

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)							February 2003				
BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604820A - RADAR DEVELOPMENT				PROJECT E10			
COST (In Thousands)		FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
E10	SENTINEL	4952	0	0	0	0	0	8178	7884	0	33925
<p><u>A. Mission Description and Budget Item Justification:</u> The Sentinel, AN/MPQ-64, consists of a High Mobility Multipurpose Wheeled Vehicle (HMMWV) towed radar-based sensor with its prime mover/power, identification friend or foe (IFF), and Forward Area Air Defense (FAAD) Command, Control, and Intelligence (C2I) interfaces. The sensor is an advanced three-dimensional battlefield X-Band air defense phased-array radar with an instrumented range of 40 km. The Sentinel is capable of operating day or night, in adverse weather conditions, in the battlefield environments of dust, smoke aerosols, and enemy countermeasures. It provides 360-degree azimuth coverage for acquisition and tracking. The Sentinel contributes to the digital battlefield by automatically detecting, classifying, identifying, and reporting targets (cruise missiles, unmanned aerial vehicles, rotary wing and fixed wing aircraft). The Sentinel Enhanced Target Range and Classification (ETRAC) Modernization program will improve Sentinel's capability against evolving threats. ETRAC provides the capability for Sentinel to detect and classify small radar cross-section targets, such as cruise missiles and unmanned aerial vehicles. The system provides Forward Area Short Range Air Defense (SHORAD) system information dominance via a digital air picture for support of maneuver forces and critical assets. Without ETRAC, Sentinel would not be able to determine aircraft type or to support manned vs. unmanned determinations to fully support precision engagements beyond visual range. In order to engage at ranges beyond visual, the SHORAD system must detect and track the target at sufficient range to alert, and cue the gunner to the target. The Sentinel Modernization efforts extend the range of Sentinel against reduced radar cross section targets so the gunner will receive a cue with sufficient time to engage at ranges beyond visual. However, cueing alone is not sufficient to support an engagement. The target either must be identified as a foe or must be classified as an engageable target (unmanned) that is a threat to defended assets. The Modernization Program positions Sentinel to determine aircraft type or to support manned versus unmanned determinations to fully support precision engagements beyond visual range. ETRAC Modernization efforts support the Legacy to Objective transition path of the Transformation Campaign Plan (TCP) by ensuring that the Sentinel systems in the field support the acquisition, tracking and classification of targets to enable the SHORAD weapons to engage these targets at maximum effective range.</p>											
<u>Accomplishments/Planned Program</u>							<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	
Completed ETRAC Prototype Design and Development							1914	0	0	0	
Completed ETRAC Target Classification Prototype Design and Development							631	0	0	0	
Completed Integration and Test of ETRAC							2407	0	0	0	
Totals							4952	0	0	0	

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PROJECT

5 - System Development and Demonstration**0604820A - RADAR DEVELOPMENT****E10****B. Program Change Summary**

	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget (FY 2003)	5119	0	0	0
Current Budget (FY 2004/2005 PB)	4952	0	0	0
Total Adjustments	-167	0	0	0
Congressional program reductions				
Congressional rescissions	-25			
Congressional increases				
Reprogrammings				
SBIR/STTR Transfer	-142			
Adjustments to Budget Years				

C. Other Program Funding Summary

	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
Other Procurement, Army 2 (SSN WK 5053)	1874	31	0	0	0	0	0	0	0	1905
Other Procurement, Army 2 (SSN WK 5057)	30650	39423	17595	13701	13678	15134	19009	22941	0	172131
Spares (SSN BS 9732)	1819	0	0	0	0	0	0	0	0	1819

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<p><u>D. Acquisition Strategy:</u> The Modernization Program awarded a sole source Cost Plus Award Fee (CPAF) contract to the production manufacturer for the transmitter effort. The Modernization Program also awarded an additional sole source Cost Plus Fixed Fee (CPFF) contract to the production manufacturer for the ETRAC efforts during FY00. The ETRAC contract will be executed in three phases. The first phase finalizes the requirement definition. The second phase continues through successful demonstration of prototypes with Key Performance Parameter (KPP) capabilities, and the third phase continues to successful integration and test of target classification capabilities. Continuation of each phase is dependent on the successful completion of the previous phase limiting the risk to the Government. Both the ETRAC and the Transmitter efforts will aggressively implement the tenets of Cost As an Independent Variable (CAIV) to assure Total Ownership Costs of the Sentinel are reduced. The program will take advantage of already developed items and certain off-the-shelf technologies to minimize risk while ensuring cost, schedule and performance goals are achieved.</p>		