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

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270F: <i>EW Development</i>
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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
Total Program Element	86.955	16.880	1.975	-	1.975	1.971	2.002	2.021	2.048	Continuing	Continuing
653891: <i>Advanced IR Counter Measures (AIRCM)</i>	-	1.963	1.975	-	1.975	1.971	2.002	2.021	2.048	Continuing	Continuing
654832: <i>Precision Location and Identification (PLAID)</i>	2.795	-	-	-	-	-	-	-	-	Continuing	Continuing
655305: <i>MALD-J</i>	84.160	-	-	-	-	-	-	-	-	Continuing	Continuing
657004: <i>MALD-J Increment II</i>	-	14.917	-	-	-	-	-	-	-	Continuing	Continuing

Note

In FY 2013, Project 657004, MALD-J Increment II is terminated.

A. Mission Description and Budget Item Justification

This Program Element (PE) consolidates Air Force funding and management of common Electronic Warfare (EW) systems from Materiel Solutions Analysis through Engineering and Manufacturing Development and transition to operational capability. EW is an integral warfighting effect supporting AF Global Strike, Global Persistent Attack and Global Mobility operations as well as Joint-Coalition operations. EW systems influence, deceive, disrupt, degrade, deny, and destroy threats to air operations throughout the electromagnetic spectrum. This PE supports Electronic Support (ES), Electronic Protection (EP), and Electronic Attack (EA). ES programs support the collection, analysis, and dissemination of information related to the detection, geo-location, characterization, and identification of threats to air operations. EP Programs preserve the electromagnetic spectrum for use by friendly forces. EA programs provide self-protection through active and passive measures that deceive threats to air operations using kinetic and non-kinetic means to defeat threats that rely on the electromagnetic spectrum (Radio Frequency (RF), Electro-Optical (EO), Infrared (IR)).

This program is in budget activity 5 - System Development and Demonstration of common EW systems to meet user requirements.

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APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270F: <i>EW Development</i>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	89.966	26.880	56.744	-	56.744
Current President's Budget	86.955	16.880	1.975	-	1.975
Total Adjustments	-3.011	-10.000	-54.769	-	-54.769
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-10.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.552	-			
• Other Adjustments	-0.459	-	-54.769	-	-54.769

Change Summary Explanation

FY11: Adjustments of \$0.459M for economic assumptions.
 FY12: Congressional reduction of \$10M for MALD-J Increment II.
 FY13: MALD-J Increment II program terminated.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604270F: <i>EW Development</i>				PROJECT 653891: <i>Advanced IR Counter Measures (AIRCМ)</i>			
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
653891: <i>Advanced IR Counter Measures (AIRCМ)</i>	-	1.963	1.975	-	1.975	1.971	2.002	2.021	2.048	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Advanced Infrared Countermeasure (AIRCМ) project contains related aircraft self-protection efforts aimed at increasing aircraft survivability against the increasing threat of sophisticated infrared-guided surface-to-air and air-to-air missiles. These missiles may employ sophisticated next-generation electro-optics or dual-mode IR and radio frequency seekers. AIRCМ will provide advanced IR expendable countermeasures and/or IRCМ techniques that will be functionally compatible with existing dispenser systems and employed across multiple USAF weapons systems. This also explicitly includes any and all flare and decoy development and testing that may be demanded or needed in current operations supporting the war on terrorism regardless of aircraft platform. Similar activities that are supplementary to this effort may be accomplished ad hoc using platform specific funding or through other testing activities such as joint services or NATO test groups.

This program is in budget activity 5 - System Development and Demonstration of common EW systems to meet user requirements.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2011	FY 2012	FY 2013
Title: IR Flare Testing	-	1.963	1.975
Description: IR flare testing and qualification on aircraft			
FY 2011 Accomplishments: NA			
FY 2012 Plans: New start FY12. Activities include qualification of IR flare cocktails on F-16 and A-10 aircraft. Flight testing on other platforms TBD.			
FY 2013 Plans: Activities include qualification of IR flare cocktails on various aircraft.			
Accomplishments/Planned Programs Subtotals	-	1.963	1.975

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2013</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u>	
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• APAF, War Reserve Munitions - Fl...: N/A	77.234	29.244	30.932	0.000	30.932	34.931	64.624	74.853	76.200	Continuing	Continuing

D. Acquisition Strategy

Do not anticipate need to award contracts as activities will be completed with Military Interdepartmental Purchase Requests.

E. Performance Metrics

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 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270F: <i>EW Development</i>	PROJECT 653891: <i>Advanced IR Counter Measures (AIRCM)</i>

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270F: <i>EW Development</i>	PROJECT 653891: <i>Advanced IR Counter Measures (AIRCM)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Test Events	4	2012	4	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604270F: <i>EW Development</i>				PROJECT 654832: <i>Precision Location and Identification (PLAID)</i>			
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
654832: <i>Precision Location and Identification (PLAID)</i>	2.795	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

FY11: \$2.7M increase to support Developmental and Operational Test and Evaluation.

A. Mission Description and Budget Item Justification

The AN/ALR-69A Radar Warning Receiver (RWR) is an evolutionary development program consisting of a core digital receiver/processor with growth increments. The core ALR-69A program objectives are to improve identification of threat type, detect threat signals while outside of the threat envelope, and operate in a dense signal environment. Evolutionary growth spirals include single and multi-ship Precision Geolocation (PG) as well as Specific Emitter Identification (SEI). The underlying technologies and algorithms enabling PG and SEI are often collectively referred to as Precision Location and Identification (PLAID).

ALR-69A development is currently focused on a replacement RWR for AFSOC and AMC C-130 aircraft. The ALR-69A is also under consideration by AFSOC, AMC and ACC for integration and installation in other mission design series aircraft.

This program is in budget activity 5 - System Development and Demonstration of common EW systems to meet user requirements.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2011	FY 2012	FY 2013
Title: AN/ALR-69A	2.795	-	-
Description: Develop a common digital radar warning receiver for USAF platforms			
FY 2011 Accomplishments: Completed developmental testing and will complete operational testing certification requirements and Initial Operational Test and Evaluation (IOT&E).			
FY 2012 Plans: NA			
Accomplishments/Planned Programs Subtotals	2.795	-	-

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2013</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u>	
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• None: <i>N/A</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing Continuing

D. Acquisition Strategy

Acquisition was accomplished through full and open competition. The System Development and Demonstration (SDD) contract was awarded to Raytheon Corporation in August 2001.

E. Performance Metrics

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 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270F: <i>EW Development</i>	PROJECT 654832: <i>Precision Location and Identification (PLAID)</i>

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270F: <i>EW Development</i>	PROJECT 654832: <i>Precision Location and Identification (PLAID)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Initial Operational Test and Evaluation	2	2012	4	2012
Full Rate Production Decision	4	2012	4	2012

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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
655305: <i>MALD-J</i>	84.160	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This project develops the Miniature Air Launched Decoy Jammer (MALD-J). The jammer is a variant of the MALD decoy and will be able to operate in both decoy and jammer modes. The decoy and jammer configurations are key enablers supporting the Air Force Global Strike, Global Response, Space and C4ISR, and the Air and Space Expeditionary Force Concepts of Operations. MALD-J will provide stand-in jamming capability for the Airborne Electronic Attack Systems of Systems. It will be launched against a preplanned target and jam specific radars in a stand-in role to degrade or deny the Integrated Air Defense System (IADS) detection of friendly aircraft or munitions.

Planned efforts for this program are risk reduction (to include prototyping) and Engineering Manufacturing and Development (EMD) of the jammer configuration and any other direct increment or variant. This will include design, development, test, aircraft integration, and seamless verification.

This program is in budget activity 5 - System Development and Demonstration of common Electronic Warfare (EW) systems to meet user requirements.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2011	FY 2012	FY 2013
<p>Title: Development</p> <p>Description: MALD-J Engineering and Manufacturing Development will demonstrate the ability of the MALD-J system to operate within the approved Key Performance Parameters, and that system production can be supported by demonstrated manufacturing processes.</p> <p>FY 2011 Accomplishments: Completed MALD-J EMD to include final Development Test & Evaluation and manufacturing readiness. Accomplished Milestone C to enter the Production and Deployment phase and begin Initial Operational Test & Evaluation.</p> <p>FY 2012 Plans: NA</p>	67.657	-	-
<p>Title: Feasibility Studies</p> <p>Description: Future MALD-J concept refinement to characterize the technological feasibility and capability of a future variant utilizing Gallium Nitride (GaN) technology.</p> <p>FY 2011 Accomplishments:</p>	16.503	-	-

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Continue payload, system development and modeling and simulation support. Conducted payload performance and interoperability testing and technical interchange meetings.			
FY 2012 Plans: NA, funding separated into Budget Activity Project Code 657004, represented as MALD-J Increment II.			
Accomplishments/Planned Programs Subtotals	84.160	-	-

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE0207442F, MALD/MALD-J APAF, pr...: <i>APAF, 0207442F</i>	87.144	83.022	87.556	0.000	87.556	89.348	92.448	94.987	95.059	Continuing	Continuing

D. Acquisition Strategy
A full and open competition for MALD was held in FY03 resulting in award of a cost plus award fee contract to Raytheon.

In 2010, the program completed MS B and an Engineering and Manufacturing Development (EMD) contract was awarded to Raytheon.

EMD and Milestone C completed in September 2011, and was followed by MALD-J cut-in to production.

E. Performance Metrics
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 2013 Air Force		DATE: February 2012
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MALD-J Engineering and Manufacturing Development	1	2011	4	2011
MALD-J Milestone C	4	2011	4	2011
MALD-J Initial Operational Test and Evaluation	2	2012	2	2013

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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
657004: <i>MALD-J Increment II</i>	-	14.917	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In FY2012, This project is broken out from BPAC 655305.
In FY2013 Project 657004, MALD-J Increment II was terminated.

A. Mission Description and Budget Item Justification

This project develops the Miniature Air Launched Decoy Jammer (MALD-J) Increment II. Increment II will have increased effective radiated power, sensitivity, and improved techniques to counter emerging threats and will be able to operate in both decoy and improved jammer modes. Increment II will be a key enabler for the Airborne Electronic Attack Systems of Systems supporting the Air Force Global Strike, Global Response, Space and C4ISR, and the Air and Space Expeditionary Force Concepts of Operations. It will be launched against a preplanned target and jam specific radars in a stand-in role to degrade or deny integrated air defense system detection of friendly aircraft or munitions.

This program is terminated in FY13. The Air Force is completing concept refinement and will initiate program shutdown activities.

This program is in budget activity 5 - System Development and Demonstration of common EW systems to meet user requirements.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2011	FY 2012	FY 2013
<p>Title: Development & Demonstration</p> <p>Description: Development to include detailed design and test planning.</p> <p>FY 2011 Accomplishments: N/A</p> <p>FY 2012 Plans: Finish Increment II payload development studies and complete program shut down activities.</p>	-	14.487	-
<p>Title: System Test & Eval/Aircraft Integration</p> <p>Description: Conduct payload performance and interoperability testing.</p> <p>FY 2011 Accomplishments:</p>	-	0.430	-

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
N/A			
FY 2012 Plans: Finish initial payload performance testing.			
Accomplishments/Planned Programs Subtotals	-	14.917	-

C. Other Program Funding Summary (\$ in Millions)											
Line Item	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
• PE 0207442F, MALD/MALD-J APAF pr...: <i>APAF, 0207442F</i>	87.144	83.022	87.556	0.000	87.556	89.348	92.448	94.987	95.059	Continuing	Continuing

D. Acquisition Strategy
MALD-J Increment II is terminated in FY13.

E. Performance Metrics
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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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Program Termination	1	2013	1	2013