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Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Army										Date: February 2018		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 0607143A I Unmanned Aircraft System Universal Products							
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
Total Program Element	-	0.000	38.463	52.019	-	52.019	6.716	5.585	3.512	1.241	0.000	107.536
EX1: Unmanned Aircraft Systems Universal Products	-	0.000	38.463	52.019	-	52.019	6.716	5.585	3.512	1.241	0.000	107.536

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

The Universal Products consist of the Universal Ground Control Station (UGCS), the Universal Ground Data Terminal (UGDT) and the Universal Mission Simulator (UMS), to support the Gray Eagle (MQ-1C) and Shadow (RQ-7) Programs of Record. The Universal Products will be capable of flight and payload control of multiple types of Unmanned Aircraft Systems (UAS). Protected in a climate-controlled, standard S-280 or S-788 U.S. Army shelter and mounted on either a standard Army FMTV or HMMWV, the UGCS receives and disseminates battlefield video and situational awareness data through state-of-the-art operator consoles. Consoles can be used to provide aircraft command and control, payload control and weapons launch.

The UGDT provides a Line of Sight (LOS) capability for transmit and receipt of UAS command and control, and UAS payload product. The UGDT is the common datalink system for U. S. Army UAS.

The Universal Mission Simulator (UMS) consists of the hardware and software required to fully train UAS operators to full Readiness Level (RL) 1. The UMS will be capable of training and simulating flight and payload control of multiple types of unmanned aircraft systems and features Directorate of Simulation (DOS) accredited Shadow software and Gray Eagle software.

Justification: FY2019 Universal Product Base funding of \$52.019 Million will be used for continuing the development of modifications needed to address UGCS obsolescence, maintain interoperability, increase commonality for the Gray Eagle (MQ-1C) and Shadow (RQ-7) Programs of Record, including System Engineering, Logistics, and Program Management.

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Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
2040: Research, Development, Test & Evaluation, Army I BA 7: Operational Systems Development		PE 0607143A I Unmanned Aircraft System Universal Products			
B. Program Change Summary (\$ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	0.000	38.463	25.794	-	25.794
Current President's Budget	0.000	38.463	52.019	-	52.019
Total Adjustments	0.000	0.000	26.225	-	26.225
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	26.225	-	26.225

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Army										Date: February 2018		
Appropriation/Budget Activity 2040 / 7					R-1 Program Element (Number/Name) PE 0607143A / Unmanned Aircraft System Universal Products				Project (Number/Name) EX1 / Unmanned Aircraft Systems Universal Products			
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
EX1: Unmanned Aircraft Systems Universal Products	-	0.000	38.463	52.019	-	52.019	6.716	5.585	3.512	1.241	0.000	107.536
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

## A. Mission Description and Budget Item Justification

The Universal Products consist of the Universal Ground Control Station (UGCS), the Universal Ground Data Terminal (UGDT) and the Universal Mission Simulator (UMS), to support the Gray Eagle (MQ-1C) and Shadow (RQ-7) Programs of Record. The Universal Products will be capable of flight and payload control of multiple types of Unmanned Aircraft Systems (UAS). Protected in a climate-controlled, standard S-280 or S-788 U.S. Army shelter and mounted on either a standard Army FMTV or HMMWV, the UGCS receives and disseminates battlefield video and situational awareness data through state-of-the-art operator consoles. Consoles can be used to provide aircraft command and control, payload control and weapons launch.

The UGDT provides a Line of Sight (LOS) capability for transmit and receipt of UAS command and control, and UAS payload product. The UGDT is the common datalink system for U. S. Army UAS.

The Universal Mission Simulator (UMS) consists of the hardware and software required to fully train UAS operators to full Readiness Level (RL) 1. The UMS will be capable of training and simulating flight and payload control of multiple types of unmanned aircraft systems and features Directorate of Simulation (DOS) accredited Shadow software and Gray Eagle software.

### Justification:

FY2019 Universal Product Base funding of \$52.019 Million will be used for continuing the development of modifications needed to address UGCS obsolescence, maintain interoperability, increase commonality for the Gray Eagle (MQ-1C) and Shadow (RQ-7) Programs of Record, including System Engineering, Logistics, and Program Management.

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

	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
<b>Title:</b> Universal Products (UGCS and UGDT) Improvements	-	33.009	47.244
<b>Description:</b> Universal Product Improvements are with respect to the Universal Ground Control Station (UGCS) and the Universal Ground Data Terminal (UGDT), which are used to operate the Gray Eagle (MQ-1C) and Shadow (RQ-7) Unmanned Aircraft Systems (UAS).			
<b>FY 2018 Plans:</b>			

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<b>Appropriation/Budget Activity</b> 2040 / 7		<b>R-1 Program Element (Number/Name)</b> PE 0607143A / <i>Unmanned Aircraft System Universal Products</i>		<b>Project (Number/Name)</b> EX1 / <i>Unmanned Aircraft Systems Universal Products</i>	
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>			<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
Funding supports the Development of Universal Products Improvements to include: Hardware, Software and documentation to ensure a supportable UGCS and UGDT that is interoperable and increases commonality. The UGCS and UGDT will be used across Army UAS.					
<b>FY 2019 Plans:</b> Funding continues to support Development of Universal Products Improvements to include: Hardware, Software and documentation to ensure a supportable UGCS and UGDT that is interoperable and increases commonality. The UGCS and UGDT will be used across Army UAS.					
<b>FY 2018 to FY 2019 Increase/Decrease Statement:</b> Funding increased from \$25.794 Million to \$52.019 Million in FY2019 in order to support the Developmental of Universal Products.					
<b>Title:</b> Training Device Improvements			-	5.454	4.775
<b>Description:</b> Training Device Improvements are with respect to the Universal Mission Simulator (UMS), which is used for training and simulating flight and payload control of multiple types of Unmanned Aircraft Systems (UAS).					
<b>FY 2018 Plans:</b> Funding supports development and integration of hardware, software and documentation to support updated training capabilities utilizing the UMS and UGCS.					
<b>FY 2019 Plans:</b> Funding supports increased training capability of Unmanned Aircraft Systems to support Manned Unmanned Training (MUMT), Live/Virtual and Constructive Integrated Architecture (LVC-IA), and other PEO Aviation training devices.					
<b>FY 2018 to FY 2019 Increase/Decrease Statement:</b> Funding decreased due to economic adjustments.					
<b>Accomplishments/Planned Programs Subtotals</b>			-	38.463	52.019
<b>C. Other Program Funding Summary (\$ in Millions)</b>					
N/A					
<b>Remarks</b>					
<b>D. Acquisition Strategy</b>					
The Universal Products began full rate production as a part of the MQ-1C and RQ-7 programs of record (both ACAT 1C) after Milestone III/C decisions were reached for both programs. Continued development of the Universal Products will be accomplished through a series of modifications and retrofits. Individual development/ integration efforts will be based on competitive awards. Expected to award in May 2018 timeframe and will result in a Cost Plus Fixed Fee contracts.					

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Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0607143A / <i>Unmanned Aircraft System Universal Products</i>	Project (Number/Name) EX1 / <i>Unmanned Aircraft Systems Universal Products</i>

**E. Performance Metrics**  
N/A

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2019 Army</b>												<b>Date:</b> February 2018			
<b>Appropriation/Budget Activity</b> 2040 / 7						<b>R-1 Program Element (Number/Name)</b> PE 0607143A / <i>Unmanned Aircraft System Universal Products</i>						<b>Project (Number/Name)</b> EX1 / <i>Unmanned Aircraft Systems Universal Products</i>			
<b>Product Development (\$ in Millions)</b>				<b>FY 2017</b>		<b>FY 2018</b>		<b>FY 2019 Base</b>		<b>FY 2019 OCO</b>		<b>FY 2019 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Universal Products (UGCS and UGDT) Improvements	C/CPFF	TBD : TBD	-	-		33.009		47.244		-		47.244	0.000	80.253	-
Training Device Improvements	C/CPFF	TBD : TBD	-	-		5.454		4.775		-		4.775	0.000	10.229	-
<b>Subtotal</b>			-	-		38.463		52.019		-		52.019	0.000	90.482	N/A
			<b>Prior Years</b>	<b>FY 2017</b>		<b>FY 2018</b>		<b>FY 2019 Base</b>		<b>FY 2019 OCO</b>		<b>FY 2019 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>			-	-		38.463		52.019		-		52.019	0.000	90.482	N/A
<b>Remarks</b>															

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Army			Date: February 2018		
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Event Name	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	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
Universal Products (UGCS and UGDT) Improvements																												
Training Device Improvements																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Army		Date: February 2018
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0607143A / Unmanned Aircraft System Universal Products	Project (Number/Name) EX1 / Unmanned Aircraft Systems Universal Products

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Universal Products (UGCS and UGDT) Improvements	3	2018	4	2022
Training Device Improvements	3	2018	4	2018