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Evolving Landscape Of Indian Avionics And Aerospace Manufacturing: Puneet Kaura, MD & CEO, Samtel Avionics

👤 BW Online Bureau 📅 Jan 22, 2025

Championing indigenous innovation and sustainability in india's aerospace revolution



1. In light of the growing focus on indigenous defense manufacturing, how has Samtel Avionics adapted its R&D strategy to align with the government's push for self-reliance in critical defense technologies?

At Samtel Avionics, we've significantly realigned our R&D strategy to support India's vision of defense self-reliance. Over the past few years, we've increased our R&D investment with a particular focus on developing indigenous solutions for mission-critical avionics systems. Our collaboration with defense research institutions and academic partners has expanded, creating an ecosystem that fosters innovation in critical defense technologies. We're particularly proud of our recent breakthrough in developing locally designed multi-function displays that meet international standards while being completely manufactured in India.

2. As India aims to become a major aerospace manufacturing hub, what key infrastructure and ecosystem developments are needed to support advanced avionics manufacturing capabilities in the country?

The transformation of India into a major aerospace manufacturing hub requires a multi-faceted approach to infrastructure and ecosystem development. From our experience at Samtel, we've identified several critical areas that need attention. First, we need specialized testing and certification facilities that meet international standards - this is crucial for reducing developer cycles and costs.

Second, we need to strengthen the supplier ecosystem, particularly in specialized areas like high-grade materials and precision components. We're actively working with various stakeholders to develop a robust supply chain network.

Additionally, we believe that establishing aerospace-focused industrial clusters with shared infrastructure would significantly boost manufacturing capabilities. Investment in advanced

manufacturing technologies and skilled workforce development programs is also essential to support this transformation.

3. How is the Indian avionics industry preparing to meet the demands of upcoming aircraft programs, particularly in terms of developing next-generation mission computers and integrated modular avionics systems?

At Samtel, we're taking a proactive approach to meet the demands of upcoming aircraft programs. Our development roadmap includes next-generation mission computers with enhanced processing capabilities and improved size, weight, and power characteristics. Our engineering teams are working on advanced software-defined architectures that can adapt to evolving mission requirements. We've also initiated partnerships with international technology providers to ensure our systems meet the latest standards while maintaining indigenous design control. Our focus is on developing systems that can seamlessly integrate with both current and future aircraft platforms.

4. How are avionics manufacturers in India addressing the integration of artificial intelligence and machine learning capabilities in next-generation cockpit displays and systems?

Artificial intelligence and machine learning integration is a key focus area in our product development strategy. We're developing advanced cockpit displays with AI-powered features that enhance pilot situational awareness and decision-making capabilities. Our current projects include developing intelligent display systems that can predict and adapt to pilot preferences, smart threat detection and analysis systems, and AI-enhanced maintenance prediction capabilities. We're also working on machine learning algorithms that can optimize display parameters based on environmental conditions and mission requirements. This integration is being done while ensuring strict compliance with aviation safety standards and maintaining system reliability.

5. Given the increasing emphasis on environmental sustainability in aviation, what innovations are emerging in the field of power-efficient avionics displays and systems, and how is the Indian industry responding to these demands?

Environmental sustainability is increasingly becoming a crucial factor in avionics design. At Samtel, we're exploring new materials and manufacturing processes that reduce environmental impact. Our R&D team is working on innovative cooling solutions that minimize power requirements while maintaining system performance. These initiatives align with global aviation sustainability goals while meeting the stringent performance requirements of modern aircraft.