

# UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Air Force										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development					R-1 ITEM NOMENCLATURE PE 0401134F: Large Aircraft IR Countermeasures (LAIRCM)							
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	8.838	7.758	4.116	-	4.116	6.850	6.621	6.112	6.222	Continuing	Continuing
674942: Large Aircraft Infrared Counter Measures (LAIRCM)	-	8.838	7.758	4.116	-	4.116	6.850	6.621	6.112	6.222	Continuing	Continuing
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		

# 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

The Large Aircraft Infrared Countermeasures (LAIRCM) system is an evolutionary acquisition program that provides significantly improved defensive systems capability for DoD aircraft to counter the infrared (IR) man-portable air-defense systems (MANPADS) missile threat. The current LAIRCM system configuration [AN/AAQ-24V] consists of an ultra-violet missile warning sensor (MWS), a laser transmitter assembly, control interface unit (CIU) and processors to detect, track, jam and counter incoming IR missiles. The number of sensors and turrets per aircraft is determined by the size and signature of the aircraft. The system is fully automatic following system power-up. LAIRCM requirements are documented in the multi-command Operational Requirements Document (ORD) LAIRCM ORD 314-92, validated on 03 Aug 98. The system was first fielded on the C-17 aircraft.

The baseline program development is complete and consists of the small laser transmitter assembly (SLTA), ultra-violet MWS, processor, control interface unit (CIU) and a repeater (on some aircraft) to meet the need for advanced IR countermeasures. The Guardian Laser Transmitter Assembly (GLTA) is an upgrade to the baseline transmitter equipment to improve reliability, enhance performance, address obsolescence issues, reduce mass and improve overall functionality. First production GLTA delivery occurred in June 08.

Development of the Next Generation Missile Warning System (NexGen MWS) is complete and includes new hardware that improves capability. Baseline equipment (ultra-violet MWS) will be retrofitted with the NexGen MWS as it becomes available. Developmental test/operational test (DT/OT) was conducted in FY10 with initial operational test and evaluation (IOT&E) in FY11.

Per DoD direction LAIRCM program will accomplish group A integration and testing and provide integration support to incorporate LAIRCM on new platforms, upon request of AMC, AFSOC, multiple potential tanker aircraft variants, and other federal agencies. The last Integratgion effort will be completed in FY14.

LAIRCM upgrades include, but are not limited to hardware and software upgrades and testing of the LAIRCM system to maintain defensive capability against new and emerging threats. Capabilities include engagement reporting (ER), Closed Loop Infrared Countermeasures (CLIRCM) and other emerging capabilities to upgrade/ update system threat defeating ability.

Current and future efforts include Threat Analysis; Modeling, Simulation and Emulation Test; Jam Code Development; and Studies and Analysis.

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<p>Threat Analysis encompasses the activities to support threat exploitation analysis of a variety of threats (both known and emerging) against the current LAIRCM jam code with the intent of determining if jam code updates are required. Typical threat analysis activities include: threat seeker characterization; model development for advanced threat IR seekers; development and testing of new infrared countermeasures concepts, techniques, and hardware; new technology assessment for potential incorporation into the LAIRCM system, and the evaluation/exploitation of new threats and threat characteristics relative to IRCM.</p> <p>Modeling, Simulation, and Emulation Test activities verify and validate the information obtained from threat analysis activities. These activities include: evaluation of IRCM techniques used in defeating real threat hardware; developing and evaluating jam code, validating and verifying integration of LAIRCM system components to newly developed jam codes, software or hardware, evaluating system effectiveness, performing platform integration support tests, and conducting predictive risk reduction tests prior to Live Missile Fire Test (LMFT) or on aircraft flight testing.</p> <p>Jam code development would be initiated when the threat analysis activities identify and the modeling, simulation, and emulation test activities validate and verify jam code vulnerabilities that make the system less effective. Activities include all work efforts necessary to develop an efficient and effective jam code.</p> <p>Studies and Analysis include logistics, programmatic, and engineering efforts to ensure continued systems viability and sustainability.</p> <p>Program management and administration efforts consist of, but are not limited to contract services and Government costs.</p> <p>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.</p>							
B. Program Change Summary (\$ in Millions)			FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget			7.438	7.758	5.775	-	5.775
Current President's Budget			8.838	7.758	4.116	-	4.116
Total Adjustments			1.400	0.000	-1.659	-	-1.659
• Congressional General Reductions			-	0.000			
• Congressional Directed Reductions			-	0.000			
• Congressional Rescissions			0.000	0.000			
• Congressional Adds			-	0.000			
• Congressional Directed Transfers			-	0.000			
• Reprogrammings			1.400	0.000			
• SBIR/STTR Transfer			0.000	0.000			
• Other Adjustments			0.000	0.000	-1.659	-	-1.659
Change Summary Explanation							
FY12 \$1.4M BTR to fund AC-130U and MC-130 development efforts							

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FY14 \$1.659 Reduction in funding due to program rephasing.				
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
<b>Title:</b> LAIRCM Development  <b>Description:</b> Complete AFSOC EC-130J and continue AC-130U and MC-130H integration efforts.  <b>FY 2012 Accomplishments:</b> Complete AFSOC EC-130J and continue AC-130U and MC-130U integration efforts. Continue development/integration of potential new technologies for new/future LRU/SRUs to be added to the system. Continue development of future infrared countermeasures (FIRCM) capabilities. Continue H/W and S/W upgrade program for current LAIRCM system equipment to new S/W architecture, including additional engagement reporting capability. Continue recurring jam code development and testing program.  <b>FY 2013 Plans:</b> Complete AC-130U and MC-130H integration efforts. Continue development/integration of potential new technologies for new/future LRU/SRUs to be added to the system. Continue development of Future Infrared Countermeasures (FIRCM) capabilities. Continue H/W and S/W upgrade program for current LAIRCM system equipment to new S/W architecture, including additional engagement reporting capability. Continue recurring jam code development and testing program.		8.838	7.758	0.000
<b>Title:</b> Threat Analysis  <b>Description:</b> Encompasses the activities to support threat exploitation analysis of a variety of threats against the current LAIRCM jam code with the intent of determining if jam code updates are required.  <b>FY 2014 Plans:</b> Continue work on Threat analysis in the Guided Weapon Evaluation Facility (GWEF). This is a continued effort from LAIRCM Development in previous years.		0.000	0.000	1.845
<b>Title:</b> Modeling, Simulation and Emulation Test  <b>Description:</b> Activities that verify and validate the information obtained from threat analysis activities.  <b>FY 2014 Plans:</b> Continue work in Modeling, Simulation and Emulation Tests in the Dynamic Infrared Missile Evaluation Facility (DIME LAB). This is a continued effort from LAIRCM Development in previous years.		0.000	0.000	1.770
<b>Title:</b> Jam Code Development  <b>Description:</b> All work efforts necessary to develop an efficient and effective jam code		0.000	0.000	0.000

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C. Accomplishments/Planned Programs (\$ in Millions)									FY 2012	FY 2013	FY 2014
FY 2014 Plans: Develop Jam Code as necessary. This is a continued effort from LAIRCM Development in previous years.											
Title: Studies and Analysis Description: Efforts include logistics, programmatics, and engineering tasks to ensure continued systems viability and sustainability. FY 2014 Plans: Efforts include logistics, programmatics, and engineering tasks to ensure continued systems viability and sustainability. This is a continued effort from LAIRCM Development in previous years.									0.000	0.000	0.200
Title: Program Management and Administration Description: All program management support to include, but not limited to, government costs and contract services. FY 2014 Plans: PMA support to include travel, A&AS and other program management cost. Continued effort from LAIRCM Development in previous years.									0.000	0.000	0.301
Accomplishments/Planned Programs Subtotals									8.838	7.758	4.116
D. 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
• APAF: BA05: Line Item # LAIRCM: Large Aircraft Infrared Countermeasures Mods	0.000	168.600	27.197		27.197	25.791	25.688	26.115	26.588	Continuing	Continuing
• APAF: BA05: Line Item # C00500: C-5 LAIRCM	62.489	0.000	0.000		0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• APAF: BA05: Line Item # C01700: C-17 LAIRCM	32.672	0.000	0.000		0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• APAF: BA05: Line Item # C13000: C-130 LAIRCM	154.841	0.000	0.000		0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• APAF: BA05: Line Item # C1300J: C-130J LAIRCM	45.411	0.000	0.000		0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

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<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014 Base</b>	<b>FY 2014 OCO</b>	<b>FY 2014 Total</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• APAF: BA05: Line Item # HCMC00: <i>HC/MC-130 LAIRCM</i>	34.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
<b>Remarks</b>											
FY12 funding allocated to individual platforms. Funding from FY13 and forward falls under BPAC 674942 so FY12 column zeroed out.											
The FY13 APAF OCO request for LAIRCM production is made up of the following:											
C-130 - \$28.3M											
C-5 - \$27.3M											
C-130J - \$38.1M											
HC/MC-130J - \$46.1M											
<b>E. Acquisition Strategy</b>											
Aircraft integration contracts award to aircraft prime contractor with separate integration support contract awarded to Northrop Grumman Corporation (Rolling Meadows). IR countermeasure upgrades awarded as modifications under the LAIRCM production contract.											
<b>F. Performance Metrics</b>											
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.											

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2014 Air Force</b>												<b>DATE:</b> April 2013			
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development						<b>R-1 ITEM NOMENCLATURE</b> PE 0401134F: Large Aircraft IR Countermeasures (LAIRCM)						<b>PROJECT</b> 674942: Large Aircraft Infrared Counter Measures (LAIRCM)			
<b>Product Development (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All 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>
EC-130J Integration	SS/CPFF	DMEA - Lockheed Martin:Owego, NY	-	0.284		0.503		0.000		-		0.000	0.000	0.787	
AC-130U/MC-130H Integration	SS/CPFF	DMEA - Lockheed Martin:Owego, NY	-	3.018	May 2012	0.800	Sep 2012	0.000		-		0.000	0.000	3.818	
LAIRCM H/W	Various	Various;	-	0.000		0.932		0.000		-		0.000	0.000	0.932	
Engagement Reporting	SS/CPFF	DMEA - NGC:Rolling Meadows, IL	-	1.422		0.000		0.000		-		0.000	Continuing	Continuing	
Threat Analysis	SS/CPAF	DIME LAB:WPAFB, OH	-	1.917		1.966		1.845		-		1.845	Continuing	Continuing	
<b>Subtotal</b>			0.000	6.641		4.201		1.845		0.000		1.845			
<b>Support (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All 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>
Logistics Efforts	Various	Various:Various,	-	0.000		0.678		0.200		-		0.200	Continuing	Continuing	
<b>Subtotal</b>			0.000	0.000		0.678		0.200		0.000		0.200			
<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All 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>
Various Gov't Test Organizations	Various	Various:Various,	-	1.842		2.508		1.770		-		1.770	0.000	6.120	
<b>Subtotal</b>			0.000	1.842		2.508		1.770		0.000		1.770	0.000	6.120	

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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
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	Cost To Complete	Total Cost	Target Value of Contract
A/C Survivability Division (Program Office)	Various	Various:Various,;,	-	0.355		0.371		0.301		-		0.301	Continuing	Continuing	
<b>Subtotal</b>			0.000	0.355		0.371		0.301		0.000		0.301			

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	0.000	8.838	7.758	4.116	0.000	4.116			

**Remarks**

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**Exhibit R-4, RDT&E Schedule Profile: PB 2014 Air Force**

**DATE:** April 2013

**APPROPRIATION/BUDGET ACTIVITY**

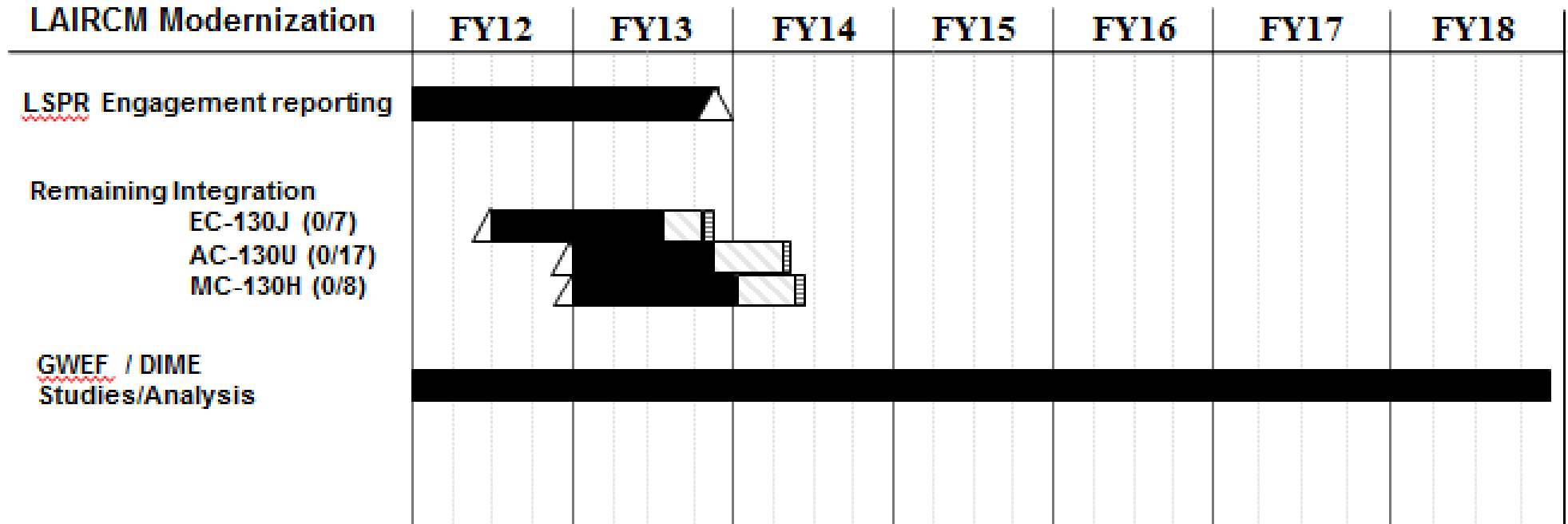
3600: Research, Development, Test & Evaluation, Air Force  
BA 7: Operational Systems Development

**R-1 ITEM NOMENCLATURE**

PE 0401134F: Large Aircraft IR Countermeasures (LAIRCM)

**PROJECT**

674942: Large Aircraft Infrared Counter Measures (LAIRCM)



△ Contract Awards / Project Events  
◇ Milestone Decision

■ Design / development  
▨ Mod/Install/ fielding

▤ Integration / test  
▧ Operations / sustainment

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Air Force			<b>DATE:</b> April 2013
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
EC-130J Integration	2	2012	4	2013
AC-130U Integration	4	2012	1	2014
MC-130H Integration	4	2012	2	2014
DIME/GWEF Studies/Analysis	1	2012	4	2018