India Showcases Domestically Developed EW Systems

By Atul Chandra

The recently concluded Aero India air show, held in the Southern Indian city of Bengaluru, was witness to a growing range of domestically developed electronic warfare (EW) systems.

Among the items showcased were the Sarang electronic support measures (ESM) system developed for use on Navy Kamov Ka-31 Airborne Early Warning (AEW) helicopters and the Dhruti digital radar warning receiver (RWR) and Advanced Self Protection Jammer (ASPJ) pod developed for use on Indian Air Force (IAF) Sukhoi SU-30 MKI fighter jets.

India's Defence Research & Development Organisation (DRDO), the nation's lead defense research agency, runs its Navy EW/ESM projects under Programme Samudrika, with seven different systems in development. The airborne systems are Sarang, Sarakshi, Sarvadhari and Nikash, while the shipborne systems are Shakti, Nayan and Tushar.

The Sarang project was accorded the Acceptance of Necessity (AoN), which is the first step in the Indian procurement process, in January, this year. Work on the program had started in 2018. The ESM system intercepts, detects and identifies air/ground/shipborne radar emissions including short duration transmissions from submarines in the B-K frequency band, a DRDO official said, adding that the system had completed developmental trials, and User Evaluation Trials (UET) were now underway. The sensor information is presented on a single ruggedized laptop display.

Production versions of the Sarang heliborne ESM system will be built by state-owned defense public sector undertaking (PSU)

Bharat Electronics Limited (BEL).

The Dhruti DR 118 digital RWR and ASPJ pod are under development at the Combat Aircraft Systems Development & Integration Centre (CASDIC) in Bengaluru. The new RWR is a form-fit replacement for the existing RWR on air force SU-30 MKIs. Following the completion of user trials, the IAF approved production of 129 systems. Manufacture of the digital RWRs was to have started in December 2022 by an Indian industry consortium of BEL, Data Patterns, Mistral Solutions, FLIC and Astra Microwave.

The pod-mounted ASPJ replaces a Russian-origin equivalent and will be installed as pods on the wing-tip stations of the SU-30 MKI. The official said the ASPJ pod structure had been developed and the system was presently undergoing qualification trials. The pod-mounted ASPJ features an Active Phased Array sensor, wide band digital receiver, ultra-wide band Digital Radio Frequency Memory (DRFM) and an in-built cooling system.