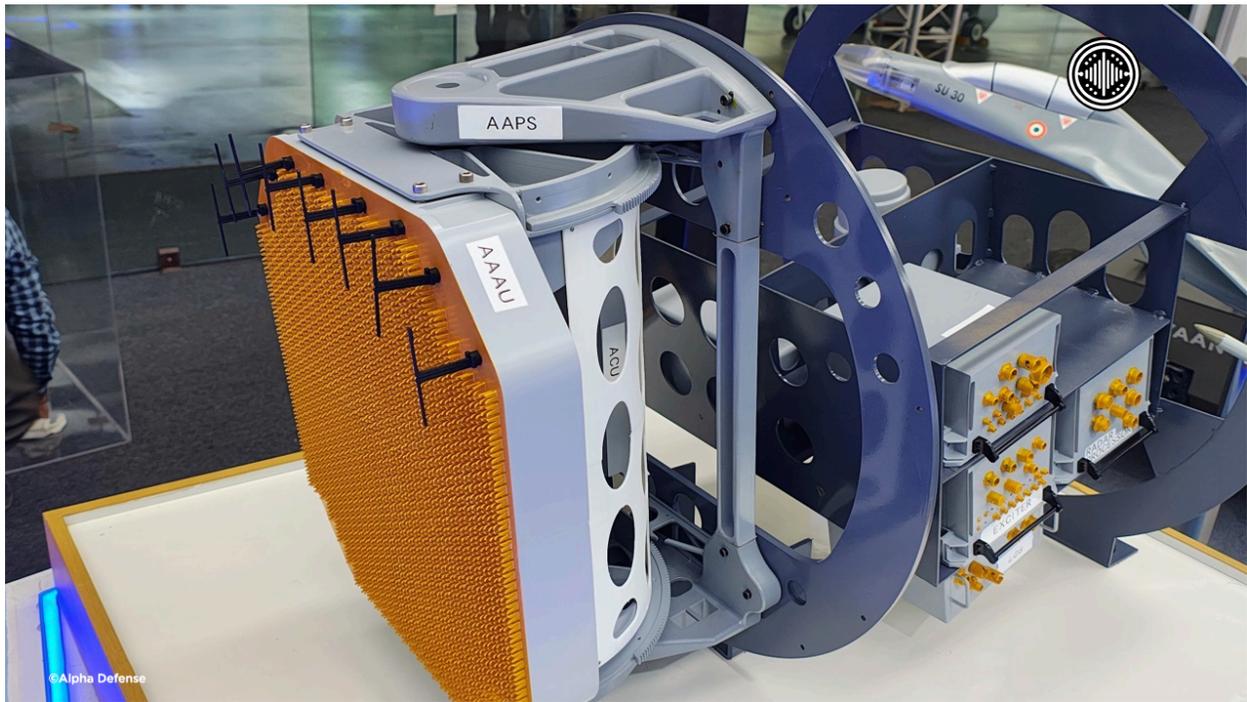


Bolstering Air Power: LRDE Seeks Private Sector for Virupaksha AESA Radar Development



In a strategic move to enhance the capabilities of the Indian Air Force's (IAF) Su-30MKI fighter fleet, the Electronics and Radar Development Establishment (LRDE), a prominent laboratory under the Defence Research and Development Organisation (DRDO), has initiated a search for a private sector partner. The collaboration aims to co-develop and produce the advanced "Virupaksha" Active Electronically Scanned Array (AESA) radar, a cornerstone of the Su-30MKI's "Super-30" modernization program. This critical partnership, formally announced through a Request for Proposal (RFP) on July 18, 2025, marks a significant stride in India's pursuit of self-reliance in cutting-edge defense technology.

The Virupaksha AESA radar is poised to replace the existing Russian-made N011M Bars passive array radars currently equipped on the Su-30MKI. Unlike older mechanical or passive array systems, AESA radars can simultaneously track numerous targets across multiple frequencies without physical movement, offering enhanced speed, precision, and resilience against electronic countermeasures. The Virupaksha is projected to have a detection range of 300 to 400 kilometers for fighter-sized targets and can track between 64 and 100 targets at once, effectively transforming the aircraft into a "mini-AWACS" (Airborne Warning and Control System). Its advanced features, including a unique repositioner for an expanded field of view and Gallium Nitride (GaN)-based Transmit/Receive Modules (TRMs), promise superior power efficiency and reduced weight.

This ambitious project is integral to the IAF's broader Super-30 Program, an extensive plan to upgrade 84 of its Su-30MKI aircraft starting in 2026. The entire program is estimated to cost approximately ₹65,000 crore (around \$7.8 billion) and includes a comprehensive overhaul of the

cockpit with modern digital displays and the integration of next-generation weaponry, such as the long-range Astra Mk3 missile. The upgrades are designed to extend the Su-30MKI's service life by three decades, ensuring its continued relevance against modern aerial threats.

The "Development-cum-Production Partner" (DcPP) model is being utilized to invite prominent Indian firms with expertise in defense manufacturing and avionics. Companies like Larsen & Toubro (L&T), Hindustan Aeronautics Limited (HAL), Data Patterns, and Astra Microwave Products Limited are considered potential contenders. The chosen private sector entity will work in tandem with LRDE, HAL, and Bharat Electronics Limited (BEL) to produce initial radar units for flight testing, with mass production slated to begin after 2025. This collaborative approach underscores India's commitment to fostering a robust indigenous defense industrial base.

The seamless integration of the Virupaksha radar, designed for "plug-and-play" functionality within the Su-30MKI's existing nose cone, will minimize structural modifications and ensure compatibility with current AL-31F engines. This crucial development not only reduces reliance on foreign suppliers but also positions India as a significant player in advanced radar technology, with potential export opportunities for friendly nations operating Su-30 variants. The successful realization of this partnership will be a defining moment for India's self-reliance in defense aviation.