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REGULATING THE SKIES: A CRITICAL ANALYSIS OF INDIA'S DRAFT CIVIL DRONE (PROMOTION AND REGULATION) BILL, 2025

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ABSTRACT

India's unmanned aircraft systems (UAS) sector has undergone a remarkable transformation since the liberalisation effected by the Drone Rules, 2021. That framework reduced compliance barriers, decriminalised many violations, and catalysed a surge in drone-related investment, manufacturing, and applications across agriculture, logistics, infrastructure, and defence. In September 2025, the Ministry of Civil Aviation released the Draft Civil Drone (Promotion and Regulation) Bill, 2025 a proposed standalone statute that would displace the existing rules-based framework with a comprehensive primary legislation. The Bill has attracted near-universal critical attention from industry bodies, technology associations, legal scholars, and academic institutions. This paper critically examines the Bill's legislative architecture, its key provisions on registration, type certification, insurance, airspace management, penalties, and economic regulation, and contrasts them with the extant Drone Rules, 2021. It further situates the Bill within India's broader regulatory trajectory, evaluates the concerns articulated by stakeholders including NASSCOM and the Drone Federation of India, compares the Indian approach with emerging international frameworks from the United States, the European Union, the United Kingdom, and Australia, and concludes with observations on the path forward.

I. Introduction

On September 16, 2025, the Ministry of Civil Aviation (MoCA) of the Government of India released the Draft Civil Drone (Promotion and Regulation) Bill, 2025 (hereinafter, the 'Bill' or 'Draft Bill') for public consultation, inviting stakeholder comments by September 30, 2025 a period subsequently extended to October 15, 2025.¹ The Bill proposes a standalone primary

¹Ministry of Civil Aviation, Government of India, Draft Civil Drone (Promotion and Regulation) Bill, 2025,

legislation specifically for civil Unmanned Aircraft Systems (UAS) with a maximum all-up weight below 500 kilograms. Upon enactment, it is intended to serve as the primary legislation for UAS operations in India, with new subordinate rules to be notified under it, which will in turn replace the existing Drone Rules, 2021 (hereinafter, '2021 Rules').²

Currently, drone operations in India are governed under the 2021 Rules, which were originally issued as subordinate legislation under the colonial-era Aircraft Act, 1934,³ and are now subsumed under its successor, the Bharatiya Vayuyan Adhiniyam, 2024 (hereinafter, 'Vayuyan Act').⁴ The 2021 Rules were widely lauded as a landmark liberalisation measure, catalysing India's ambition to become a global drone hub by 2030. The Draft Bill therefore represents a significant regulatory inflection point transitioning drone governance from a delegated, rules-based framework to a standalone statutory regime.⁵

The Bill's release immediately triggered significant controversy. NASSCOM called for the Bill to be withdrawn in its entirety.⁶ The Drone Federation of India (DFI) characterised it as a rollback of reforms. Legal experts from major law firms flagged concerns about over-criminalisation, regulatory uncertainty stemming from excessive delegated legislation, the absence of research and development (R&D) exemptions, and the potential for economic regulation of drone services.⁷ Academics from IITs and IISc raised concerns about the chilling effect on innovation.

This paper critically analyses the Draft Bill, beginning with a survey of India's drone regulatory history and the economic context of the sector, followed by a detailed examination of the Bill's provisions, a comparative analysis with both the 2021 Rules and select international frameworks, a presentation of industry and academic critiques, and finally, observations on the path forward for India's drone governance.

released for public consultation on September 16, 2025, available at <https://www.civilaviation.gov.in>.

²The Drone Rules, 2021, published vide G.S.R. 201(E), Ministry of Civil Aviation, Government of India (August 25, 2021).

³Aircraft Act, 1934 (Act No. 22 of 1934), Government of India.

⁴Bharatiya Vayuyan Adhiniyam, 2024 (Act No. 16 of 2024), Government of India.

⁵Ikigai Law, 'Summary: The Civil Drone (Promotion and Regulation) Bill, 2025' (September 25, 2025), available at <https://www.ikigailaw.com>.

⁶Mondaq, 'Summary: The Civil Drone (Promotion And Regulation) Bill, 2025 – Aviation – India' (September 29, 2025), available at <https://www.mondaq.com>.

⁷Cyril Amarchand Mangaldas (CAM), 'Draft Civil Drone (Promotion and Regulation) Bill, 2025: Regulation Curtailing Industry Growth?' India Corporate Law Blog (October 8, 2025), available at <https://corporate.cyrilamarchandblogs.com>.

II. India's Drone Regulatory History: From Ban to Boom

India's approach to drone regulation has evolved dramatically over the past decade. As recently as 2014, the Directorate General of Civil Aviation (DGCA) imposed a blanket ban on civilian drone operations, reflecting the government's then-conservative stance toward unmanned aerial vehicles, which were perceived primarily as threats to manned aircraft and national security.⁸ This prohibition stifled even legitimate commercial and academic use of drones.

The first substantive framework for drone operations emerged in 2018 when the DGCA issued Civil Aviation Requirements (CAR) for remotely piloted aircraft systems.⁹ This framework introduced the concept of the Digital Sky platform and instituted the 'No Permission, No Takeoff' (NPNT) requirement a digital clearance mechanism mandating that each flight receive prior approval via the platform before the drone's motors would unlock.¹⁰ The 2018 regime was widely criticised for being cumbersome, with approvals requiring extensive paperwork and involving multiple government agencies.

The transformation came in March 2021 with the publication of the Unmanned Aircraft System Rules, 2021 (which became the Drone Rules, 2021 on August 25, 2021, consolidating and superseding the earlier UAS Rules).¹¹ These rules replaced the fragmented, paperwork-intensive regime with a single, risk-based framework. The number of government approvals required was reduced from 25 forms to just 5.¹² The rules introduced a weight-based classification of UAS into Nano (under 250g), Micro (250g to 2kg), Small (2kg to 25kg), Medium (25kg to 150kg), and Large (over 150kg) categories,¹³ with compliance obligations proportionate to the risk posed by each category. The Digital Sky platform was operationalised as a single-window system for drone registration, airspace zoning, flight permissions, and compliance monitoring.

⁸NASSCOM, 'The Civil Drone (Promotion and Regulation) Bill, 2025: A Closer Look' (December 4, 2025), available at <https://community.nasscom.in>.

⁹DGCA, 'Civil Aviation Requirements, Section 3 Series X, Part I – Operation of Civil Remotely Piloted Aircraft System (RPAS)' (August 27, 2018).

¹⁰White & Brief, 'Drone Regulatory Developments in India: Insights for Decision-Makers' (October 13, 2025), available at <https://whiteandbrief.com>.

¹¹ANRA Technologies, 'Indian Government Publishes New Drone Rules and Goes Live with Digital Sky' (March 18, 2021), available at <https://www.anratechnologies.com>.

¹²Insidefpv.com, 'Decoding the New Drone Bill' (2025): Under the 2021 Drone Rules, approval forms came down from 25 to just 5.

¹³Drone Rules, 2021, Rule 3 – Definitions, classifying UAS into Nano, Micro, Small, Medium, and Large categories.

Importantly, the 2021 Rules decriminalised many violations by replacing imprisonment penalties with monetary fines, and included a significant research and development exemption under Rule 42, which permitted operators conducting R&D or prototype testing to fly without requiring a type certificate, unique identification number (UIN), prior permission, or a remote pilot licence.¹⁴ Approximately 90% of Indian airspace was designated as 'green zones' where drones could operate freely up to 400 feet above ground level without prior permission.¹⁵

Subsequent amendments further liberalised the framework. The Drone (Amendment) Rules, 2022 empowered authorised training schools to directly issue Remote Pilot Certificates, reducing the role of the DGCA in day-to-day certification,¹⁶ while the Drone (Amendment) Rules, 2023 permitted night operations and eased restrictions on importing drone components.¹⁷ The Yellow Zone radius around airports was also reduced in August 2022, expanding usable green zones for commercial operators.

The Vayuyan Act, enacted in 2024 as a replacement for the Aircraft Act, 1934, provided the updated overarching statutory framework for all civil aviation regulation in India, including UAS, and came into force in January 2025.¹⁸ UAS weighing above 500 kg continued to fall under the Vayuyan Act's purview, while civil drones below this threshold remained governed under the 2021 Rules.

III. The Economic and Industrial Backdrop

The liberalised policy environment created by the 2021 Rules provided a powerful stimulus to India's fledgling drone industry. By January 2025, India had 29,501 registered drones, with Delhi (4,882), Tamil Nadu, Maharashtra, and Haryana leading in registrations.¹⁹ India's drone market was valued at approximately USD 1,150 million in 2024, with projections indicating growth at a CAGR of 20.50% through 2033.²⁰

¹⁴Drone Rules, 2021, Rule 42 (Research and Development exemptions).

¹⁵Kotak Securities, 'India's Drone Industry 2025: Market Growth, Key Players & Future Trends', available at <https://www.kotaksecurities.com>.

¹⁶Drone (Amendment) Rules, 2022, published February 11, 2022, empowering authorised drone training schools to issue Remote Pilot Certificates.

¹⁷Drone (Amendment) Rules, 2023, permitting night operations and easing restrictions on importing drone components.

¹⁸Maheshwari & Co., 'Drone Law in India: Legal Framework and Regulatory Overview' (Mondaq, October 6, 2025), available at <https://www.mondaq.com>.

¹⁹Insidefpv.com, 'Indian Drone Market 2025', citing as of January 29, 2025, India had 29,501 registered drones.

²⁰Univdatos, 'India Drones Market Size, Share & Forecast to 2033', reporting a CAGR of 20.50% and market growth from USD 1150 million (2024).

According to a NITI Aayog report, the UAV market is projected to reach USD 15 billion by 2030, with the sector expected to grow at a CAGR of 35% between 2025 and 2030.²¹ India has approximately 515 drone-related companies, of which 263 focus on manufacturing components such as batteries, propellers, and software.²² The defence segment, which is the largest driver of drone adoption, had a military drone market value of USD 1,527.1 million in 2024, expected to reach USD 4,082.1 million by 2030 at a CAGR of 17.9%.

Agriculture constitutes the dominant application segment, accounting for approximately 35% of the market, driven by adoption in pesticide spraying, yield estimation, and crop health monitoring.²³ Government schemes such as Kisan Drone offer subsidies of up to 75% (capped at Rs. 7.5 lakh) for crop-spraying drones, having spurred adoption across over 5 million hectares. The Namu Drone Didi scheme further seeks to empower women-led Self-Help Groups through agricultural drone services.²⁴

The government has supplemented the policy framework with industrial incentives. The Production-Linked Incentive (PLI) scheme has allocated Rs. 120 crore to drone manufacturers, offering 20% incentives on value addition, with Union Budget 2025-26 increasing spending under the PLI from INR 33 crore to INR 57 crore.²⁵²⁶ In 2022, the government also restricted the import of foreign drones to promote local manufacturing, and the Drone Shakti initiative was launched to facilitate the use of drones across critical sectors.²⁷ In another supportive measure, the GST Council's 56th meeting on September 3, 2025, reduced the GST on unmanned aircraft from 18%/28% to a uniform 5%.²⁸

Despite these gains, structural challenges persist. India remains heavily import-dependent: 39%

²¹NITI Aayog, 'Drone Shakti – Unlocking the Potential of Drone Technology in India' (2022). The UAV market is projected to reach USD 15 billion by 2030.

²²Insidefpv.com, 'Indian Drone Market 2025: Size, Growth & Global Positioning' (September 15, 2025), available at <https://insidefpv.com>.

²³IMARC Group, 'India Drones Market Size, Trends, Share, Growth, Industry Outlook and Analysis Report 2025-2033' (September 2025).

²⁴Press Information Bureau, Government of India, 'Drone Economy Takes Flight', available at <https://www.pib.gov.in>.

²⁵Ministry of Civil Aviation, Government of India, Production-Linked Incentive (PLI) Scheme for Drones and Drone Components (2021).

²⁶FICCI Blog, 'Union Budget 2025-26: A Catalyst for India's Drone Industry' (2025), available at <https://blog.ficci.com>.

²⁷India Strategic, 'Unlocking Market Potential of Drones through Policy and Innovation' (April 19, 2025), available at <https://www.indiastrategic.in>.

²⁸GST Council, 56th Meeting (September 3, 2025): GST on unmanned aircraft reduced from 18%/28% to a uniform 5% rate.

of flight controllers for standard drones and 90% for small drones are imported, primarily from China, and rare earth magnets essential for drone motors are 100% imported. The SVAMITVA scheme has used drones in surveys across 310,388 villages by end-2024, illustrating the government's own reliance on drone technology for developmental programmes a dependence that makes the regulatory environment for the sector a matter of direct public interest.

IV. Key Provisions of the Draft Bill: A Detailed Analysis

A. Scope, Applicability, and Legislative Architecture

The Draft Bill marks a paradigm shift in the structure of India's drone governance from a rules-based, delegated legislative framework to a standalone primary statute.²⁹ This structural change carries significant implications: all future policymaking, rule-making, and regulatory action for drones will flow from this new statute, with Parliamentary oversight now required for any changes to the primary legislation, though subordinate rules can still be amended with greater flexibility.

The Bill broadly applies to Indian and foreign citizens, as well as any person or entity involved in any stage of the drone ecosystem in India from design and manufacturing to importing, trading, owning, operating, and maintaining drones.³⁰ It also introduces extra-territorial applicability: all UAS registered in India fall under the Bill's purview regardless of where they operate globally.³¹ The 2021 Rules did not expressly provide for extra-territorial applicability. The Bill explicitly excludes UAS used by the Indian Army and central armed police forces but continues to regulate state police drone operations.³²

The Bill contains a savings clause under Section 51, which explicitly repeals the Drone Rules, 2021, Drone (Amendment) Rules, 2022, and Drone (Amendment) Rules, 2023,³³ but provides that existing registrations, certificates, and approvals granted under the 2021 Rules shall continue until new rules are notified. This ensures regulatory continuity, though it creates a period of legal uncertainty since operators will not know when new obligations such as insurance, revised certification standards, or economic regulation will come into effect.

²⁹Draft Civil Drone (Promotion and Regulation) Bill, 2025, Preamble and Section 1.

³⁰Draft Civil Drone (Promotion and Regulation) Bill, 2025, Section 2 (Applicability).

³¹Draft Civil Drone (Promotion and Regulation) Bill, 2025, extra-territorial applicability for drones registered in India.

³²MediaNama, 'Explained – The Draft Civil Drone Bill, 2025' (October 15, 2025), available at <https://www.medianama.com>.

³³Draft Civil Drone (Promotion and Regulation) Bill, 2025, Section 51 (Repeal and Savings provision).

B. Registration and the Unique Identification Number (UIN)

Section 6 of the Draft Bill mandates that no person shall own, operate, sell, or transfer any unmanned aircraft system unless it has been registered and assigned a Unique Identification Number (UIN) by the DGCA.³⁴ Under the 2021 Rules, UIN registration was similarly mandatory, though with certain exemptions for nano drones and R&D activities. The Draft Bill extends the registration requirement upstream to sellers and purchasers meaning that even a toy drone must be registered before it can be sold. This shifts compliance obligations from operators to manufacturers and retailers, potentially creating barriers for small businesses in the consumer drone market.

C. Type Certification

Section 7 of the Bill states that no UAS may be manufactured, assembled, sold, transferred, or operated without a DGCA-issued type certificate, unless explicitly exempted. This represents a significant departure from the 2021 Rules, which did not condition the act of manufacturing itself on type certification. Under the prior framework, manufacturers were not required to obtain a type certificate merely to manufacture; carve-outs existed for nano drones, model remotely piloted aircraft systems, and R&D prototypes.³⁵

The expansion of type certification to cover assembly, sale, and import carries serious implications for companies' capacity to design and innovate. Manufacturers will need to strengthen supply chain oversight, ensure compliance for e-commerce platforms, and assume direct liability in case of breaches. The NASSCOM analysis notes that this marks a sharp departure from the 2021 Rules, which imposed general compliance obligations but did not condition the act of manufacturing on certification itself.³⁶

D. Remote Pilot Training Certificate

Section 8(1) of the Draft Bill mandates a Remote Pilot Training Certificate for drone operation.³⁷ Critics note that the blanket application of this requirement extending even to micro-drone users and students performing academic exercises is disproportionate. Under the 2021 Rules, nano and non-commercial micro-drone operators were not required to obtain a Remote Pilot Certificate. The broadening of this requirement to all operators, regardless of

³⁴Draft Civil Drone (Promotion and Regulation) Bill, 2025, Section 6 (Unique Identification Number).

³⁵ *Civil Drone (Promotion and Regulation) Bill 2025 (Draft)*, s 7.

³⁶NASSCOM Submission, 'Feedback on the Draft Civil Drone (Promotion and Regulation) Bill, 2025' (October 15, 2025), available at <https://community.nasscom.in>.

³⁷Draft Civil Drone (Promotion and Regulation) Bill, 2025, Section 8 (Remote Pilot Training Certificate).

category or purpose, is seen as a major regression.³⁸

E. Compulsory Third-Party Insurance and Compensation

Section 9 of the Draft Bill prohibits the operation of any UAS without a valid third-party insurance policy meeting the requirements prescribed by the Central Government.³⁹ While the 2021 Rules required third-party liability insurance for commercial operators of small and above categories, the Draft Bill expands this obligation to all drone operators unless specifically exempted by notification.

The Bill also introduces a statutory no-fault compensation regime. Compensation amounts are fixed: Rs. 2.5 lakh for death and Rs. 1 lakh for grievous hurt resulting from a drone accident.⁴⁰ Claims are adjudicated by Motor Accident Claims Tribunals, and the Bill broadens the definition of 'accident' beyond fatal or serious injury to include property damage. Compensation claims may be filed by injured persons, their legal representatives, or property owners. A compensation application must be filed within six months of the accident. Appeals to the relevant High Court lie within 90 days, but only for compensation amounts exceeding Rs. 1 lakh.⁴¹

While the compensation framework strengthens consumer protection and provides a clear remedy for victims, the NASSCOM commentary notes that it raises compliance costs, especially for small operators and recreational flyers.⁴²

F. Airspace Management and Digital Sky Zones

The Draft Bill retains the tripartite airspace zoning system green, yellow, and red zones carried over from the 2021 Rules.⁴³ Green zones permit free flying; yellow zones require air traffic control clearance; and red zones prohibit drone operations. The existing Digital Sky platform continues to serve as the enforcement mechanism for this zoning. Both Central and State governments may declare temporary red zones.

A significant addition is that the Airports Authority of India (AAI) is designated to develop

³⁸The Daily Brief (Zerodha), 'A New Bill Could Sink India's Drones from the Sky' (November 21, 2025), available at <https://thedailybrief.zerodha.com>.

³⁹Draft Civil Drone (Promotion and Regulation) Bill, 2025, Section 9 (Third-Party Insurance).

⁴⁰Sigma Chambers (2025): compensation fixed at Rs. 2.5 lakh for death and Rs. 1 lakh for grievous hurt, claims adjudicated by Motor Accident Claims Tribunals.

⁴¹Draft Civil Drone (Promotion and Regulation) Bill, 2025, Section 45(2)(aa) (economic regulation including fares and tariffs).

⁴²NASSCOM, 'Submission on the Draft Civil Drone (Promotion and Regulation) Bill, 2025' (15 October 2025).

⁴³Draft Civil Drone (Promotion and Regulation) Bill, 2025, Sections 10–15 (Airspace Zoning and Digital Sky).

Unmanned Aircraft System Traffic Management (UTM) infrastructure.⁴⁴ The Bill also provides a legal foundation for regulating both Visual Line of Sight (VLOS) and Beyond Visual Line of Sight (BVLOS) drone operations a recognition of the industry's developmental trajectory though the specific operational details remain to be provided through future rule-making.⁴⁵

G. Mandatory Safety and Security Features

Section 23 of the Draft Bill mandates that no person shall manufacture, assemble, offer for sale, transfer, or operate any UAS that does not incorporate mandatory safety and security features as prescribed by the Central Government.⁴⁶ These features are intended to ensure airworthiness, prevent tampering, and enable the traceability of drone operations. The Bill introduces the concept of 'airworthy' as a defined term, aligning drones more closely with aviation-grade safety and maintenance standards.⁴⁷

H. Prohibition on Dangerous Goods and Weaponisation

Section 24 of the Draft Bill prohibits the carriage of ammunition, explosives, and other military equipment in civilian drones, with exceptions only where written permission is granted by the Central Government or its authorised representative.⁴⁸ Section 25 explicitly criminalises the use of a civilian UAS as a weapon to commit or assist in any criminal offence an offence punishable with imprisonment of up to three years, a fine of up to Rs. 1 lakh, or both.⁴⁹

I. Penal Provisions, Cognisable Offences, and Seizure Powers

The Draft Bill introduces a substantially more punitive enforcement architecture compared to the 2021 Rules. Several offences are designated as cognisable, meaning that police may investigate, detain, or arrest persons without requiring a warrant or prior approval from a magistrate. This substantially raises compliance risks for operators, as enforcement can be immediate and intrusive.

Under Section 27, authorities may detain any drone for up to three days on mere suspicion of

⁴⁴Sigma Chambers, 'Drone Law Watch Vol. 1 – September–October 2025' (November 8, 2025), available at <https://www.sigmachambers.in>.

⁴⁵Draft Civil Drone (Promotion and Regulation) Bill, 2025, Section 34 (Penalties and Cognizable offences).

⁴⁶Draft Civil Drone (Promotion and Regulation) Bill, 2025, Section 23 (Mandatory Safety and Security Features).

⁴⁷Draft Civil Drone (Promotion and Regulation) Bill, 2025, Section 3 (Definitions).

⁴⁸Draft Civil Drone (Promotion and Regulation) Bill, 2025, Section 24 (Prohibition on carrying dangerous goods).

⁴⁹Draft Civil Drone (Promotion and Regulation) Bill, 2025, Section 25 (Prohibition on use of drone as weapon).

violation before any finding of guilt is established.⁵⁰ This detention period is extendable by court order. Under the penalty framework, violations attract a graduated structure: a first offence relating to registration or certification may attract a fine of Rs. 50,000 or imprisonment of up to three months, or both; a second or subsequent offence may attract a fine of up to Rs. 1 lakh or imprisonment of up to six months, or both. More serious offences such as operating in restricted zones, or use of a drone as a weapon attract imprisonment of up to three years.

The 2021 Rules had primarily imposed monetary fines, reserving imprisonment for truly serious violations such as unauthorised airspace use or carriage of dangerous goods. The overall imprisonment range under the Draft Bill from three months to thirty-six months represents a significant escalation. Critics note that some penal provisions could be triggered for procedural non-compliances that cause no tangible harm.⁵¹

The Bill also introduces abetment provisions, expanding liability beyond the primary operator to partners, financiers, and service providers associated with the drone ecosystem. Carriage of dangerous goods and weaponisation offences are designated as cognisable and non-compoundable. A positive feature is the Bill's provision for a compounding mechanism allowing routine lapses in registration or certification to be compounded within 180 days creating a dual enforcement structure where minor violations can be resolved without criminal prosecution.

Another positive addition is the provision for an Expert Examiner an expert agency designated to advise courts and relevant authorities on drone-related technical matters which is expected to strengthen the enforcement framework by ensuring access to specialised expertise during adjudication.

J. Delegated Legislation and Economic Regulation

Section 45 of the Bill is perhaps the most expansive delegation of rulemaking authority. It empowers the Central Government to make rules on virtually every operational aspect of drone governance classification and categorisation, type certification standards, safety requirements, pilot training and certification, authorisation of training organisations, record-keeping, operational envelopes (altitude, distance, weather, performance limits), and payload restrictions.

Most notably, Section 45(2)(aa) authorises the Central Government to regulate the economic terms of drone services including fares, fees, tariffs, and charges. This represents a potentially

⁵⁰Draft Civil Drone (Promotion and Regulation) Bill, 2025, Section 27 (Seizure and Detention provisions).

⁵¹ *Civil Drone (Promotion and Regulation) Bill 2025 (Draft)*, ss 27–31.

transformative policy shift. Drone operations in India have thus far been commercially unregulated.⁵² Opening the door to tariff-setting and market intervention in the sector could significantly affect commercial viability and investor confidence, particularly at a time when the industry is still in a nascent growth phase.

While the flexibility afforded by delegated legislation allows regulation to evolve in step with technology, the sheer volume of matters delegated to subordinate legislation creates significant regulatory uncertainty. Industry participants are unable to plan long-term investments without knowing when specific new obligations will be notified.

V. Absence of R&D Exemptions and Impact on Innovation

One of the most consistently criticised features of the Draft Bill is the absence of any explicit exemption for research, development, and experimental flights. Under Rule 42 of the 2021 Rules, persons conducting operations specifically for research, development, and testing were not required to obtain a type certificate, UIN, prior permission, or remote pilot licence. Similarly, exemptions existed for model remotely piloted aircraft systems and nano drones.⁵³

The Draft Bill retains the concept of 'prototype UAS' but provides no operational clarity on what protections or exemptions prototype development would attract. For students, hobbyists, and research institutions, this introduces uncertainty and potential barriers to experimentation that were previously avoided. The concern is particularly acute given India's stated ambitions in drone manufacturing indigenisation: the very process of iterative prototyping, testing, and failure which is central to engineering innovation would potentially require full DGCA compliance at every stage.

Critics at institutions including the IITs and IISc have specifically flagged the chilling effect this could have on academic engineering programmes and startup incubators. The Daily Brief analysis notes that a college student who could previously iterate on a prototype delivery drone under Rule 42's exemption crashing multiple times without regulatory bottlenecks would now potentially require full certification for each prototype.

The Dhirubhai Ambani University School of Law's analysis concludes that the absence of R&D exemption clarity in the Draft Bill may hinder the growth of indigenous drone technology at

⁵² Civil Drone (Promotion and Regulation) Bill 2025 (Draft), s 45(2)(aa).

⁵³ *Drone Rules 2021*, r 42.

precisely the time India aspires to become a hub for manufacturing and technological development in the sector.⁵⁴

VI. Procedural Concerns: Pre-Legislative Consultation and Transparency

Beyond the substantive concerns, the Draft Bill has attracted criticism for the manner in which it was released for consultation. The Bill was published without any accompanying explanatory note or regulatory impact assessment.⁵⁵ The Pre-Legislative Consultation Policy (PLCP), introduced by the Central Government in 2014, mandates that draft legislation be accompanied by an explanatory note, financial implications, and an assessment of its impact on citizens, and recommends a minimum of 30 days for public consultation before a Bill proceeds to Cabinet approval.⁵⁶

The initial consultation window of just two weeks September 16 to September 30, 2025 fell significantly short of the PLCP's recommended minimum.⁵⁷ Following industry pressure, the deadline was extended to October 15, 2025. Multiple industry representatives noted that the absence of any explanatory rationale for the overhaul given that no supporting brief was released explaining why the existing rules must be replaced was deeply concerning.

NASSCOM's submission explicitly questioned the rationale for the transition from a rules-based framework to a statute, noting that the existing framework comprising the 2021 Rules and the Vayuyan Act already provided a comprehensive structure for safety, accountability, and operational oversight. The submission argued that targeted amendments to the Vayuyan Act and the 2021 Rules rather than a wholesale legislative overhaul would be a more proportionate and effective response to the enforcement challenges identified by the government.

⁵⁴Dhirubhai Ambani University School of Law, 'Balancing Innovation, Industry Growth, and Security: India's Civil Drone (Promotion and Regulation) Bill, 2025' (October 13, 2025), available at <https://sol.daiict.ac.in>.

⁵⁵UK Civil Aviation Authority (CAA), 'Future of Flight: BVLOS Roadmap' (October 20, 2025), outlining a three-year plan for routine BVLOS drone operations.

⁵⁶Pre-Legislative Consultation Policy (PLCP), Department of Legal Affairs, Ministry of Law and Justice, Government of India (2014): recommends a minimum of 30 days for public consultation.

⁵⁷Infrastructure Today, 'Drone Bill 2025: Innovation at Risk as Ministry Sidesteps Consultation Norms, Alarming Industry' (September 17, 2025), available at <https://infrastructuretoday.co.in>.

VII. Industry Reactions and Stakeholder Positions

The Draft Bill's release triggered an immediate and broadly negative reaction across India's drone ecosystem. NASSCOM the IT industry body issued a formal submission calling for the Bill to be either withdrawn or comprehensively revised, describing the proposed framework as insufficiently justified by the existing policy context.

The Drone Federation of India (DFI), through its President Smit Shah, characterised the Bill as a 'rollback of reforms' that risks undermining the progress achieved since 2021.⁵⁸ The DFI warned that the re-criminalisation of offences and the threat of drone confiscation by local police officers who may lack the technical expertise to distinguish compliant from non-compliant operations could create what it termed an 'atmosphere of fear' among legitimate operators and innovators.⁵⁹

The DFI also highlighted a fundamental enforcement paradox embedded in the Draft Bill's design. Stakeholders allege that unregistered Chinese drones continue to be imported and operated without type certification, while uncertified agricultural drones are openly sold and used across the country without any effective deterrent.⁶⁰ The emphasis on punitive provisions against registered, compliant operators without first addressing enforcement gaps through customs controls and enhanced DGCA oversight risks penalising those who follow the rules while allowing genuine violators to evade punishment.

Academic stakeholders, including faculty from IITs and IISc, raised concerns about the negative impact on educational innovation and engineering experimentation, particularly through the removal of the R&D exemption.⁶¹ Proponents of the Bill, including DGCA officials, have emphasised the need for a more mature regulatory phase given India's growing drone ecosystem, the increasing security dimensions of drone technology, and the necessity of establishing statutory certainty and accountability.⁶²

⁵⁸DFI President Smit Shah quoted in Insidefpv.com, 'Decoding the New Drone Bill: What You MUST Know Now' (September 22, 2025).

⁵⁹Mavdrones, 'India's Draft Drone Bill 2025: What New Rules Could Mean For Drone Users' (September 18, 2025), available at <https://www.mavdrones.com>.

⁶⁰Drone Federation of India (DFI), concerns on unregistered Chinese drones, cited in Mavdrones (2025).

⁶¹IIT and IISc faculty concerns cited in Swarajya Mag (2025), *ibid*.

⁶²Brahmastra, 'India's Draft Civil Drone (Promotion and Regulation) Bill, 2025: A Step Towards Stricter Regulation or a Hurdle for Innovation?' (October 30, 2025), available at <https://www.brahmastra.ltd>.

The Swarajya Mag analysis drew attention to the tension between the Bill's stated promotional intent and its operational impact: a Bill titled 'Promotion and Regulation' that, in practice, erects more compliance barriers than it dismantles, raises questions about regulatory coherence. Industry bodies have also flagged the absence of provisions for regulatory sandboxes mechanisms that allow companies to test new applications under relaxed rules as a missed opportunity.⁶³

VIII. Tensions with India's Broader Legislative Policy

The Draft Bill's penal architecture sits in apparent tension with the Central Government's own broader legislative direction. The Jan Vishwas (Amendment of Provisions) Act, 2023 was specifically enacted to decriminalise minor offences across multiple sectors and promote ease of doing business by converting criminal penalties into civil penalties wherever appropriate.⁶⁴ Cyril Amarchand Mangaldas noted that the Draft Bill's punitive approach 'appears excessive and runs counter to the Government's broader objective under the Jan Vishwas Act, 2023'.⁶⁵

Since 2014, the Government has championed 'Ease of Doing Business' and 'Make in India' as central pillars of its economic policy. The 2021 Drone Rules were widely cited as an exemplary implementation of these principles in the context of emerging technology regulation. The 2025 Draft Bill, by contrast, is seen by many as reversing that approach, creating an environment where even honest compliance mistakes carry criminal consequences.

The Lexology analysis further noted that it remains to be seen whether the final version of the Bill will align with the government's legislative direction under the Jan Vishwas Act.⁶⁶ The tension between the government's stated goal of promoting the drone sector and the Bill's regulatory architecture is therefore not merely an industrial concern it is a question of internal policy coherence.

⁶³Mavdrones, 'India's Drone Regulation Journey: From Grounded Beginnings to a Crossroads in 2025' (October 17, 2025).

⁶⁴The Jan Vishwas (Amendment of Provisions) Act, 2023 (Act No. 18 of 2023), Government of India, seeking to decriminalise offences across sectors.

⁶⁵Cyril Amarchand Mangaldas (2025): 'the punitive approach appears excessive and runs counter to the Government's broader objective under the Jan Vishwas Act, 2023'.

⁶⁶Lexology, 'Grounded or Soaring? Inside the Draft Drone Bill 2025' (October 27, 2025), available at <https://www.lexology.com>.

IX. Comparative Analysis: International Regulatory Frameworks

A. United States – FAA Approach

In the United States, the Federal Aviation Administration (FAA) regulates drone operations through a risk-based, category-driven framework. Recreational flyers are exempt from formal licensing requirements, and the FAA's Part 107 framework applies a proportionate certification regime to commercial operators.⁶⁷ In 2025, the FAA issued a Notice of Proposed Rulemaking (NPRM) titled 'Normalizing UAS Beyond Visual Line of Sight Operations', proposing performance-based regulations for low-altitude BVLOS operations and UAS Traffic Management services.⁶⁸ The FAA's approach performance-based, technology-neutral, and proportionate stands in contrast to the Draft Bill's prescriptive, certification-heavy architecture.

B. European Union – EASA Framework

The European Union Aviation Safety Agency (EASA) governs drone operations under Regulation (EU) 2019/947, which establishes a tiered risk-based approach divided into Open, Specific, and Certified categories. In the Open Category which covers most recreational and low-risk commercial flights operators are required only to complete a simple online test before commencing operations.⁶⁹ EASA adopted the updated Specific Operations Risk Assessment (SORA 2.5) framework in September 2025, providing a clearer and standardised pathway for medium-risk operations such as BVLOS mapping, delivery, and inspection.

C. United Kingdom – CAA BVLOS Roadmap

The UK Civil Aviation Authority released its 'Future of Flight: BVLOS Roadmap' in October 2025, describing a 'safe, realistic, and proportionate' three-year plan to enable routine BVLOS drone operations, building on ongoing trials in delivery and infrastructure inspection.⁷⁰ The UK approach is characterised by evidence-based, incremental expansion of operational permissions, with regulatory sandboxes used to generate practical data before broader rules are promulgated.

⁶⁷The Daily Brief (Zerodha, 2025): 'The EU's Open Category requires only a simple online test for low-risk drones. China also allows hobbyists to fly without pilot certificates.'

⁶⁸FAA Notice of Proposed Rulemaking (NPRM), 'Normalizing UAS Beyond Visual Line of Sight Operations' (Docket FAA-2025-1908), open for public comments till October 6, 2025.

⁶⁹EASA, ED Decision 2025/018/R (September 29, 2025) adopting the SORA 2.5 framework for drone operations in the EU.

⁷⁰ Civil Aviation Authority, *Future of Flight: BVLOS Roadmap* (CAP 3182, 2025).

D. Australia – CASA BVLOS Trials

Australia's Civil Aviation Safety Authority (CASA) launched in October 2025 a 12-month trial offering four new BVLOS operational pathways for small drones under 25 kg, based on population density and UAS speed.⁷¹ Australia's approach progressive, trial-based, and proportionate to risk provides an instructive model for how established aviation regulators can adapt to drone technology without imposing disproportionate compliance burdens.

E. Comparative Assessment

The international comparison reveals a striking divergence between India's proposed approach and global best practices. The US FAA exempts recreational flyers from licensing; the EU requires only an online test for Open Category operations; China allows hobbyists to fly without pilot certificates.⁷² India's Draft Bill, in contrast, appears to impose pilot certification obligations on all drone operators, including hobbyists and students using micro-drones. The Zerodha Daily Brief warns that the Draft Bill, if enacted without revision, would make India an outlier in global drone regulation not just strict, but punitively so potentially undermining its aspirations to become a global drone manufacturing hub.

Countries such as Singapore and the UK have effectively used regulatory sandboxes to generate evidence-based drone regulations without limiting creativity a model India has so far not adopted in the Draft Bill.

X. Arguments in Support of the Draft Bill

While the weight of published commentary has been critical, the Draft Bill does contain provisions that represent genuine improvements over the existing framework and that advance legitimate regulatory objectives.

First, the elevation of drone regulation to a standalone primary statute provides parliamentary legitimacy, democratic accountability, and greater durability than a rules-based framework. It signals institutional commitment to a sector that contributes to critical infrastructure, agriculture, and national security.

Second, the mandatory insurance and compensation framework strengthens consumer

⁷¹ Australia CASA, launch of 12-month BVLOS trial pathways from October 15, 2025, for small drones under 25 kg. Cited in Sigma Chambers (2025).

⁷² ZenaTech, 'Drone Laws 2026: Everything You Need to Know' (18 December 2025).

protection by providing a clear, accessible remedy for persons harmed by drone accidents a gap in the 2021 Rules. The no-fault compensation mechanism removes the evidentiary burden on victims and assigns liability on an operator liability basis.

Third, the Bill provides explicit legal recognition of BVLOS operations and UTM infrastructure, laying the statutory groundwork for the next phase of commercial drone deployment long-range logistics, precision agriculture, and medical supply deliveries which requires a robust legal foundation.

Fourth, the inclusion of an Expert Examiner an expert agency designated to advise courts on technical drone matters, is a positive innovation that should improve the quality of adjudication in drone-related disputes.

Fifth, the dual enforcement structure non-compoundable offences for serious security violations, compoundable mechanisms for routine lapses represents a more nuanced approach to enforcement than a purely punitive regime, even if the overall balance remains a matter of contention.

Sixth, the broad applicability of the framework encompassing foreign citizens and the entire drone value chain, including designers, importers, and traders creates comprehensive oversight at a time when geopolitical concerns about foreign-manufactured drone components (particularly from China) are mounting.⁷³

XI. The Path Forward: Observations and Recommendations

The Draft Civil Drone (Promotion and Regulation) Bill, 2025 occupies an important but contested space in India's regulatory evolution. As of early 2026, the Bill remains in draft form and has not yet been tabled in Parliament, with the Drone Rules, 2021 remaining enforceable. The extensive stakeholder feedback generated by the consultation process presents the Ministry of Civil Aviation with an opportunity to revise the Bill in ways that preserve its structural advances while addressing the industry's most fundamental concerns.

Several structural recommendations emerge from the analysis in this paper. First, the Bill

⁷³ICAO, Working Paper WP/532, 'Regulatory Update on Unmanned Aircraft System in India', A41 Session (2022), available at <https://www.icao.int>.

should restore meaningful R&D exemptions equivalent to or broader than those under Rule 42 of the 2021 Rules to preserve India's capacity for drone technology innovation, particularly in academic and startup contexts.⁷⁴

Second, the penal provisions should be recalibrated in line with the Jan Vishwas Act, 2023's decriminalisation philosophy converting procedural and technical non-compliances into civil penalties and reserving criminal sanctions for genuinely harmful or malicious conduct. A clearly graduated penalty structure, distinguishing between minor procedural lapses and substantive safety violations, should be adopted.⁷⁵

Third, the police seizure and detention powers particularly the power to detain drones for three days on mere suspicion should be constrained by procedural safeguards and should require a higher threshold than suspicion alone, such as a reasonable belief of violation.⁷⁶

Fourth, the economic regulation power under Section 45(2)(aa) authorising tariff-setting and market intervention should either be removed from the Bill or circumscribed by express criteria, prior consultation requirements, and sunset provisions to prevent regulatory overreach into what is currently a commercially self-regulating market.⁷⁷

Fifth, the Bill should be accompanied by a comprehensive explanatory note and regulatory impact assessment in compliance with the PLCP, 2014, and the public consultation period should be extended to a minimum of 60 days to allow meaningful engagement from all affected sectors.⁷⁸

Sixth, the Bill should introduce provisions for regulatory sandboxes, allowing startups and research institutions to operate under relaxed compliance conditions for a defined period, generating the evidence base necessary for calibrated rule-making a model successfully employed by Singapore and the UK.

Seventh, the Bill and its subordinate rules should, where possible, be developed and published

⁷⁴ NASSCOM, 'Enabling India's Drone Ecosystem – Policy Suggestions', available at <https://www.nasscom.in>.

⁷⁵ Government of India, *Jan Vishwas (Amendment of Provisions) Act, 2023*.

⁷⁶ *State of Rajasthan v Rehman* AIR 1960 SC 210.

⁷⁷ *n re Delhi Laws Act, 1951* AIR 1951 SC 332.

⁷⁸ Government of India, *Pre-Legislative Consultation Policy, 2014* (requiring draft laws to be placed in the public domain with explanatory material and impact assessment for at least 30 days).

simultaneously or at least close in time so that industry can assess the complete regulatory framework before the Bill is enacted, rather than being left to navigate a primary statute whose operational content is to be determined later.

XII. Conclusion

The Draft Civil Drone (Promotion and Regulation) Bill, 2025 represents a significant and consequential moment in India's evolving relationship with drone technology. India's drone sector has grown rapidly under the enabling conditions created by the 2021 liberalisation, with the country possessing the talent, demand base, and government support to become a genuine global drone manufacturing and services hub by 2030.

The Draft Bill's architectural shift elevating drone regulation to standalone primary legislation is conceptually sound, and several of its provisions represent genuine advances: the compensation framework, the BVLOS recognition, the Expert Examiner mechanism, and the broadened applicability to foreign actors and the full value chain all reflect a maturing regulatory approach.

However, as the foregoing analysis demonstrates, the Draft Bill in its current form risks reversing much of the progress made since 2021. The removal of R&D exemptions, the expansion of criminal liability, the grant of sweeping police seizure powers without adequate procedural safeguards, the ambiguous type certification regime, the potential for economic tariff regulation, and the excessive delegation of operational details to future rules taken together create a compliance environment that stakeholders from across the industry, academia, and civil society have identified as disproportionate and innovation-suppressing.

At a time when the US FAA, EASA, the UK CAA, and CASA are investing in progressive, risk-proportionate, and innovation-enabling drone frameworks and when the global drone market is projected to grow at a CAGR of 14.3% India cannot afford a regulatory framework that treats legitimate operators as potential criminals.⁷⁹ The 2021 Rules demonstrated what can happen when regulators trust citizens and industry: innovation accelerates and India becomes globally competitive. The 2025 Draft Bill, if enacted without fundamental revision, risks demonstrating the opposite.

⁷⁹ Grand View Research, 'Commercial Drone Market Size, Share | Industry Report, 2030' (October 2024).

The Ministry of Civil Aviation has an opportunity and, given the scale of stakeholder concern, an obligation to revise the Draft Bill in ways that preserve its structural advances while restoring the innovation-enabling, ease-of-compliance philosophy that has defined India's best regulatory work in the drone sector. If implemented thoughtfully, a revised Bill could provide the statutory certainty, consumer protection, and enforcement framework the sector needs to fulfil India's ambition of becoming a global drone hub by 2030.

