future requirements. One or more contracts may be awarded to develop a Family-of-Jammer(s) to meet AF lift requirements across all weight classes and/or development of a semi-autonomous/ autonomous loading system to improve user safety and generation timelines. Small business innovative research (SBIR) contract may be awarded to mature technology. Budget includes funds for Program Support Costs, A&AS, travel and other equipment required to execute program activities as well as develop Air Force-wide system requirements.</p> <p>FY 2024 Plans: Continuing to support mission generation Tow Systems Modernization requirements, support equipment may be studied, reviewed, modified and/or re-developed in order to maintain operational readiness. Examples of equipment under review include, but not limited to development of a Family-of-Tow Systems, "universal tow bar", aircraft positioners, emerging load limits, replace legacy (1955) tow systems, increase AGILE operations, reduction of deployment footprint and to reduce human and aircraft safety</p>		0.172	7.079	7.824

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
<p>mishaps. Budget includes funds for Program Support Costs, A&AS, travel and other equipment required to execute program activities as well as develop Air Force-wide system requirements.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase of funds aligns with increased maturity of RDT&E projects and the associated Feasibility and Test and Evaluation activities forecasted.</p>				
<p>Title: Tow Systems Modernization</p> <p>Description: New Common Tow Systems Modernization across the aircraft fleet. RDT&E efforts support development, testing, and producibility of Tow Bar and Tow Systems.</p> <p>FY 2023 Plans: Continuing to support mission generation Tow Systems Modernization requirements, support equipment may be studied, reviewed, modified and/or re-developed in order to maintain operational readiness. Examples of equipment under review include, but not limited to development of a Family-of-Tow Systems, "universal tow bar", aircraft positioners, emerging load limits, replace legacy (1955) tow systems, increase AGILE operations, reduction of deployment footprint and to reduce human and aircraft safety mishaps. Budget includes funds for Program Support Costs, A&AS, travel and other equipment required to execute program activities as well as develop Air Force-wide system requirements.</p> <p>FY 2024 Plans: Continuing to support mission generation Tow Systems Modernization requirements, support equipment may be studied, reviewed, modified and/or re-developed in order to maintain operational readiness. Examples of equipment under review include, but not limited to development of a Family-of-Tow Systems, "universal tow bar", aircraft positioners, emerging load limits, replace legacy (1955) tow systems, increase AGILE operations, reduction of deployment footprint and to reduce human and aircraft safety mishaps. Budget includes funds for Program Support Costs, A&AS, travel and other equipment required to execute program activities as well as develop Air Force-wide system requirements.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: FY24 funding amount aligns with RDT&E strategy pivot from modernizing current capabilities to pursuing current/future commercially available solutions.</p>		1.119	3.740	1.929
Accomplishments/Planned Programs Subtotals		2.909	14.483	15.498

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

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF 07 000071: <i>Aircraft Replacement Support Equip</i>	-	161.513	-	-	-	-	-	-	-	Continuing	Continuing

Remarks

The Support Equipment and Vehicles program office is responsible for developing, acquiring and sustaining common aircraft generation support equipment for the United States Air Force (USAF).

E. Acquisition Strategy

The acquisition strategy for the Munitions Materiel Handling Equipment (MMHE) Modernization project is expected to maximize OTA non-traditional contracts for development, test, and user evaluation. This includes, but not limited to PIA, Consortium, SBIR, DLA TLS, TACFI, etc. and may award to multiple vendors.

The acquisition strategy for the Powered Aerospace Ground Equipment (AGE) Modernization project is expected to maximize OTA non-traditional contracts for development, test, and user evaluation. This includes, but not limited to PIA, Consortium, SBIR, DLA TLS, TACFI, etc. and may award to multiple vendors.

The acquisition strategy for Tow Systems Modernization project is expected to maximize OTA non-traditional contracts for development, test, and user evaluation. This includes, but not limited to PIA, Consortium, SBIR, DLA TLS, TACFI, etc. and may award to multiple vendors.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0202834F / Vehicles and Support Equipment - General	Project (Number/Name) 672800 / AVIATION SUPPORT EQUIPMENT MODERNIZATION
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
MMHE Contract	C/TBD	Not specified. : TBD	-	0.000	Mar 2022	6.990	Mar 2023	7.824	Mar 2024	-		7.824	Continuing	Continuing	-
Secondary Power Contract	C/TBD	Not specified. : TBD	-	0.978	Feb 2022	0.472	Feb 2023	3.485	Feb 2024	-		3.485	Continuing	Continuing	-
Tow Systems Contract	C/TBD	Not specified. : TBD	-	1.119	Feb 2022	1.349	Feb 2023	1.929	Feb 2024	-		1.929	Continuing	Continuing	-
Ground Power Contract	C/TBD	Not specified. : TBD	-	0.640		4.665		1.200		-		1.200	Continuing	Continuing	-
Subtotal			-	2.737		13.476		14.438		-		14.438	Continuing	Continuing	N/A

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
Contractor Support	PO	Not specified. : TBD	-	-		0.952	Mar 2023	1.000	Mar 2024	-		1.000	Continuing	Continuing	-
Subtotal			-	-		0.952		1.000		-		1.000	Continuing	Continuing	N/A

Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
Program Office Management/Government Services	TBD	Not specified. : TBD	-	0.172	Feb 2022	0.055	Feb 2023	0.060	Feb 2024	-		0.060	Continuing	Continuing	-
Subtotal			-	0.172		0.055		0.060		-		0.060	Continuing	Continuing	N/A

	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals		-	2.909	14.483	15.498	-		15.498	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Air Force		Date: March 2023
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FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
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

<i>Aviation Support Equipment Mod</i>	
Powered AGE Development	[REDACTED]
MMHE Development	[REDACTED]
Tow Systems Development	[REDACTED]

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0202834F / <i>Vehicles and Support Equipment - General</i>	Project (Number/Name) 672800 / AVIATION SUPPORT EQUIPMENT MODERNIZATION

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Aviation Support Equipment Mod</i>				
Powered AGE Development	3	2022	3	2027
MMHE Development	2	2023	3	2028
Tow Systems Development	2	2022	4	2026