LBSS - Archived 9/96

Orientation

Description. Lightweight Battlefield Surveillance System (LBSS)

Sponsor.
US Army
Communications and Electronics Command
Fort Monmouth, NJ

Contractors. To be selected.

Licensee. To be decided.

Status. Army seeking sources and inputs prior to issuing an RFP.

Total Produced. None

Application. The LBSS will be a replacement sensor to provide an all-weather ground-based surveillance capability for M1 heavy armor forces.

Price Range. Undetermined.

Technical Data

Design Features. The US Army sources-sought announcement called for a light weight, low-probability of intercept (LPI), line-of-sight (LOS) surveillance capability which would meet the mobility and survivability requirements of maneuver forces. The system should have a range of 20 kilometers and the ability to work in all-weather and visibility conditions. The new equipment would have to fit the rear of a High Mobility Multi-Purpose Vehicle. Although not an absolute requirement, an off-the-shelf or non-developmental system is preferred.

Operational Characteristics. The LBSS will have to detect movement, classify targets, and locate threat forces for situation development or targeting. It would also have to be able to automatically distinguish wheeled from tracked vehicles.

Variants/Upgrades

Not applicable.

Program Review

Background. The US Army originally planned to have its heavy forces rely on unmanned aerial vehicles for ground surveillance as the PPS-5 and PPS-15 ground radar are retired. Field commanders voiced strong objections to this plan based on the performance of RPVs in the Persian Gulf. During Operation Desert Storm RPVs were employed extensively when the weather was clear. However, cloud cover and poor visibility limited when these assets could be used.

In March 1992, the Army released its initial sources sought announcement and began looking for ways to fund the development of a replacement for the PPS-5 and PPS-15 battlefield radar used to support its heavy armor forces. A program to provide sensors to light units, the LSDIS, had been previously funded and a development contract awarded in 1991.

The new system was tentatively titled the Lightweight Battlefield Surveillance System (LBSS). The original goal was to field the LBSS sometime in FY93 when the logistics supply of PPS-5 and PPS-15 spares and repair parts were expected to be depleted. Funding constraints, combined with an emphasis on the development of new anti-aircraft and anti-helicopter radar, caused this goal to be missed.

In May 1993, the Army still maintained a need for LBSS. The system continued to be mentioned in the 1993 Science & Technology Master Plan. However, the program had not yet been funded. New starts were being held in favor of finding modified systems to meet Army mission needs. LBSS was desired but not formalized in FY94 and FY95 funding documents.

The Army continues to hold out hope as the program awaits a funding decision. Budget constraints are the major complication. Although the Army would like new radar, it is having to prioritize where its limited funds will be used.

Funding

No specific funding source has been identified.

Analysis. The Army has questioned the viability of relying totally on RPVs for battlefield situational awareness. In the Persian Gulf, poor weather and limited visibility degraded the usefulness of RPV surveillance systems. Night vision equipment and infrared sensors performed well on the battlefield and were credited with being a major reason for the success of the Coalition forces over the Iraqi Army during the 100-hour ground war.

Commanders are aware of the tactical implications of radio-frequency sensors in modern combat. Radar can be like tracers; they work in both directions. As potential enemies field detection and jamming systems, different technologies become more attractive. This includes infrared and electro-optical sensors which can detect targets without revealing their presence or location.

The highly mobile ground battle of Operation Desert Storm raised another question about what will meet the needs of heavy armor units. Radar must be set up on a ground site to provide useful information. During the ground war, forces moved so rapidly it would have been impossible for a unit to set up radar surveillance sites. Night vision and IR sensors can be carried by individual soldiers, vastly expanding the sensing capability of front line units.

Technology is rapidly improving the performance of these systems. With third generation staring arrays nearing fielding, radar are losing some of their priority for the ground support mission. Radar development money is having to be spent for air and missile defense systems, and other surveillance techniques are increasing in their applicability to this task.

The Lightweight Battlefield Surveillance System (LBSS) does not specify the type of basic sensor. Mission needs of mobility, low probability-of-intercept, and target classification favor a combined IR/EO and radar approach. One possibility is a radar surveillance which could cue non-emitting sensors. Radar has the range advantage, but IR/EO sensors can be more useful in target identification and classification. New advances in pattern recognition make automating this feature possible. On-the-move surveillance will be more likely to use IR/EO techniques only.

Likely contenders, if an RFP is ever issued, include the Motorola MSR-5 and MSR-20 Modular Surveillance Radar. These would provide the radar portion of the sensor with as yet unidentified IR/EO equipment filling in the non-RF needs of the system. European manufacturers may be expected to join the bidding, either alone or in conjunction with a US company. Time and budget constraints will make it most likely that an off-the-shelf system or combination of systems will be selected.

The Army needs a new sensor system. The question is, with all their other needs, when will planners have the money to procure this one?

Recent Contracts

None yet.

Timetable

	1992	Tentative Mission Needs Statement
	FY93	Initial desired fielding date
May	1993	Briefing to industry

Worldwide Distribution

This is a **US**-only program thus far.

Forecast Rationale

Command pressure and mission analysis prompted a serious effort at developing a ground sensor to replace current, aging radar. Funding, however, has not been available for a new-start. Nothing was specifically earmarked for FY94 or FY95, and the Army has had to seriously analyze its priorities for FY96 and beyond. Planners are evaluating the size and shape of the future Army.

The future will probably see a combination of RPV and ground applications, reducing the overall procurement of LBSS units. An overall buy of 700 to 900 units was thought to be a possible procurement target. The type of system ultimately selected will be a major factor in determining the overall market. When, or even if, the Army is able to formalize and start the program is uncertain.

Ten-Year Outlook

To be determined.

* * *