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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305219A: <i>MQ-1 Gray Eagle - Army UAV (MIP)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	121.846	74.618	10.901	-	10.901	17.609	25.237	25.569	13.331	Continuing	Continuing
MQ1: <i>MQ-1 GRAY EAGLE - ARMY UAV (MIP)</i>	-	121.846	74.618	10.901	-	10.901	17.609	25.237	25.569	13.331	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

A. Mission Description and Budget Item Justification

Gray Eagle provides the Division Commander a dedicated, assured, multi-mission Unmanned Aircraft System (UAS) for the tactical flight assigned to Combat Aviation Brigade (CAB), Army Special Operations Aviation Command, (ARSOAC), and Aerial Exploitation Battalions (AEB) in support of the Division Fires, Battlefield Surveillance Brigades (BSB) and Brigade Combat Teams (BCT), based upon the Division Commander's priorities. Provides Reconnaissance, Surveillance, and Target Acquisition (RSTA), command and control, communications relay, Signals Intelligence (SIGINT), and battle damage assessment capability. The MQ-1C Gray Eagle UAS will be fielded to (15) units. A Gray Eagle unit consists of either 9 or 12 Aircraft and a Standard Equipment Package (SEP) and Payloads to include: Electro-Optical/Infrared Laser Range Finder/Laser Designator (EO/IR/RF/LD), communication relay, and up to (4) HELLFIRE Missiles. The Combat Aviation Brigades (CAB) consist of Soldiers, (9) Aircraft, (5) Universal Ground Control Stations (UGCS), (6) Universal Ground Data Terminals (UGDT), (1) Mobile Ground Control Station (MGCS), (1) Satellite Communication (SATCOM) Ground Data Terminal (SGDT), (9) Satellite Airborne Data Terminals (SADT), (3) Automatic Take-off and Landing Systems (ATLS), and Ground Support Equipment (GSE). The Aerial Exploitation Battalions (AEB) consist of (9) Aircraft, (5) Universal Ground Control Stations (UGCS), (6) Universal Ground Data Terminals (UGDT), (1) Mobile Ground Control Station (MGCS), (1) Satellite Communication (SATCOM) Ground Data Terminal (SGDT), (9) Satellite Airborne Data Terminals (SADT), (3) Automatic Take-off and Landing Systems (ATLS), and Ground Support Equipment (GSE). The number of soldiers assigned to each of the AEB units will be determined upon issuance of the Force Design Update in the summer of 2013. The Army Special Operations Aviation Command (ARSOAC) units consist of Soldiers, (12) Aircraft, (6) Universal Ground Control Stations (UGCS), (7) Universal Ground Data Terminals (UGDT), (3) Mobile Ground Control Stations (MGCS), (3) Satellite Communication (SATCOM) Ground Data Terminals (SGDT), (12) Satellite Airborne Data Terminals (SADT), (3) Automatic Take-off and Landing Systems (ATLS), and Ground Support Equipment (GSE). Deployed units also receive (4) Ka Satellite Communication (SATCOM) Ground Data Terminals (SGDT) and (12) Ka Satellite Communications (SATCOM) Airborne Data Terminals (SADT) for access to military (Ka band) satellites while OCONUS.

Justification: FY 2014 funding of \$10.901 million will provide funding for development of SW Version 4.3.2 and planning of the PPT4 and FOTE test events. FOTE is currently scheduled for the first quarter of FY 2015.

FY 2014 funds will also provide for Ground Based Sense and Avoid (GBSAA) development, testing, and integration into the Gray Eagle System.

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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305219A: <i>MQ-1 Gray Eagle - Army UAV (MIP)</i>
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B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	121.846	74.618	14.705	-	14.705
Current President's Budget	121.846	74.618	10.901	-	10.901
Total Adjustments	0.000	0.000	-3.804	-	-3.804
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-3.804	-	-3.804

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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
MQ1: <i>MQ-1 GRAY EAGLE - ARMY UAV (MIP)</i>	-	121.846	74.618	10.901	-	10.901	17.609	25.237	25.569	13.331	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

Gray Eagle IOT&E being conducted August 2012. FY2013 plan program elements changes maybe required based on outcome of IOT&E.

A. Mission Description and Budget Item Justification

Gray Eagle provides the Division Commander a dedicated, assured, multi-mission Unmanned Aircraft System (UAS) for the tactical flight assigned to Combat Aviation Brigade (CAB), Army Special Operations Aviation Command, (ARSOAC), and Aerial Exploitation Battalions (AEB) in support of the Division Fires, Battlefield Surveillance Brigades (BSB) and Brigade Combat Teams (BCT), based upon the Division Commander's priorities. Provides Reconnaissance, Surveillance, and Target Acquisition (RSTA), command and control, communications relay, Signals Intelligence (SIGINT), and battle damage assessment capability. The MQ-1C Gray Eagle UAS will be fielded to (15) units. A Gray Eagle unit consists of either 9 or 12 Aircraft and a Standard Equipment Package (SEP) and Payloads to include: Electro-Optical/Infrared Laser Range Finder/Laser Designator (EO/IR/RF/LD), communication relay, and up to (4) HELLFIRE Missiles. The Combat Aviation Brigades (CAB) consist of Soldiers, (9) Aircraft, (5) Universal Ground Control Stations (UGCS), (6) Universal Ground Data Terminals (UGDT), (1) Mobile Ground Control Station (MGCS), (1) Satellite Communication (SATCOM) Ground Data Terminal (SGDT), (9) Satellite Airborne Data Terminals (SADT), (3) Automatic Take-off and Landing Systems (ATLS), and Ground Support Equipment (GSE). The Aerial Exploitation Battalions (AEB) consist of (9) Aircraft, (5) Universal Ground Control Stations (UGCS), (6) Universal Ground Data Terminals (UGDT), (1) Mobile Ground Control Station (MGCS), (1) Satellite Communication (SATCOM) Ground Data Terminal (SGDT), (9) Satellite Airborne Data Terminals (SADT), (3) Automatic Take-off and Landing Systems (ATLS), and Ground Support Equipment (GSE). The number soldiers assigned to each of the AEB units will be determined upon issuance of the Force Design Update in the summer of 2013. The Army Special Operations Aviation Command (ARSOAC) units consist of Soldiers, (12) Aircraft, (6) Universal Ground Control Stations (UGCS), (7) Universal Ground Data Terminals (UGDT), (3) Mobile Ground Control Stations (MGCS), (3) Satellite Communication (SATCOM) Ground Data Terminals (SGDT), (12) Satellite Airborne Data Terminals (SADT), (3) Automatic Take-off and Landing Systems (ATLS), and Ground Support Equipment (GSE). Deployed units also receive (4) Ka Satellite Communication (SATCOM) Ground Data Terminals (SGDT) and (12) Ka Satellite Communications (SATCOM) Airborne Data Terminals (SADT) for access to military (Ka band) satellites while OCONUS.

Justification: FY 2014 funding of \$10.901 million will provide funding for development of SW Version 4.3.2 and planning of the PPT4 and FOTE test events. FOTE is currently scheduled for the first quarter of FY 2015.

FY 2014 funds will also provide for Ground Based Sense and Avoid (GBSAA) development, testing, and integration into the Gray Eagle System.

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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0305219A: <i>MQ-1 Gray Eagle - Army UAV (MIP)</i>		PROJECT MQ1: <i>MQ-1 GRAY EAGLE - ARMY UAV (MIP)</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>Title: Gray Eagle EMD System including Electro-Optical / Infrared, synthetic Aperture Radar, and communications Relay Payloads</p> <p align="right">Articles:</p> <p>Description: Gray Eagle EMD System including Electro-Optical / Infrared, synthetic Aperture Radar, and communications Relay Payloads</p> <p>FY 2012 Accomplishments: Continuing efforts include executing the remaining System Development & Demonstration (SDD) efforts and the Initial Operation Test and Evaluation (IOT&E). Deployed the First Unit Equipped F/227 March 2012, Successful Manned Unmanned Systems Integration Capability (MUSIC), Completed Production Prove-Out Test (PPT-3), Achieved Type II Business Case Analysis (BCA) Approval from the Army Acquisition Executive (AAE). Successful Logistics Demonstration (LOGDEMO-3) for soldier's ability to maintain, fault isolate and repair system</p> <p>FY 2013 Plans: Continuing efforts include executing the remaining System Development & Demonstration (SDD) efforts and the Initial Operation Test and Evaluation (IOT&E). Deployed the First Unit Equipped F/227 March 2012, Successful Manned Unmanned Systems Integration Capability (MUSIC), Completed Production Prove-Out Test (PPT-3), Achieved Type II Business Case Analysis (BCA) Approval from the Army Acquisition Executive (AAE). Successful Logistics Demonstration (LOGDEMO-3) for soldier's ability to maintain, fault isolate and repair system</p>		33.327 0	14.213 0	0.000
<p>Title: Gray Eagle Software / Hardware Development</p> <p align="right">Articles:</p> <p>Description: Gray Eagle Software / Hardware Development</p> <p>FY 2012 Accomplishments: Gray Eagle Software / Hardware Development: Development of Software Version 4.4.0</p> <p>FY 2013 Plans: Gray Eagle Software / Hardware Development: Development of Software Version 4.4.0</p> <p>FY 2014 Plans: Gray Eagle Software / Hardware Development: Development of Software</p>		31.740 0	12.506 0	1.624
<p>Title: Government Test support including IOT&E, LUT, Logistics Demonstration Operational Tempo (OPTEMPO)</p> <p align="right">Articles:</p>		18.165 0	14.200 0	3.462

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>Description: Government Test support including IOT&E, LUT, Logistics Demonstration Operational Tempo (OPTEMPO)</p> <p>FY 2012 Accomplishments: MQ-1C Gray Eagle Initial Operational Test and Evaluation</p> <p>FY 2013 Plans: Government Test support including IOT&E, LUT, Logistics Demonstration Operational Tempo (OPTEMPO); Efforts include Electromagnetic Environmental Effects (E3), Environmental Testing, Transportability/Mobility Testing and Production Prove-Out Test #4</p> <p>FY 2014 Plans: Gray Eagle Software and Hardware Development; Government Pre FOT&E and Post Production Test 4.</p>				
<p>Title: Gray Eagle System Training and Training Equipment Development</p> <p align="right">Articles:</p> <p>Description: Gray Eagle System Training and Training Equipment Development</p> <p>FY 2012 Accomplishments: Training of Crews and Maintenance Personnel to operate and maintain the MQ-1 Gray Eagle System; Converted WY205 Air Vehicle to a Maintenance Asset and Developing a Maintenance Training Suite</p> <p>FY 2013 Plans: Gray Eagle System Training and Training Equipment Development; Execute training development, beyond the threshold capability in FY12 for an equipment capability introduced</p>		35.013 0	23.091 0	0.000
<p>Title: Gray Eagle Support including Engineering and Program Management</p> <p align="right">Articles:</p> <p>Description: Gray Eagle Support including Engineering and Program Management</p> <p>FY 2012 Accomplishments: Implement reliability improvements and corrections for IOT&E as well as integration of office wide interoperability initiatives. Corrected deficiencies for Limited User Test (LUT) and developed/tested capabilities in support of IOT&E including the Air Data Relay and the SAR/GMTI payload</p> <p>FY 2013 Plans:</p>		3.601 0	2.915 0	0.000

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Implement reliability improvements and corrections for IOT&E as well as integration of office wide interoperability initiatives.			
Title: Ground Base Sense and Avoid (GBSAA)	0.000	7.693	5.815
Description: Ground Base Sense and Avoid (GBSAA)		0	
Articles:			
FY 2013 Plans: Ground Base Sense and Avoid (GBSAA); Development of the GBSAA software and perform testing			
FY 2014 Plans: Ground Base Sense and Avoid (GBSAA)			
Accomplishments/Planned Programs Subtotals	121.846	74.618	10.901

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

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• MQ-1 UAV / APA (A00005):	550.798	518.088	518.460		518.460	232.321	1.000	14.000	100.334	Continuing	Continuing
MQ-1 UAV / APA (A00005) -OCO											

Remarks

D. Acquisition Strategy

Extended Range Multi-Purpose (ERMP) Operational Requirement Document (ORD) was approved by the Joint Requirement Oversight Council (JROC) 6 Apr 2005, Milestone B occurred 20 Apr 2005, and the System Development and Demonstration contract was awarded 8 Aug 2005, as a result of a competitive solicitation which included a vendor system capabilities demonstration. Capabilities Production Document was approved 14 Mar 09. To meet the required capability, evolutionary acquisition has been employed to implement the incremental approach outlined in the CPD. The Gray Eagle UAS is being matured during the System Development and Demonstration (SDD) phase, which includes the development and integration of key components such as the Tactical Common Data Link (TCDL), Link-16, and integration of Government Furnished Equipment (GFE), payloads, appropriate Common Aviation Ground Support Equipment and the One System GCS. PM JAMS is developing the P+ model of the HELLFIRE missile and participating in the integration and test activities for the entire Gray Eagle system. PM JAMS is budgeting for the procurement of missiles for the fielded systems. PM Night Vision/Reconnaissance, Surveillance, and Target Acquisition (RSTA) under PEO Intelligence and Electronic Warfare Systems (IEWES) develops, manages, and competes in the POM and is responsible for meeting all ERMP costs associated for payloads, payload integration, and payload sustainment. Field Tests at the Electronic Proving Grounds in Ft Huachuca, AZ, and integration tests at the Central Technical Support Facility in Ft Hood, TX, are examples of the tests planned to reduce risk in the SDD phase.

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<p>FY2014 and beyond funding allows for the development and integration of Pre-Planned Product Improvements, such as interoperability compliance initiatives and a Universal Armament Interface, and Block upgrades. These improvements will be implemented through a CPFF engineering services contract and/or engineering change proposals with the Gray Eagle prime contractor.</p>		
<p><u>E. Performance Metrics</u> Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army **DATE:** April 2013

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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management	MIPR	PM UAS:Redstone Arsenal, AL	5.465	3.601		2.915		-		-		-	Continuing	Continuing	Continuing
Subtotal			5.465	3.601		2.915		0.000		0.000		0.000			

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Development Engineering	C/CPIF	General Atomics / ASI:San Diego, CA	116.521	33.327	Dec 2011	14.213	Dec 2012	-		-		-	Continuing	Continuing	Continuing
Prototype Manufacturing	Various	General Atomics / ASI:San Diego, CA	213.776	-		-		-		-		-	Continuing	Continuing	Continuing
Ground Support Equipment	C/CPIF	Various:Various	9.075	-		-		-		-		-	Continuing	Continuing	Continuing
Ground Base Sense & Avoid (GBSAA)	SS/CPFF	General Atomics / ASI:San Diego, CA	0.000	-		7.693	Dec 2013	5.815	Mar 2014	-		5.815	Continuing	Continuing	Continuing
Software / Hardware Development	SS/CPIF	General Atomics:San Diego, CA	0.000	31.740	Dec 2011	12.506		1.624	Dec 2013	-		1.624	Continuing	Continuing	Continuing
Subtotal			339.372	65.067		34.412		7.439		0.000		7.439			

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Contractor Engineering Support	MIPR	Ft. Huachuca:Ft. Huachuca	14.880	9.522		4.061		-		-		-	Continuing	Continuing	Continuing
Training and Training Equipment	MIPR	Ft. Huachuca:Ft. Huachuca	23.162	20.730		17.000		-		-		-	Continuing	Continuing	Continuing
Government Engineering Support	C/FFP	Various:Various	13.752	4.761		2.030		-		-		-	Continuing	Continuing	0.000
Subtotal			51.794	35.013		23.091		0.000		0.000		0.000			

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
Initial Operational Test and Evaluation (IOT&E)				■																								
Full Rate Production Contract Award								■																				
Initial Operating Capability								■																				
Follow-on Operational Test and Evaluation																■												
Post Production Test (4)																■												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Initial Operational Test and Evaluation (IOT&E)	4	2012	4	2012
Full Rate Production Contract Award	3	2013	3	2013
Initial Operating Capability	1	2013	1	2013
Follow-on Operational Test and Evaluation	3	2015	3	2015
Post Production Test (4)	1	2015	1	2015