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**Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army** **DATE:** February 2012

<b>APPROPRIATION/BUDGET ACTIVITY</b>				<b>R-1 ITEM NOMENCLATURE</b>							
2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)				PE 0305205A: Long Endurance Multi-Intelligence Vehicle (LEMV)							
<b>COST (\$ in Millions)</b>	<b>FY 2011</b>	<b>FY 2012</b>	<b>FY 2013 Base</b>	<b>FY 2013 OCO</b>	<b>FY 2013 Total</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	100.009	43.563	26.196	-	26.196	28.991	27.759	-	-	Continuing	Continuing
LE4: LONG ENDURANCE MULTI-INTELLIGENCE VEHICLE (LEMV)	100.009	43.563	26.196	-	26.196	28.991	27.759	-	-	Continuing	Continuing

**Note**

This program element funds Long Endurance Multi-Intelligence Vehicle (LEMV) efforts performed by the US Army Space and Missile Defense Command/Army Forces Strategic Command (USASMDC/ARSTRAT).

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

This program element (PE) evaluates unmanned aerial vehicle (UAV) prototype systems that provide increased flight and/or mission duration for Intelligence, Surveillance, and Reconnaissance (ISR) and communications capabilities. These systems include the aerial platform integrated with existing and/or developmental payloads. Project LE4 is developing the Long Endurance Multi-intelligence Vehicle (LEMV), which is a hybrid airship prototype integrated with existing and developmental ISR and communications payloads to improve persistent surveillance and assured communications capabilities. Hybrid airship platform endurance is dependent on weather conditions and payload weight, but the LEMV prototype system is expected to increase endurance to 21 days on average assuming 20 knot winds.

The LEMV was funded in PE 0603308A Project 978 in FY10.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2011</b>	<b>FY 2012</b>	<b>FY 2013 Base</b>	<b>FY 2013 OCO</b>	<b>FY 2013 Total</b>
Previous President's Budget	93.000	42.892	25.915	-	25.915
Current President's Budget	100.009	43.563	26.196	-	26.196
Total Adjustments	7.009	0.671	0.281	-	0.281
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	9.999	-			
• SBIR/STTR Transfer	-2.450	-			
• Adjustments to Budget Years	-	-	0.281	-	0.281
• Other Adjustments 1	-0.540	0.671	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army								DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0305205A: Long Endurance Multi-Intelligence Vehicle (LEMV)				PROJECT LE4: LONG ENDURANCE MULTI-INTELLIGENCE VEHICLE (LEMV)			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
LE4: LONG ENDURANCE MULTI-INTELLIGENCE VEHICLE (LEMV)	100.009	43.563	26.196	-	26.196	28.991	27.759	-	-	Continuing	Continuing
Quantity of RDT&E Articles											
A. Mission Description and Budget Item Justification											
The Long Endurance Multi-Intelligence Vehicle (LEMV) is a technology demonstration effort to improve persistent surveillance and assured communications using a platform with significantly improved endurance over existing systems. The LEMV platform is a hybrid airship that achieves vertical lift from helium contained within its hull making it lighter-than-air and from traditional engine propulsion that produces thrust to provide lift. The LEMV prototype requirements are to achieve 21 day endurance in 20 knot continuous winds, carry 2500 pounds of multiple surveillance and communication payloads, operate at a maximum altitude of 20,000 feet Mean Sea Level, and provide 16 kilowatts (kW) of power to the payload. The LEMV system is recoverable and reusable. The LEMV system prototype and associated technologies will be evaluated during a Joint Military Utility Assessment (JMUA) in an operational environment upon completion of developmental testing.											
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2011	FY 2012	FY 2013	
<b>Title:</b> LEMV System Design, Development, and Sub-System Integration  <b>Articles:</b>  <b>Description:</b> This effort develops a hybrid airship prototype integrated with payloads, ground control stations, and support equipment.  <b>FY 2011 Accomplishments:</b> Completed system design through critical design review; completed fabrication of hybrid airship, to include hull, air vehicle systems, propulsion systems, mission payload modules, and rigid structures; obtained and integrated sensor and communications payloads; completed development of data processing software; and completed fabrication of ground control stations.  <b>FY 2012 Plans:</b> Complete fabrication of support equipment; and integrate all major subsystems.								100.009	20.963	-	
								0	0		
<b>Title:</b> Developmental Testing and Certification  <b>Articles:</b>  <b>Description:</b> This effort conducts developmental testing, information assurance accreditation, and airworthiness certifications.  <b>FY 2012 Plans:</b>								-	9.900	-	
									0		

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2013 Army		<b>DATE:</b> February 2012	
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0305205A: <i>Long Endurance Multi-Intelligence Vehicle (LEMV)</i>	<b>PROJECT</b> LE4: <i>LONG ENDURANCE MULTI-INTELLIGENCE VEHICLE (LEMV)</i>	
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2011</b>	<b>FY 2012</b>
Complete interoperability certification; continue to monitor information assurance accreditation baseline; and complete developmental testing, to include flight tests and endurance demonstration.			
<b>Title:</b> Joint Military Utility Assessment (JMUA)  <b>Description:</b> This effort prepares and conducts the JMUA, to include training and transportation to the JMUA location.  <b>FY 2012 Plans:</b> Will transport LEMV system to JMUA location; will complete training for JMUA personnel; will begin phased JMUA activities; and will provide initial JMUA report and recommended Tactics, Techniques, and Procedures. Provide technical support of Hardware/Software (HW/SW) and Engineering Change Proposals (ECPs).  <b>FY 2013 Plans:</b> Will continue to conduct phased JMUA activities to develop Tactics, Techniques and Procedures while refining Concept of Operations (CONOPS). Provide technical support of HW/SW and ECPs.		<b>Articles:</b>  -	12.700 0
			26.196
<b>Accomplishments/Planned Programs Subtotals</b>		100.009	43.563
<b>C. Other Program Funding Summary (\$ in Millions)</b>			
N/A			
<b>D. Acquisition Strategy</b>			
Army received approval to acquire the LEMV under an Other Transaction Authority (OTA). Extensive market research determined that this hybrid airship has never been manufactured as a full-scale functioning system and critical hybrid airship technology at the system and subsystem level is mainly available from non-traditional Department of Defense contractors. An OTA agreement was preferred in order to gain access to critical technology within the Non-Traditional industrial community in this area and to promote competition. The OTA Agreement was competitively awarded using a competitive Request for Proposal process. A Joint Military Utility Assessment (JMUA) will be conducted in theatre following the system development and transport. A Material Development Decision (MDD) is expected 90-180 days after completion of the JMUA Phase 1 (the first 2 months of the overall JMUA time period).			
<b>E. Performance Metrics</b>			
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.			

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army** **DATE:** February 2012

<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)	<b>R-1 ITEM NOMENCLATURE</b> PE 0305205A: Long Endurance Multi-Intelligence Vehicle (LEMV)	<b>PROJECT</b> LE4: LONG ENDURANCE MULTI-INTELLIGENCE VEHICLE (LEMV)
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	Various:various	-	3.892		1.200		-		1.200	Continuing	Continuing	0.000
<b>Subtotal</b>			-	3.892		1.200		-		1.200			0.000

**Remarks**  
Effective FY2011, funding for the Long Endurance Multi-Intelligence Vehicle (LEMV) was moved from Program Element (PE) 0603308A to 0305205A.

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Design, development, and sub-system integration	C/CPFF	Various:Various	57.009	15.071		-		-		-	Continuing	Continuing	Continuing
Sub-system risk reduction, trade studies & competitive agreement award	C/CPFF	Various:Various	5.000	-		-		-		-	Continuing	Continuing	Continuing
Developmental/Operational testing	C/CPFF	Various:Various	30.000	7.500		-		-		-	Continuing	Continuing	Continuing
Military Utility Assessment	C/CPFF	Various:Various	-	12.700		23.996		-		23.996	Continuing	Continuing	0.000
<b>Subtotal</b>			92.009	35.271		23.996		-		23.996			

**Remarks**  
Awarded Other Transactional Agreement (OTA) to Northrop Grumman on 14 June 2010. Executed option to build first airship.

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government and SETA Support	Various	Various:various	8.000	2.000		1.000		-		1.000	Continuing	Continuing	Continuing
<b>Subtotal</b>			8.000	2.000		1.000		-		1.000			

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2013 Army											<b>DATE:</b> February 2012		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>				<b>R-1 ITEM NOMENCLATURE</b> PE 0305205A: <i>Long Endurance Multi-Intelligence Vehicle (LEMV)</i>				<b>PROJECT</b> LE4: <i>LONG ENDURANCE MULTI-INTELLIGENCE VEHICLE (LEMV)</i>					
<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013 Base</b>		<b>FY 2013 OCO</b>		<b>FY 2013 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Total Prior Years Cost</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>
Test Support	Various	Various:Various	-	2.400		-		-		-	Continuing	Continuing	0.000
<b>Subtotal</b>			-	2.400		-		-		-			0.000
			<b>Total Prior Years Cost</b>	<b>FY 2012</b>		<b>FY 2013 Base</b>		<b>FY 2013 OCO</b>		<b>FY 2013 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>			100.009	43.563		26.196		-		26.196			
<b>Remarks</b>													

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army																DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY								R-1 ITEM NOMENCLATURE								PROJECT			
2040: Research, Development, Test & Evaluation, Army								PE 0305205A: Long Endurance Multi-Intelligence Vehicle (LEMV)								LE4: LONG ENDURANCE MULTI-INTELLIGENCE VEHICLE (LEMV)			
BA 4: Advanced Component Development & Prototypes (ACD&P)																			

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2013 Army			<b>DATE:</b> February 2012
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0305205A: <i>Long Endurance Multi-Intelligence Vehicle (LEMV)</i>	<b>PROJECT</b> LE4: <i>LONG ENDURANCE MULTI-INTELLIGENCE VEHICLE (LEMV)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Developmental Testing and Certification	2	2011	3	2012
Joint Military Utility Assessment	4	2012	4	2015