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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force										Date: March 2014		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 0401134F I Large Aircraft IR Countermeasures (LAIRCM)							
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	-	6.954	4.116	5.172	-	5.172	7.502	6.690	6.170	6.287	Continuing	Continuing
674942: Large Aircraft Infrared Counter Measures (LAIRCM)	-	6.954	4.116	5.172	-	5.172	7.502	6.690	6.170	6.287	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

# The FY 2015 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 aircraft integration and testing and provide integration support/Hardware buys to incorporate LAIRCM on new platforms, upon request of AMC, AFSOC, multiple potential tanker aircraft variants, and other federal agencies. The last integration 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; and Studies and Analysis.

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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.							
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.							
Studies and Analysis include logistics, programmatics, and engineering efforts to ensure continued systems viability and sustainability.							
Program management and administration efforts consist of, but are not limited to contract services and Government costs.							
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.							
B. Program Change Summary (\$ in Millions)		FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	
Previous President's Budget		7.758	4.116	6.850	-	6.850	
Current President's Budget		6.954	4.116	5.172	-	5.172	
Total Adjustments		-0.804	-	-1.678	-	-1.678	
• Congressional General Reductions		-0.010	-				
• Congressional Directed Reductions		-	-				
• Congressional Rescissions		-	-				
• Congressional Adds		-	-				
• Congressional Directed Transfers		-	-				
• Reprogrammings		-	-				
• SBIR/STTR Transfer		-0.157	-				
• Other Adjustments		-0.637	-	-1.678	-	-1.678	
Change Summary Explanation							
FY15 adjustment of \$1.678M is due to higher AF priorities.							
C. Accomplishments/Planned Programs (\$ in Millions)					FY 2013	FY 2014	FY 2015
Title: LAIRCM Integration					2.722	0.800	-

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>
<b>Description:</b> Continue Mobility Platform integration efforts.  <b>FY 2013 Accomplishments:</b> Continue AC-130U and MC-130H integration efforts/Hardware buys. <b>FY 2014 Plans:</b> Continue AC-130U and MC-130H integration efforts/Hardware buys.				
<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 2013 Accomplishments:</b> Continue work on Threat Analysis in the Guided Weapons Evaluation Facility (GWEF); and Modeling Simulation in the Dynamic Infrared Missile Evaluation (DIME) Lab. <b>FY 2014 Plans:</b> Continue work on Threat analysis in the Guided Weapon Evaluation Facility (GWEF), and Dynamic Infrared Missile Evaluation Facility (DIME)Lab. <b>FY 2015 Plans:</b> Continue work on Threat analysis in the Guided Weapon Evaluation Facility (GWEF),and Dynamic Infrared Missile Evaluation Facility (DIME)Lab.		2.600	1.435	2.500
<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 2013 Accomplishments:</b> Continue work in Modeling, Simulation and Emulation Tests. This is a continued effort from LAIRCM Development in previous years. <b>FY 2014 Plans:</b> Continue work in Modeling, Simulation and Emulation Tests. This is a continued effort from LAIRCM Development in previous years. <b>FY 2015 Plans:</b>		1.060	0.881	1.161

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>								<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	
Continue work in Modeling, Simulation and Emulation Tests. This is a continued effort from LAIRCM Development in previous years.											
<b>Title:</b> Studies and Analysis  <b>Description:</b> Efforts include logistics, programmatics, and engineering tasks to ensure continued systems viability and sustainability.  <b>FY 2013 Accomplishments:</b> 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.  <b>FY 2014 Plans:</b> 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.  <b>FY 2015 Plans:</b> 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.								0.572	1.000	1.511	
<b>Accomplishments/Planned Programs Subtotals</b>								6.954	4.116	5.172	
<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u> <u>Base</u>	<u>FY 2015</u> <u>OCO</u>	<u>FY 2015</u> <u>Total</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF: BA05: Line Item # LAIRCM: <i>Large Aircraft Infrared Countermeasures Mods</i>	154.864	121.247	13.159	-	13.159	32.913	30.873	26.405	26.899	Continuing	Continuing
<b>Remarks</b>											
<b>E. Acquisition Strategy</b> Efforts awarded on an annual basis, exercising existing contract options, support threat analysis and system effectiveness. The LAIRCM program office partners with AFRL and the 782d Test Squadron to conduct threat analysis research and Modeling, Simulation, and Emulation Testing. AFRL contracts with the Guided Weapon Evaluation Facility (GWEF) to provide hardware-in-the-loop developmental test simulation capability on a											

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level-of-effort (LOE) basis. AFRL's Dynamic Infrared Missile Evaluation (DIME) Laboratory performs threat analysis.		
The FY14 platform integration efforts include remaining aircraft integration for the AC-130U, EC-130J, and MC-130H with hardware deliveries, technical orders, and training updates. The integration effort contract is administered by the Defense Micro Electronics Activities (DMEA) contracting agency.		
<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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**Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force**

**Date:** March 2014

**Appropriation/Budget Activity**  
3600 / 7

**R-1 Program Element (Number/Name)**  
PE 0401134F / Large Aircraft IR Countermeasures (LAIRCM)

**Project (Number/Name)**  
674942 / Large Aircraft Infrared Counter Measures (LAIRCM)



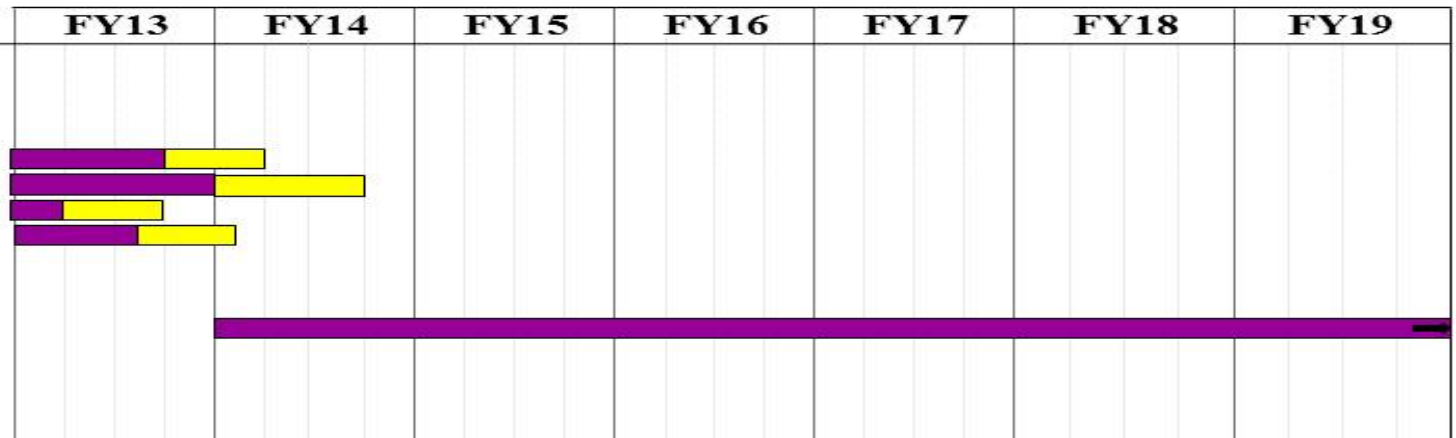
# LAIRCM RDT&E Schedule

**LAIRCM**

LAIRCM ACAT 1C:  
Development Program\*  
& Remaining Integration

AC-130U (1/1)  
MC-130H (1/1)  
EC-130J CS (1/1)  
EC-130J SJ (1/1)

LAIRCM Evolving Threat  
Analysis (ETA)\* (ACAT III)



Design/Development       Integration/Test

\* Includes: Threat Analysis; Modeling, Simulation, & Emulation Test; and Studies & Analysis