Command and Control

The government must urgently address Indian Army's requirement for latest communication systems

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THE TACTICAL DOMAIN IS EXTREMELY fragile, with rapid mobility in a hostile and dynamic environment. In such an environment, modern day communication tools assume a crucial role as they ensure constant information flow that would help the ground forces to perform their operations efficiently. The single biggest challenge in this scenario is the vulnerability of communication devices to attacks, or threats in the electronic, cyber as well as the physical domain. Although the focus of the Indian Army's procurements so far has been mainly on the weapon platforms like artillery, air defence guns etc, the government must soon realise that the communication system is the most essential tool for future tactical operations. Better Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance systems (C4ISR) are the need of the hour for the armed forces.

The Indian Army's long awaited 'Make' procurements like Battlefield Management System (BMS) and Tactical Communication Systems (TCS) are progressing at a snail pace. The two consortia - Tata Power SED with Larsen & Toubro (L&T), and Bharat Electronics Limited (BEL) with Rolta India - that were previously selected by the defence ministry in the BMS programme, had submitted their detailed proposals to the ministry in March 2016, and are now awaiting the results. The BMS project, categorised as a 'Make' programme under the DPP, will be one of the largest solutions to be indigenously manufactured for Indian defence. This prestigious project is meant to deliver Command and Control capabilities to the fighting echelons, operating at the forward edge of the tactical battle area of the battalion and combat group levels. BMS is a situational awareness and visualisation system that aims to optimise the operational effectiveness of tactical units.

In February 2015, the ministry of defence (MoD) had shortlisted BEL-Rolta and Tata-L&T consortia for the BMS project worth over Rs 50,000 crore.

BEL has been proactively working on BMS. The company has established the test-bed of BMS for continuous evaluation and implementation of user requirements. Having worked on several Tactical Command, Control, Communications & Intelligence (Tac C3I) systems of the Indian Army, in association with Defence Research and Development Organisation (DRDO), BEL certainly has the expertise for the BMS programme. In the recently concluded DefExpo in Goa, BEL and Rolta had jointly displayed their BMS system that is in the development stage. Rolta has also invested significantly in BMS technologies indigenously and has over the years delivered cutting edge Command, Control, Intelligence, Surveillance and Reconnaissance (C2ISR) systems to the

SECURE COMMUNICATIONS
An Indian Army soldier during Exercise Sanghe Shakti

Indian military. As a part of the consortium, Rolta is executing its role and responsibility in areas of BMS application software development and applicable licensing, GIS software and GIS data services. Rolta is jointly working with BEL for manufacturing subsystems for the soldier system, the overall system design, integration, installation, commissioning and maintenance of the BMS solution.

Tata Power SED and L&T collaboration is also very hopeful about the outcome of the programme. Given the scope of the programme, Tata Power SED hopes that when BMS is deployed by the Indian Army, it will cover more than 70 per cent of the soldiers while digitising the tactical battlefield and creating a secure internet of things (IoT) for the army. Tata Power SED boasts that it is one of the few private companies with a track record of over four decades in defence R&D and production.

The Indian Army will go through the proposals and the MoD will then issue orders for the development of the prototypes followed by a production order. This is certainly an important programme in the defence ministry's acquisition plan as the tender will only be issued to the Indian companies, although the development agencies are open to choose overseas partners for technical assistance. The government will fund 80 per cent of the programme during the prototype development stage and the remaining 20 per cent will come from the agencies themselves. It could take up to two years to reach production after the prototype is developed and selected by the Indian Army.

Tactical Communication system (TCS) for the Indian Army is also listed as one of the Make (India) projects. There have been numerous delays in this programme after the down selection of the defence firms that will compete in the programme. Apart from BEL, the state-owned company that manufactures defence electronics, a consortium with three Indian companies L&T, Tata Power SED, HCL was also downselected. The consortium of these private sector companies will be led by L&T.

BEL will compete with this consortium of Indian private sectors, and the L-1 will be decided accordingly by the MoD. The Indian Army will fund 80 per cent for the prototype that will be built for user trials, and the rest 20 per cent will be managed by the company itself. At the end, Indian Army along with the MoD, will take the final call on the winner.

Emerging Trends

There is an emerging trend in the utilisation of battlefield management systems. Israeli company Elbit Systems' Weapon integrated Battle Management System (WinBMS) solution connects platform weapon systems to the BMS enabling rapid sensor to shoot loop closure. Targets are rapidly acquired, identified, shared and engaged with WIN-BMS. According to Elbit, this system can be deployed to all weapon based platforms including attack helicopters, tanks, AFVs and for all Remote Weapon Stations (RWS) and significantly increases the platforms' lethality and survivability. Elbit is also offering BMS-D, the Dismounted Infantry BMS solution, which is an integrated infantry combat system enabling full situational awareness from the infantry battalion level down to the individual fire team, platoon and company commander. Elements such as soldier Blue Force Tracking can also extend down to individual soldiers. BMS-D dramatically shortens the sensor-to-shooter loop, significantly improves situational awareness for the soldier/commander in the fight and greatly enhances the combat effectiveness of the dismounted soldier.

It is no surprise that the western armies are rapidly acquiring critical command and control capabilities that will significantly augment their fighting capabilities in the tactical situations. In April 2016, Australia picked Harris Corporation for the Land 2072 Phase 3 programme, which is a critical part of the Australian Army's Networked Digitisation Plan. The plan will modernise the Australian Army's communications network - enhancing operational tempo and command and control. Under the programme, Harris will provide an integrated tactical communications network for voice and data services to tactical forces over line-of-sight and beyond-line-of-sight applications. The solution will include tactical radios and other systems and technology from Harris and other partner companies. "This agreement reinforces Harris' status as a trusted partner and continues our long-standing commitment to providing the Australian defence force with secure communications and networking solutions," said Alan Callaghan, president and managing director, Harris Defence Australia. "Harris is proud to be part of such a pivotal programme and to support the Australian Army's continued modernisation efforts."

In June 2015, Canadian Army has selected Thales' command and control system for its light armoured vehicle. This contract is part of Canada's much bigger battlefield management system which is also handled by Thales. Alain Gauthier, Vice-president in charge of secure communications and information systems for Thales in Canada said, "Under the partnership, Thales will design, develop and qualify the Battlefield Operational Surveillance Software (BOSS) that enables soldiers to configure, control and monitor the surveillance suite sensors from a customised user interface, leveraging the established Thales pedigree from the Land Command Support System (LCSS). Thales in Canada is the prime contractor of the Canadian Army's tactical battle management system".

In 2009 Thales was awarded the Land Command Support System (LCSS) Long-Term Software Support (LTSS) contract by the government of Canada. Based on the original software from Thales created for the French Army, Thales has designed to support the Command and Control (C2) decision action cycle. With the support of various partners, the entire baseline has been designed and is focused on providing Commanders and their staffs with up-to-date battlefield information, enabling them to make better and timelier decisions. Relevant data is provided to users based on roles and is displayed graphically. Users can also interact seamlessly with other components of the Land Force Command and Control Information System (LFC2IS) and share information throughout the entire battlefield, creating a common operational picture, shared situational awareness, and information dominance.

Besides Harris Corporation, Thales and Elbit, some of the other vendors for the advanced BMS systems include Lockheed Martin, Northrop Grumman and Rockwell Collins. ∎