

THINKING INDIA'S DRONES

FLIGHT CONTROLLERS, AI & AUTONOMY SYSTEMS

Market Analysis, Import Dependence &
Strategic Outlook (2026–2035)



FLIGHT CONTROLLER
TECHNOLOGY



AI & AUTONOMY
SYSTEMS



IMPORT DEPENDENCE
ASSESSMENT



STRATEGIC OUTLOOK
FOR INDIA



GPS-DENIED
NAVIGATION



COLLISION
AVOIDANCE



EW RESILIENCE



SWARM
COORDINATION



EDGE AI
PROCESSING



A TECHADYANT LABS

STRATEGIC INTELLIGENCE REPORT

TECHADYANT LABS

Strategic Intelligence · Free Edition

Who Controls India's Drones?

Flight Controllers, AI Autonomy, and India's Strategic Dependency in the Drone Control Stack

Free condensed edition. The complete report — seventeen chapters, thirty-five figures — is available at labs.techadyant.com.

Edition 1 · June 2026 · Techadyant Labs

Chapter 1: Executive Summary

The strategic picture

India is building drones faster than it can control them. The airframes, motors and even the sensors are increasingly assembled at home, but the component that decides where a drone goes and what it does — the flight controller, and the autonomy software layered on top of it — remains substantially foreign, and predominantly Chinese. This is a national-security exposure and a domestic market opportunity at the same time.

Three conclusions follow. The dependency is structural, sitting in the processor and sensor silicon India does not yet fabricate, so it cannot be closed by assembly localisation alone. The policy and procurement environment has shifted decisively: a new INR 2,000 crore production-linked incentive (PLI) scheme conditions market participation on 40% localisation by FY2027-28, and post-Operation Sindoor defence demand now prioritises electronic-warfare-resilient autonomy. And the combination converts the exposure into a market we size at USD 800 million to USD 1.2 billion by 2035, with the highest-value segments in autonomy software and flight-control infrastructure rather than in the drones themselves.



India drone flight controller and AI market at a glance

Five findings that matter

The flight-control layer is the binding dependency. Official data placed before the Lok Sabha in April 2025 record 39% of flight controllers in DGCA-certified small drones as Chinese-sourced; across nano, micro, uncertified, aftermarket and complete-import categories the effective figure is 70-80%, and processors and MEMS inertial sensors are roughly 100% imported. Localisation that stops at PCB assembly will plateau short of strategic independence.

Policy has made localisation a condition of market access. The INR 2,000 crore scheme names flight controllers, navigation and communication modules and mandates 40% domestic value addition by FY2027-28.

Defence demand is the primary growth engine. Defence-technology funding reached USD 432 million cumulatively since 2014, of which USD 307 million was deployed in 2024-25 alone; 71% of the cumulative total (USD 305 million) has flowed to drone and counter-drone ventures. Operation Sindoor made GPS-denied navigation and electronic-warfare resilience the highest-priority capabilities.

India's software strength is real but narrower than it appears: 89% of defence-technology startups claim AI integration, yet certified, operationally validated autonomy remains scarce, and it runs on imported edge-AI hardware.

The opportunity is larger than the headline because the dependency is: a 70–80% effective import share across a market growing 18–25% a year defines a domestic substitution opportunity above USD 500 million in addressable annual value by the early 2030s.

What we recommend

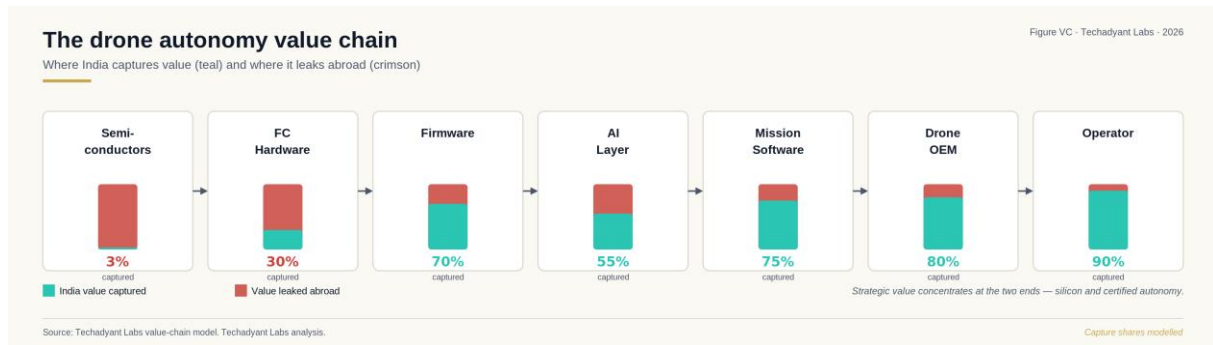
Recommendations at a glance

#	Recommendation	Lead owner	Indicative cost	Timeline	Expected impact (modelled)
1	National Drone Control-Stack Mission	MeitY + DRDO	INR 500 crore	24 months	FC import dependence ~70% → ~45% by 2030
2	EW-Resilient Autonomy Programme (GPS-denied)	MoD / DRDO + iDEX	INR 300 crore	18–36 months	2–3 certified GPS-denied stacks by 2028
3	Processor & MEMS strategy (RISC-V FC SoC); exempt processors from the 40% count until capacity exists	MeitY / ISM	INR 1,000 crore	60 months	Pilot indigenous FC processor by 2032
4	Flight-controller certification fast-track	DGCA + QCI / STQC	INR 100 crore	12 months	Halve certification time and cost
5	Condition procurement on domestic-value pass-through	MoD / DPIIT	Low (policy)	12 months	Anchor private localisation investment

Chapter 2: India's Strategic Vulnerability

Where value and exposure sit

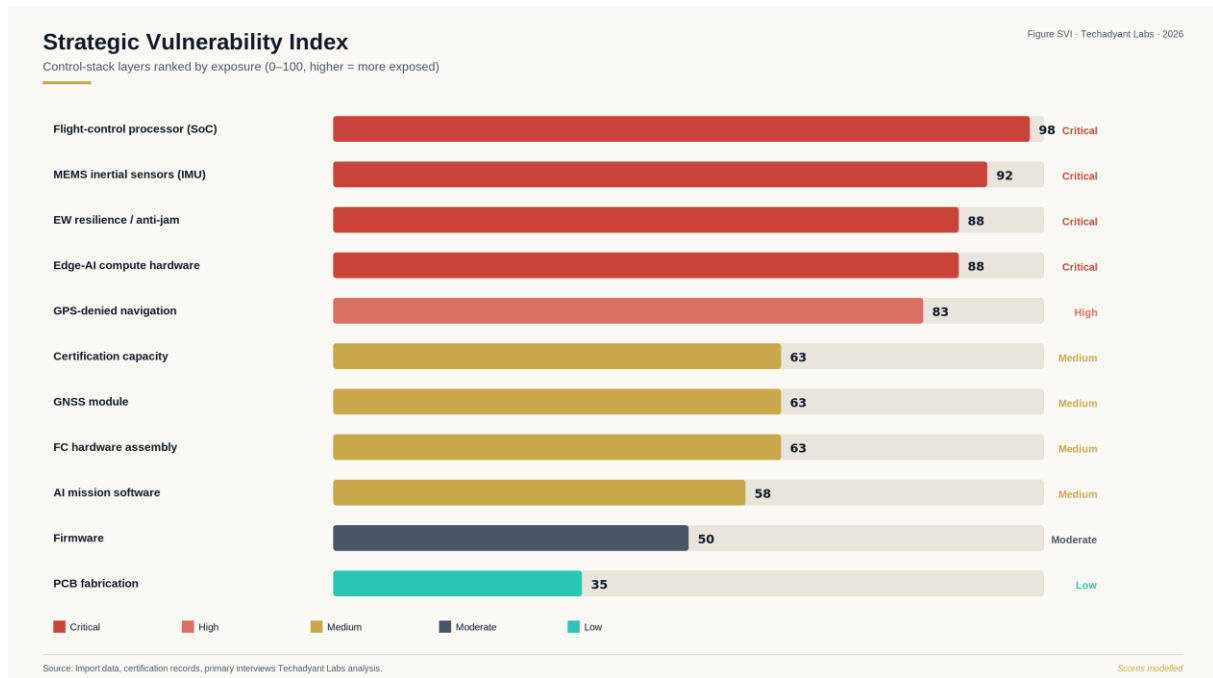
A drone's control stack is layered, and value and vulnerability both concentrate at the ends — in the silicon at the base and the certified, EW-resilient autonomy at the top. India captures value in assembly, firmware adaptation and mission software, and leaks it in the two layers that matter most strategically.



The Drone Autonomy Value Chain — where India captures and leaks value

The Strategic Vulnerability Index

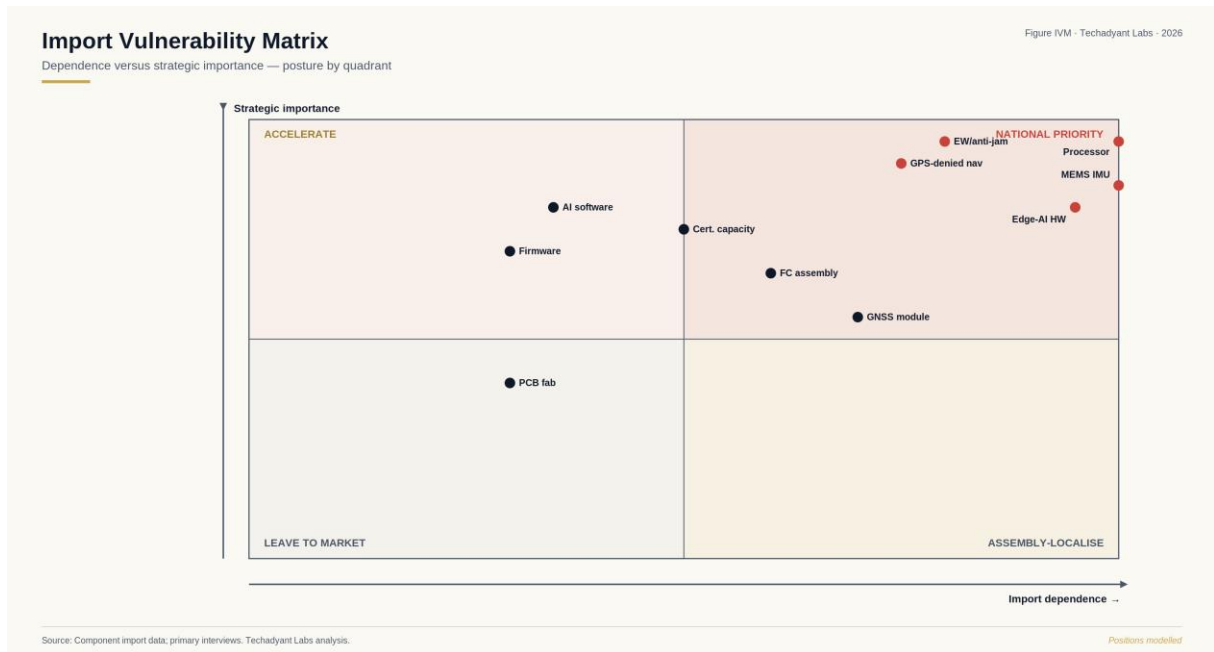
Scoring each layer on import dependence and strategic importance produces a composite index. The four Critical-tier layers are all silicon (processor, MEMS, edge-AI) or the EW resilience that depends on it; the layers where India is strong — firmware, mission software — sit lower. A localisation strategy optimised for the easy layers raises the headline percentage while leaving every Critical exposure intact.



Strategic Vulnerability Index — control-stack layers ranked by exposure

The index resolves into five concrete exposures, in descending severity: the processor (no domestic fabrication; a RISC-V flight-control SoC is a five-to-eight-year build), MEMS inertial

sensors (imported in full), electronic-warfare resilience (the exposure Operation Sindoor made urgent), edge-AI hardware (which constrains the autonomy India could otherwise build), and certification capacity (institutional rather than technological).

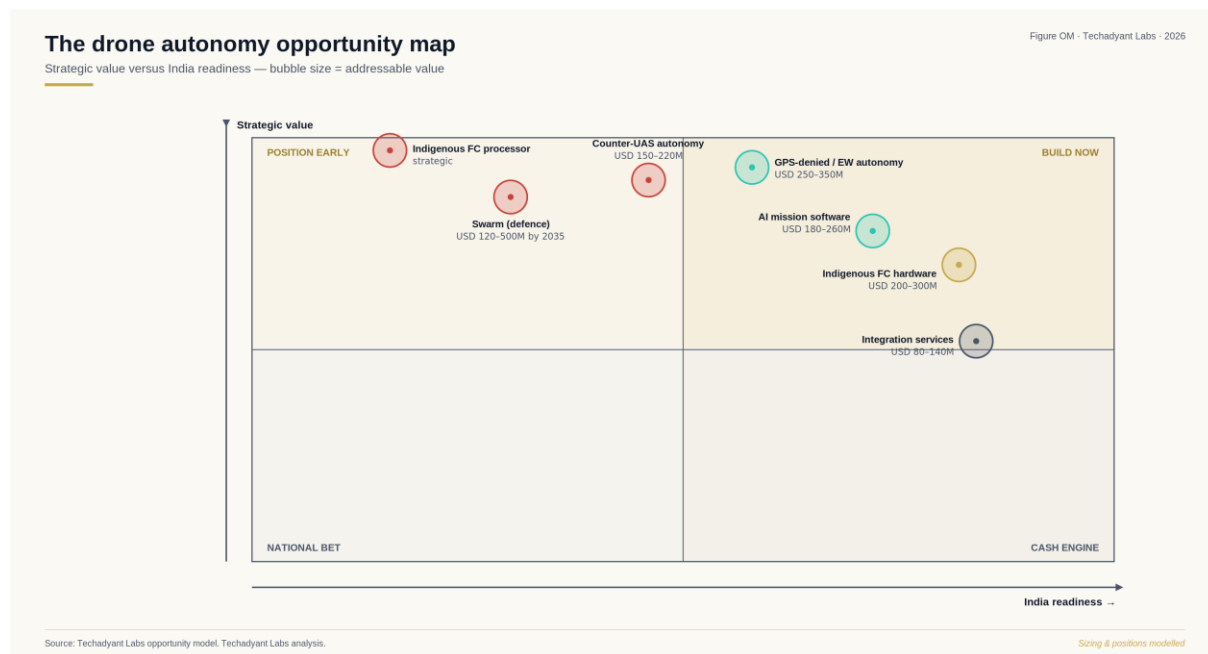


Import Vulnerability Matrix — dependence versus strategic importance

Chapter 3: The Opportunity

From market sizing to opportunity sizing

Market sizing says how large the market is; opportunity sizing says where, within it, capital earns a strategic and financial return. The fastest-growing, highest-margin and most defensible segments are precisely those where India is currently weakest.



The Drone Autonomy Opportunity Map — strategic value versus India readiness

Opportunity sizing by segment (addressable annual value, early 2030s) [modelled]

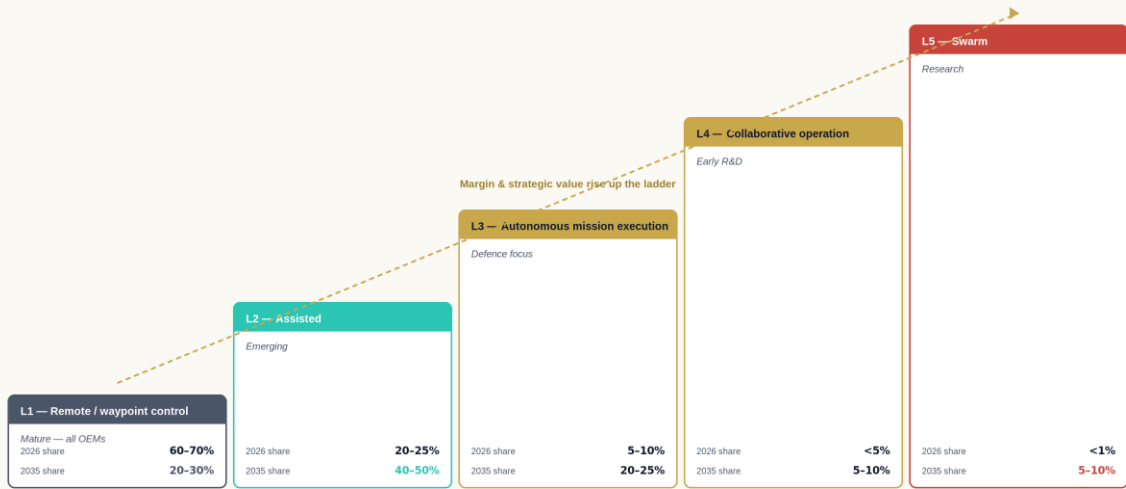
Segment	Addressable value	Posture
GPS-denied navigation & EW autonomy	USD 250–350M	Build now (defence-led)
AI mission / autonomy software	USD 180–260M	Build now
Indigenous flight-control hardware	USD 200–300M	Build now
Counter-UAS autonomy	USD 150–220M	Position early
FC assembly & integration services	USD 80–140M	Cash engine
Swarm intelligence (defence)	USD 120–500M by 2035	Long-horizon bet

Opportunity migrates up the autonomy ladder as the market matures — toward the higher levels where margin and defensibility concentrate, and where the imported edge-AI and EW dependencies currently bind. Maturity intensifies the dependency rather than relieving it.

India drone autonomy maturity model

Figure MM - Techadyant Labs - 2026

Five levels, with value migrating up the ladder



Each step up the ladder raises the premium on edge-AI inference and EW-resilient autonomy — India's Critical-tier dependencies.

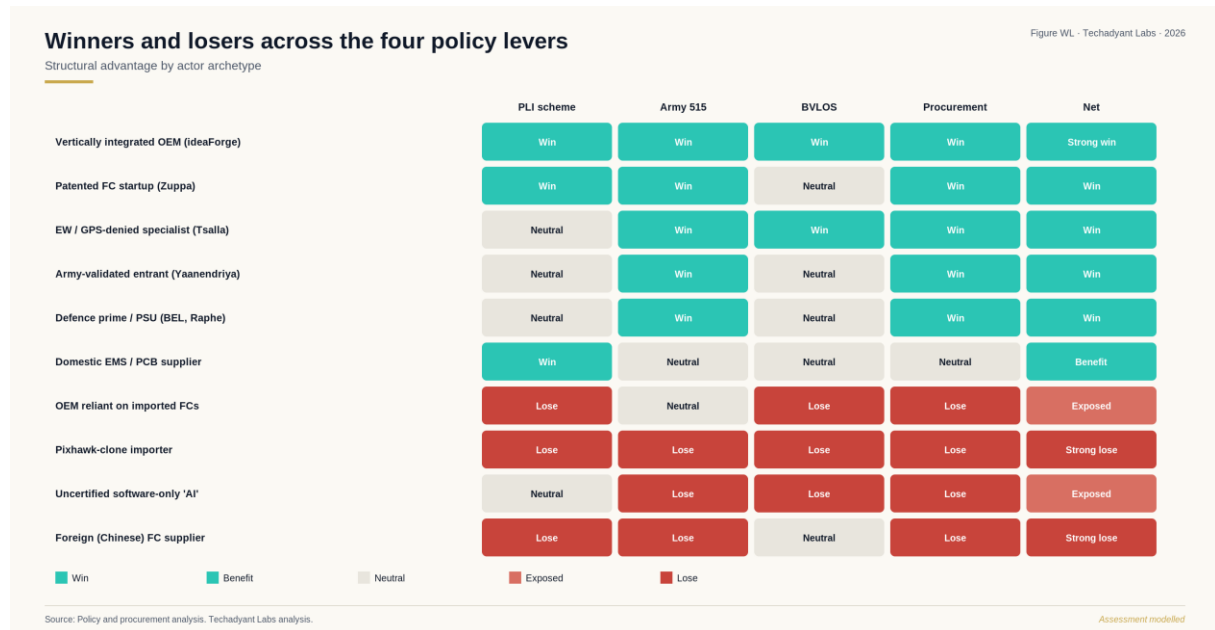
Source: Industry interviews Techadyant Labs analysis.

Shares modelled

India Drone Autonomy Maturity Model — five levels, with value migration

Chapter 4: Winners and Losers

Four levers — the PLI scheme, the Army's 515 Base Workshop validation model, BVLOS commercialisation and indigenous-content procurement preference — are about to redistribute value. The clear winners are vertically integrated indigenous players (ideaForge, listed since 2023), patented flight-control startups (Zuppa), EW and GPS-denied specialists (Tsalla), Army-validated entrants (Yaanendriya) and defence primes (BEL, Raphe mPhibr). The exposed are OEMs that rely on imported boards without localising, Pixhawk-clone importers, uncertified software-only claimants and Chinese suppliers.



Winners and losers across the four policy levers

Beneath the actor-by-actor picture lies one structural shift: capital is concentrating at the platform layer while the flight-control layer — where strategic value is highest — is starved. The firms and funds that back the control infrastructure rather than the airframes will be positioned where both strategic value and policy tailwinds are strongest.

Chapter 5: What the Full Report Adds

This free edition gives you the thesis, the import-dependence finding, the vulnerability stack, the opportunity map and the winners-and-losers picture. The complete edition — **seventeen chapters and thirty-five figures** — adds the full Strategic Vulnerability Index across the control stack, the costed five-point recommendation programme with owners and timelines, an evidence-hierarchy methodology, and twelve deep-dive chapters: flight-controller technology, AI and autonomy systems, market sizing and segmentation to 2035, the import-dependence and PLI analysis, the regulatory and BVLOS landscape, the defence-versus-commercial split, the competitive landscape and company profiles, investment and funding, and the technology gaps and roadmap to 2035.

The full report is available at labs.techadyant.com.