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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				PE 0305205A: <i>Long Endurance Multi-Intelligence Vehicle (LEMV)</i>							
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	-	93.000	42.892	-	42.892	25.915	25.902	25.886	-	Continuing	Continuing
LE4: <i>LONG ENDURANCE MULTI-INTELLIGENCE VEHICLE (LEMV)</i>	-	93.000	42.892	-	42.892	25.915	25.902	25.886	-	Continuing	Continuing

Note

Change Summary Explanation: FY2011: Funding for the Long Endurance Multi-Intelligence Vehicle (LEMV) was moved from program element (PE) 0603308A to 0305205A.

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.

<u>B. Program Change Summary (\$ in Millions)</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012 Base</u>	<u>FY 2012 OCO</u>	<u>FY 2012 Total</u>
Previous President's Budget	-	93.000	43.000	-	43.000
Current President's Budget	-	93.000	42.892	-	42.892
Total Adjustments	-	-	-0.108	-	-0.108
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-0.108	-	-0.108

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Army								DATE: February 2011			
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 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
LE4: LONG ENDURANCE MULTI-INTELLIGENCE VEHICLE (LEMV)	-	93.000	42.892	-	42.892	25.915	25.902	25.886	-	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 is expected 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 2010	FY 2011	FY 2012	
Title: LEMV System Development Articles: Description: This effort develops a hybrid airship prototype integrated with payloads, ground control stations, and support equipment. FY 2011 Plans: Complete system design through critical design review; complete fabrication of hybrid airship, to include hull, air vehicle systems, propulsion systems, mission payload modules, and rigid structures; obtain and integrate sensor and communications payloads; continue and complete development of data processing software; complete fabrication of ground control stations; complete fabrication of support equipment; and integrate all major subsystems.								-	93.000 0	-	
Title: Test and Certifications Description: This effort conducts developmental testing, information assurance accreditation, and airworthiness certifications. FY 2012 Plans: Will complete interoperability certification; will continue to monitor information assurance accreditation baseline; and will complete developmental testing, to include flight tests and endurance demonstration.								-	-	4.500	
Title: Joint Military Utility Assessment (JMUA) Description: This effort prepares and conducts the JMUA, to include training and transportation to the JMUA location.								-	-	38.392	

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Army							DATE: February 2011				
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>			R-1 ITEM NOMENCLATURE PE 0305205A: <i>Long Endurance Multi-Intelligence Vehicle (LEMV)</i>			PROJECT LE4: <i>LONG ENDURANCE MULTI-INTELLIGENCE VEHICLE (LEMV)</i>					
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)							FY 2010	FY 2011	FY 2012		
FY 2012 Plans: 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.											
Accomplishments/Planned Programs Subtotals							-	93.000	42.892		
C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• 0603308: <i>LEMV</i>	79.583									0.000	79.583
D. Acquisition Strategy											
<p>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 JUMA Phase 1.</p>											
E. Performance Metrics											
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 2012 Army **DATE:** February 2011

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)
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Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 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		-		3.892	0.000	3.892	0.000
Subtotal			-	-		3.892		-		3.892	0.000	3.892	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 2011		FY 2012 Base		FY 2012 OCO		FY 2012 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	Various	Various:Various	-	50.000		-		-		-	Continuing	Continuing	Continuing
Sub-system risk reduction, trade studies & competitive agreement award	Various	Various:Various	-	5.000		-		-		-	Continuing	Continuing	Continuing
Developmental/Operational testing	Various	Various:Various	-	30.000		7.500		-		7.500	Continuing	Continuing	Continuing
Military Utility Assessment	Various	Various:Various	-	-		25.000		-		25.000	0.000	25.000	0.000
Subtotal			-	85.000		32.500		-		32.500			

Remarks
Awarded OTA to Northrop Grumman on 14 June 2010. Executed option to build first airship.

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 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		-		2.000	Continuing	Continuing	Continuing
Subtotal			-	8.000		2.000		-		2.000			

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Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 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
Test Support	Various	Various:Various	-	-		4.500		-		4.500	0.000	4.500	0.000
Subtotal			-	-		4.500		-		4.500	0.000	4.500	0.000
			Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	93.000		42.892		-		42.892			
Remarks													

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army																DATE: February 2011			
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)			

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0305205A: <i>Long Endurance Multi-Intelligence Vehicle (LEMV)</i>	PROJECT LE4: <i>LONG ENDURANCE MULTI-INTELLIGENCE VEHICLE (LEMV)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
System Design, Development, and Sub-System Integration	4	2010	2	2011
Developmental Testing and Certification	1	2011	4	2011
Joint Military Utility Assessment	1	2012	3	2015

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