

IDSA COMMENT

Modernising the Army's Tactical-level Communications Systems

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The MNCs manufacturing defence equipment have been rushing to India as the country is likely to spend approximately US\$ 100 billion (Rs 250,000 crore) over the next ten years on defence acquisitions. This has been evident in the recently concluded DefExpo 2014.

However, most of this expenditure will be on weapons platforms like main battle tanks, 155 mm artillery, infantry combat vehicles, fighter aircraft, ships and submarines and very little on command, control, communications, computers, intelligence, surveillance and reconnaissance systems (C4I2SR). In fact, the modernisation of communications systems has lagged far behind that of weapons platforms, particularly in the Indian army.

While some modern frequency-hopping radio sets with integral encryption devices have been introduced into service in recent years, networked communications, which form the backbone of an effective command and control system, need substantial upgradation. The existing Plan AREN system that is designed to roll forward and keep pace with offensive operations in the plains has been in service for almost three decades and is based on outdated and bulky technologies like second generation radio relay hubs.

Requests for Information (RFI) were floated for a Tactical Communication System (TCS) for offensive operations and a Battlefield Management System (BMS) for communication at the tactical level in defensive operations a few years ago, but since then the acquisition process has meandered continuously and this has resulted in prolonged delays in introducing both these systems into service.

The new optical fibre network being laid as an alternative to the 3G spectrum surrendered by the armed forces will go a long way in providing modern land-line communications in peace stations and to limited extent up to the war-time locations of higher formation HQ. However, future communication systems will need to provide wide-band data capabilities to facilitate the real time transmission of images and battlefield video while on the move all the way down to armoured and artillery regiments and infantry battalions.

This will be done by the BMS, which will be integrated with the Army Static Communications (ASCON) system. ASCON is the backbone communication network of the army. ASCON provides voice and data links between static headquarters and those in peace-time locations. It is expected to be of modular design so that it can be upgraded as better technology becomes available. The BMS is meant for communications from the battalion headquarters forward to the companies and platoons. It will enable the Commanding Officer to enhance his situational awareness and command his battalion through a secure communications network with built-in redundancy.

The BMS system will integrate all surveillance resources available at the battalion or regiment level, including from locally launched UAVs and ground sensors. It will also provide the accurate location of all the troops and key weapons platforms as well as the location of enemy troops and terrain analysis. The BMS will also automatically receive and transmit data, voice and images from multiple sources above the regiment and battalion level, including radars, cameras and laser range finders, simultaneously providing junior commanders on the battlefield all relevant information that has been received from the Battlefield Surveillance System (BSS). The system will be based on net radio-cum-hand-held computers.

The TCS is a system that is meant for offensive operations – a mobile system that can 'leapfrog' forward as offensive operations progress into enemy territory. The offensive operations echelons of the 'pivot' or 'holding' Corps deployed on the international boundary and the three Strike Corps will be equipped with TCS. TCS will replace the obsolescent Plan AREN system.

It was reported on July 23, 2013, that BMS has been categorised as a 'make India' system by the Defence Acquisition Council headed by the Defence Minister. This implies that the system must be designed and developed in India by domestic companies. According to the US-based Defense News, "In the months ahead, expressions of interest (EOIs) will be sent to more than a dozen Indian defence companies, private and state-owned, inviting them to participate in the program. The EOIs are likely to be sent to Bharat Electronics Limited (BEL), Electronics Corporation of India, Computer Maintenance Corporation, ITI, domestic private-sector major Tata Power SED, Rolta India, Wipro, Larsen & Toubro, HCL, Punj Lloyd, Bharat Forge, Tata Consultancy, Info Systems and Tech Mahindra." This will ensure that Indian companies invest in developing the required communications technology and acquire the ability to design and implement robust tactical communications systems.

MNCs with suitable technologies and the right experience to help the Indian companies should be considered for forming either a joint venture or for buying technology and assistance as system integrators. According to Defense news, "The overseas defence companies expected to compete include Israel Aerospace Industries, Rafael and Elbit of Israel; Thales and Nexter of France; Rhode & Schwartz of Germany; BAE Systems of the UK; Lockheed Martin, Raytheon and General Dynamics of the US; and, Selex of Italy." Indian companies planning to bid for these contracts must carefully evaluate the technological capabilities of these MNCs and how their systems have fared during recent combat operations, the type of experience they have in integrating tactical communications systems and whether they are likely to bring a long-term commitment to the Indian projects.

Defense News has reported further that "The government expects to select two vendors after four months of evaluation of the EOIs. Each of those two companies will be asked to develop four BMS prototypes for mountain, jungle, plains and desert operations. The development of the prototypes is projected to cost about \$67 million with the MoD covering 80 per cent of the expense and the shortlisted domestic company 20 per cent. The prototypes will be put through extensive field trials and the selected defence company will be asked to produce more than 500 systems in India for an estimated \$5 billion. It will take up to three years for the final bidder to be selected before production begins."

Meanwhile, the acquisition process for the TCS system is also underway. Both TCS and BMS will need to be mutually compatible systems and the MNC that can supply state-ofthe-art technology for both the systems at competitive prices will have a clear edge. In fact, it may be cost-effective for the MoD to award both the contracts to the same Indian communications company so that compatibility can be ensured. India must skilfully leverage its buyer's clout to ensure that each defence acquisition contract results in the transfer of cutting edge defence technology to Indian companies. This is necessary not only for communication systems but also for all other weapons and equipment so that the country's technological threshold is raised by an order of magnitude.

Future defence acquisitions must be firmly rooted in joint research and development with leading MNCs, joint trials and testing and joint manufacture and marketing. The patronclient, buyer-seller relationship in arms procurement in which India had been involved in the past, with first the Soviet Union and then Russia, must be consigned to history as a sorry chapter that is best forgotten.

Views expressed are of the author and do not necessarily reflect the views of the IDSA or of the Government of India.