

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY <b>5 - System Development and Demonstration</b>		PE NUMBER AND TITLE <b>0604823A - FIREFINDER</b>			
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	84546	47688	20334	Continuing	Continuing
L86 LIGHTWEIGHT COUNTER MORTAR RADAR (LCMR)	9658				9658
L87 LONG RANGE COUNTERFIRE RADAR		100	107		292
L88 ENHANCED AN/TPQ 36	74888	47588	20227	Continuing	Continuing

**A. Mission Description and Budget Item Justification:** This Program funds design, development and test of primary target acquisition and counterfire radars to automatically detect, locate and classify hostile indirect fire weapons (mortars, artillery, rockets, and missiles). This PE directly supports the prioritization, tracking, and locating of targets, and dissemination of that information for simultaneous attack of multiple threats. It provides the Warfighter with continuous and responsive counterfire target acquisition systems for all types and phases of military operations. Project L86, Lightweight Counter Mortar Radar, Version 3 (LCMR (V)3) provides 360 degree coverage and is used to detect, locate and report hostile locations of enemy indirect firing systems out to a range of 10 kilometers. Project L88, Enhanced AN/TPQ-36 (EQ-36), is a highly mobile radar system that will leverage the latest in technology design to accelerate technology infusion and increase range while improving False Alarm Rate, reducing obsolescence and increasing reliability. EQ-36 will provide 90 degree coverage and extended range, with an incremental development to increase detection capability to 360 degrees. The EQ-36 will be interoperable with future Battle Command Systems.

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<u><b>B. Program Change Summary</b></u>	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	76767	47845	9790
Current BES/President's Budget (FY 2010)	84546	47688	20334
Total Adjustments	7779	-157	10544
Congressional Program Reductions		-157	
Congressional Rescissions			
Congressional Increases			
Reprogrammings	9928		
SBIR/STTR Transfer	-2149		
Adjustments to Budget Years			10543

Change Summary Explanation: Funding - FY2010 funding increased for completion of EQ-36 Increment 1 and Increment 2 development, integration and test.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

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<b>BUDGET ACTIVITY</b> <b>5 - System Development and Demonstration</b>		<b>PE NUMBER AND TITLE</b> <b>0604823A - FIREFINDER</b>			<b>PROJECT</b> <b>L86</b>
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
L86 LIGHTWEIGHT COUNTER MORTAR RADAR (LCMR)	9658				9658

**A. Mission Description and Budget Item Justification:** The AN/TPQ-48(V)3 Lightweight Counter Mortar Radar (LCMR) will provide 360 degrees of azimuth coverage and be used to detect, locate, and report hostile locations of enemy indirect firing systems. It will cover a range of 500 meters to 10 kilometers and provide observed fires from friendly units. The AN/TPQ-48(V)3 shall be a digitally connected, day/night mortar, cannon, and rocket locating system. The AN/TPQ-48(V)3 will be a spiral enhancement to the existing AN/TPQ-48(V)2. The LCMR was originally designed to operate as a stand alone capability for Special Forces and is man portable when disassembled. This capability has been fielded to Operation Iraqi Freedom (OIF) as a Limited Procurement Urgent (LPU) capability.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Primary development of thirteen (13) test articles to include non recurring engineering and Program Management support.	6177		
Develop/build Radar Environmental Simulator (RES) to simulate system hardware/software and emulate the radar performance.	1063		
Activities to support Development Test/Operational Test. Efforts include conduct of Live Ammunition Test at Yuma Proving Ground (YPG), Limited User Test, ammunition and manpower to support system test.	2418		
Total	9658		

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
SSN: B05201 Lightweight Counter Mortar Radar	58512	80760	90251	Continuing	Continuing

Comment:

**C. Acquisition Strategy** The Lightweight Counter Mortar Radar (LCMR) prototype was developed as a Special Operations Command (SOCOM) program under the Office of Special Technology, Broad Agency Announcement (BAA). The LCMR Engineering Development Program was also SOCOM funded which resulted in to a functional system. The LCMR leverages the SOCOM developed program and serves as a spiral development effort to provide greater range, accuracy, interoperability and transportability to support Army's requirements. Acquisition Strategy Approval was obtained in May 06 and a contract was awarded in Sep 06 to spiral the existing system into the Army's objective system.

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<b>BUDGET ACTIVITY</b> <b>5 - System Development and Demonstration</b>		<b>PE NUMBER AND TITLE</b> <b>0604823A - FIREFINDER</b>			<b>PROJECT</b> <b>L88</b>	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost	
L88 ENHANCED AN/TPQ 36	74888	47588	20227	Continuing	Continuing	

**A. Mission Description and Budget Item Justification:** The Enhanced AN/TPQ-36 (EQ-36) is a highly mobile radar system designed to classify targets for automatic first-round location of mortar, cannon and rocket enemy fires and to provide observed fires from friendly units. The EQ-36 will provide 90 and 360 degree coverage against the entire threat set. This program will leverage the latest in technology design to provide increased range, reduced crew size, as well as increased reliability, availability, and maintainability. The EQ-36 will provide digital communications and be interoperable with future Battle Command Systems.

FY2010:

- a. Continuation of development, integration and test of four (4) Non-Recurring Engineering (NRE) Increment 1 systems
- b. Design, integration and test of Increment 2 capabilities

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Primary development and test of four (4) Enhanced AN/TPQ-36 NRE Increment 1 systems, and associated Program Management support to meet the Army's counterfire requirements.	71504	32270	8681
Increment 2 Design and Integration	3184	8384	7402
Activities to support Development Test/Operational Test. Efforts include cost of range times at YUMA Proving Ground (YPG), gun crews, and manpower to support system test.	200	5601	4144
Small Business Innovative Research/Small Business Technology Transfer Programs		1333	
<b>Total</b>	<b>74888</b>	<b>47588</b>	<b>20227</b>

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
B05310 Enhanced AN/TPQ-36	160344	106745	220665	Continuing	Continuing

Comment:

**C. Acquisition Strategy** The Enhanced AN/TPQ-36 (EQ-36) leverages technology developed in the Multi-Mission Radar Advanced Technology Objective (ATO) program incorporating the latest antenna technology into the EQ-36. In order to field the EQ-36 capability to the Warfighter in the most expeditious manner with the least amount of risk, the EQ-36 will be produced in two increments based on two tiers of technical threshold requirements. Increment 1 capabilities are planned to be fielded as a replacement to the AN/TPQ-36 and AN/TPQ-37 radar systems. Increment 2 capabilities will provide increased performance over Increment 1 and will meet all of the user's threshold requirements.

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A contract was awarded in 4QFY06 based on full and open competition. The system will be procured in three (3) Initial Production lots. Full rate production contract is to be competed in FY11. The system is planned to eventually replace all of the AN/TPQ-36 and AN/TPQ-37 legacy systems in the fleet.

# ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
<b>5 - System Development and Demonstration</b>			<b>0604823A - FIREFINDER</b>							<b>L88</b>		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	CPIF	Lockheed Martin, Syracuse, NY	52590	67773	1-4Q	37286	1-3Q	13313	1-3Q	Cont.	Cont.	
Ancillary Equipment	MIPR/Requisitions	Various	1032	2539	2Q	935	2Q	973	2Q		5479	
Radar Environmental Simulators (RES)	MIPR	Oakridge National Labs, Oak Ridge, TN	4500								4500	
Systems Engineering (Contractor)	C/FP	Various	2090	1708	1-2Q	658	1-3Q	600	1-3Q	Cont.	Cont.	
Systems Engineering (Government)	MIPR	Various	540	186	1-2Q	372	1-2Q	100	1-2Q	Cont.	Cont.	
SBIR/STTR Transfers						1333					1333	
Subtotal:			60752	72206		40584		14986		Cont.	Cont.	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Source Selection Efforts	MIPR	Various	828							Cont.	Cont.	
Development Support (Government)	MIPR	Various	1078	1225	1-2Q	781	1-2Q	647	1-2Q		3731	
Development Support (Contractor)	C/FF	Various	1193	443	1-2Q	372	1-2Q	200	1-2Q		2208	
Subtotal:			3099	1668		1153		847		Cont.	Cont.	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Test Support (Government)	MIPR	Various	125	200	2Q	5601	2Q	4144	2Q	Cont.	Cont.	
Subtotal:			125	200		5601		4144		Cont.	Cont.	

# ARMY RDT&E COST ANALYSIS (R3)

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PROJECT  
**L88**

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program Management (Contractor)	C/FP	Various	1727	255	1-3Q		1-3Q			Cont.	Cont.	
Program Management (Government)	MIPR	Various	556	146	1-3Q		1-3Q			Cont.	Cont.	
Program Management	In-House	PM NV/RSTA, Fort Monmouth, NJ	1703	413	1-4Q	250	1-4Q	250	1-4Q	Cont.	2866	
Subtotal:			3986	814		250		250		Cont.	Cont.	
<b>Project Total Cost:</b>			<b>67962</b>	<b>74888</b>		<b>47588</b>		<b>20227</b>		<b>Cont.</b>	<b>Cont.</b>	



# Schedule Detail (R4a Exhibit)

May 2009

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PROJECT  
**L88**

<u>Schedule Detail</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
NRE Increment 1 & System Integration	1Q - 4Q	1Q - 4Q	1Q - 4Q					
System Requirements Review (SRR)								
Preliminary Design Review (PDR)								
Critical Design Review (CDR)	2Q							
NRE Increment 2 & System Integration	3Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 2Q				
Initial Production	4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q			
Dev Test/Operational Test (DT/OT) Increment 1		3Q - 4Q						
Dev Test/Operational Test (DT/OT) Increment 2			1Q - 2Q					
First Unit Equipped (FUE) - IP Systems			2Q					
Full Rate Production Decision(FRP)				3Q				