Security Nexus Perspective

FROM FACTORY TO FRONTLINE
Why U.S.–India Drone Collaboration Could Shape the Next Era of Deterrence

By Shyam Tekwani - 24 Apr 2025

Abstract:

Building on the argument in *Deterrence Needs a Factory*, this article makes the case for the United States and India to co-develop the mass-capable, attritable defense systems that modern deterrence demands in a rapidly evolving Indo-Pacific security landscape. It argues that traditional prestige platforms are too slow, too costly, and too exposed to form the backbone of modern deterrence. Drawing on battlefield lessons from Ukraine, the piece outlines the promise of unmanned aerial vehicles, electronic warfare units, and mass-manufactured systems. It identifies bureaucratic and cultural hurdles in India's defense ecosystem while offering a path forward anchored in modular design, mineral security, and trusted supply chains.

In Joseph Conrad's *The Secret Agent*, the machinery of destruction is not grand, but banal—bundled in brown-paper parcels, stitched into everyday life. Its quiet menace is what gives it power. The future of deterrence in the Indo-Pacific may follow a similar path. It will not be built one aircraft carrier or stealth fighter at a time. It will arrive in bulk: in drones small enough to launch from a backpack, sensors buried in coral atolls, and systems cheap enough to lose, yet smart enough to matter.

As Washington repositions its military footprint across the Indo-Pacific, a subtler shift is taking place—one not marked by new alliances or major weapons deals, but by a redefinition of what credible deterrence looks like. The future of deterrence might not arrive on the deck of a destroyer or from the belly of a stealth bomber. Instead, it could come inexpensive, agile, and scaled—in the form of drones and other attritable systems.

This is a strategic pivot. It's a reassessment of how deterrence operates in contested, congested, and complex theaters like the South China Sea, Taiwan Strait, or the Himalayan frontier. Traditional platforms—capital ships, fighter jets, long-range bombers—remain potent, but they're also slow to build, expensive to lose, and increasingly vulnerable to swarm tactics and electronic warfare.

Enter the world of attritable systems: unmanned aerial vehicles, electronic jammers, loitering munitions, and micro-satellites. These platforms are built for mass, not magnificence. Their job isn't to dominate but to deny, degrade, and disrupt. They confuse adversaries, complicate planning cycles, and create a persistent fog of uncertainty. Most importantly, they signal readiness without triggering escalation.

The war in Ukraine has only accelerated this shift. Kyiv's creative use of low-cost drones—from surveillance quadcopters to explosive-laden FPVs—has shown how such systems can impose outsized costs on a conventionally superior adversary. Analysts estimate that Ukraine burns through nearly a million drones annually. This isn't wasteful. It's strategic attrition by design.

India and the United States, for all their grand declarations, are yet to translate shared strategy into scalable systems. Frameworks like INDUS-X, iCET, and the Defense Industrial Cooperation Roadmap have promise but remain trapped in pilot projects and photo-ops. What's needed is action: minimum viable products that get fielded, tested, and refined.

Consider a jointly developed Intelligence, Surveillance, and Reconnaissance (ISR) drone for maritime patrol and border monitoring. Cheap enough to deploy in numbers. Modular enough to be reconfigured across missions. And visible enough to signal intent. The point isn't just deterrence. It's presence. Persistence. Pressure.

China isn't waiting. Its gray zone tactics in the South China Sea and beyond are growing bolder, from swarms of fishing vessels doubling as paramilitary forces to increasingly assertive aerial patrols. India, too, faces similar challenges in the high Himalayas. Attritable systems - particularly UAVs and compact electronic warfare units—could provide a flexible buffer: hard to target, easy to replace, and capable of restoring domain awareness in denied environments.

This shift is not merely technical - it is deeply strategic. Attritable systems are well-suited to the Indo-Pacific because they adapt to geography as much as to geopolitics. Narrow straits, dense

archipelagos, contested reefs, and invisible frontlines demand flexibility, responsiveness, and volume. These systems can be prepositioned, dispersed, or surged. And when paired with real-time data flows and agile command structures, they shift from passive presence to active defense.

Attritable systems are also more politically sustainable. Their use carries lower escalation risks, avoids public backlash over human casualties, and allows for repeated calibration. A destroyed drone invites analysis, not outrage. A sunken destroyer could upend peace. This distinction matters in a region where public opinion and political signaling are often more volatile than the weapons themselves.

But turning this concept into reality demands more than defense communiqués. Both Washington and New Delhi face institutional inertia. U.S. defense primes have little incentive to produce low-margin systems when billion-dollar programs remain lucrative. India's defense bureaucracy, meanwhile, is built to avoid risk, not embrace it. New Delhi's political appetite for high-volume, high-turnover systems may also be limited—at least in the short term. Senior officials may view such platforms as lacking in prestige or symbolic value, especially when compared to aircraft carriers or fighter jets that command attention on parade grounds and diplomatic visits.

There's also a tendency to equate mass with vulnerability, rather than resilience—an instinct that runs counter to the logic of attritable deterrence. Even within the military, enthusiasm may be uneven: while tactical units may welcome ISR drones and [loitering munitions](#), the higher echelons often default to traditional measures of capability. Without a shift in strategic narrative, the political class may hesitate to allocate meaningful resources to what they see as second-tier systems. The strategic culture still privileges prestige platforms over scalable assets, and concerns about export control regimes, intellectual property, and sovereign capability could dampen enthusiasm for deeply integrated co-production. Still, momentum is building.

India's emphasis on Atmanirbhar Bharat (self-reliance) has increasingly prioritized indigenous production not just for prestige platforms, but also for unmanned and dual-use systems. The success of [Indian drone startups](#), interest from private defense manufacturers, and a younger cohort of military leaders attuned to emerging tech suggest the potential for a cultural shift. If co-production frameworks respect sovereignty while offering access to cutting-edge systems and assured procurement, the hesitations may well give way to experimentation—and eventually, adoption at scale.

Yet there are cracks in the old walls. India's drone sector - led by companies like ideaForge and Tonbo Imaging - is [growing rapidly](#). With the right incentives, U.S. technology transfer, and shared IP arrangements, India could become a key testbed for unmanned innovation. American firms, in turn, gain access to a low-cost engineering base and rising political goodwill.

A shared vision of modularity could also unify industrial efforts. Designing systems that can be adapted across terrains and missions—from coastal reconnaissance to electronic decoys to last-mile logistics—ensures scale without redundancy. Each deployment offers not just a tactical edge but also feedback to inform iterative upgrades.

There's also room to rethink export strategy. Rather than gatekeeping technology, co-developed platforms can be marketed to third countries in Southeast Asia and Africa that face similar

surveillance and deterrence needs. This creates both security partnerships and economic spillovers. The deterrence dividend, in this model, is both military and diplomatic.

One avenue worth pursuing is the integration of supply chains across the mineral-to-platform spectrum. Rare earth elements, lithium, and cobalt are central to drone propulsion, batteries, and sensors. China currently dominates processing. A trilateral pact between the U.S., India, and Australia could rewire this dependence: mine in Australia, process in India, build for the Indo-Pacific.

Such an industrial triangle would do more than spread risk. It would anchor deterrence in production timelines and metrics: six months to process, twelve months to prototype, eighteen months to deploy. These are deadlines that matter more than declarations.

A mass-capable defense architecture will require the same creativity and coordination as legacy platforms—but with more speed and less overhead. Strategic autonomy does not preclude cooperation. Instead, shared production creates institutional alignment, economic benefits, and operational cohesion. In a region where coercion is constant but conflict must be avoided, such cohesion is its own form of deterrence.

Equally important is the psychological effect of these systems. Constant surveillance, unpredictable presence, and the sheer volume of distributed assets create a mental strain on adversaries. They must now plan not for a handful of high-value targets, but for a swarm of smaller, semi-autonomous platforms that can appear anywhere and strike anytime. This disperses the adversary's focus, spreads their resources thin, and opens windows of opportunity for counteraction.

This mental burden, combined with the physical cost of countering attritable systems, creates a new form of strategic deterrence—one not reliant on fear of annihilation but built on the fatigue of attrition. A thousand cuts, not a single blow.

To move from concept to execution, the United States and India must prioritize a set of tightly focused, mutually reinforcing initiatives. First, creating a Mass Systems Corridor that links defense startups in both countries with pooled venture capital and expedited licensing could accelerate the development and deployment of low-cost, high-volume systems. These startups—often more agile than legacy contractors—can innovate at speed if given access to capital, procurement guarantees, and a streamlined regulatory environment.

Second, deterrence must begin with raw materials. A Minerals-to-Platforms Initiative would integrate supply chains from the ground up—treating access to rare earths, lithium, and cobalt as integral to national security. Under such an initiative, the U.S., India, and Australia could build a cooperative framework: mining in Australia, processing in India, and manufacturing platforms for regional deployment. This would reduce dependence on adversarial sources and embed deterrence into the industrial ecosystem.

Third, to spark innovation and de-risk experimentation, both countries could launch a Bilateral Design Challenge focused on [modular ISR drones](). Guaranteed procurement for the most promising designs would send a clear signal to innovators: creativity will be rewarded with contracts, not red tape. Such challenges would also surface local solutions adapted to the region's geographic and operational complexities.

Fourth, these systems must not remain confined to the lab. Live testing during joint exercises like [Malabar](#) and [Yudh Abhyas](#) would offer critical feedback loops from real operators in real environments. This step is vital for refining performance, integrating user experience, and closing the gap between innovation and field utility.

Finally, INDUS-X must evolve beyond its current form into a dual-use tech bridge encompassing ISR, cyber, and electronic warfare. Rather than remaining a convening platform, it should serve as a backbone for joint R&D, knowledge transfer, and scalable co-production. A robust INDUS-X would help institutionalize the shared technological foundation needed for tomorrow's distributed deterrence.

Critics might scoff at the idea of replacing destroyers with drones. But this isn't replacement. It's reinforcement. The logic is not either-or, but both-and. Attritable systems allow states to stretch their presence without overstretching budgets or provoking escalation.

As strategist Thomas Schelling once argued, deterrence is a mix of capability and credibility. It's not just what you have, but what you're willing to use—and how often. Drones do that job better. They fly, fall, and fly again.

Today, co-production isn't a sideshow. It's the central task. It turns partners into producers, and producers into stakeholders. It institutionalizes trust, shares risk, and builds doctrine from the ground up.

Conrad, ever the realist, warned, "the mind of man is capable of anything—because everything is in it, all the past as well as all the future." If so, the future of deterrence won't be forged in steel alone. It will be assembled—in batches. Cheap, fast, and many.