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LEGAL VACUUM (VACUUM OF LAW) CONCERNING DIGITAL/AUDIO NARCOTICS (BINAURAL BEATS) AND NARCOTICS TRANSACTIONS IN THE METAVERSE ERA

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Abstract

Digital technology has created two new narcotics-related phenomena: digital drugs in the form of binaural beats marketed as substitutes for drug sensations, and the shift of narcotics transactions into digital spaces that may extend into the metaverse. This normative legal study, using statutory, case, comparative, theoretical, and philosophical approaches, examines whether Indonesian law contains a legal vacuum regarding both phenomena and how it should be filled. It finds two different kinds of vacuum. For digital drugs, Law Number 35 of 2009 defines narcotics as substances, and scientific evidence of the psychoactive effects of binaural beats is inconsistent, so criminalisation by analogy would violate the principle of legality; what is missing is non-criminal oversight. For metaverse narcotics transactions, criminal norms already cover offering and selling in a technology-neutral manner, but enforcement is hindered by locus delicti, avatar identity attribution, evidence volatility, virtual assets, undercover purchases, and the absence of platform obligations. The article proposes a two-track model: non-criminal oversight of digital drugs, and strengthened procedural law and platform obligations for metaverse transactions through revision of the Narcotics Law.

Keywords: *Legal vacuum; digital drugs; binaural beats; metaverse; narcotics transactions.*

A. INTRODUCTION

Narcotics remain a growing global problem. The *World Drug Report 2025* records that around 316 million people worldwide used drugs in 2023.[1] In Indonesia, the National Narcotics Agency (Badan Narkotika Nasional, BNN) reported a drug abuse prevalence of 2.11% in 2025, or around 4.11 million people.[2] Behind these figures, the way narcotics are distributed and perceived is changing fundamentally because of digital technology. The first change concerns transaction channels. In July 2025, BNN uncovered an international syndicate in Bali that used a Telegram bot. Buyers filled in a location form, paid in crypto-assets, and then received the coordinates and a photograph of the pick-up point.[3] In June 2026, the Ministry of Communication and Digital Affairs strengthened its cooperation with BNN because drug distribution increasingly relies on digital platforms and closed communication channels.[4]

In February 2026, the European Union Drugs Agency (EUDA) observed that drug sales are moving to encrypted applications, that crypto-assets facilitate cross-border payments, and that artificial intelligence accelerates the development of new psychoactive substances.[5] The next step in this shift is the metaverse, an immersive virtual space in which users interact through avatars and transact with

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[1] United Nations Office on Drugs and Crime, *World Drug Report 2025* (Vienna: UNODC, 2025), https://reliefweb.int/report/world/unodc-world-drug-report-2025, accessed 3 Nov 2026.

[2] Akurat.co, "4,11 Juta Warga Terpapar Narkoba, BNN Bunyikan Alarm Darurat", *Akurat.co* (3 Feb 2026), https://www.akurat.co/nasional/830905/4-11-juta-warga-terpapar-narkoba-bnn-bunyikan-alarm-darurat, accessed 3 Nov 2026.

[3] Aryo Mahendro, "BNN Ungkap Modus Sindikat Narkoba Internasional di Bali Pakai Telegram", *detikBali* (15 Jul 2025), https://www.detik.com/bali/hukum-dan-kriminal/d-8013111/bnn-ungkap-modus-sindikat-narkoba-internasional-di-bali-pakai-telegram, accessed 3 Nov 2026.

[4] Investortrust.id, "Kemenkomdigi dan BNN Kolaborasi, Waspadai Modus Baru Peredaran Narkoba di Ruang Digital", *Investortrust.id* (12 Jun 2026), https://investortrust.id/national/106252/kemenkomdigi-dan-bnn-kolaborasi-waspadai-modus-baru-peredaran-narkoba-di-ruang-digital, accessed 3 Nov 2026.

[5] Lovguiden, "Teknologisk innovation og AI transformerer det europæiske narkotikamarked", *Lovguiden.dk* (11 Feb 2026), https://lovguiden.dk/en/det-offentlige/eu-narkotikaagentur/2026-02-11-teknologisk-innovation-og-ai-transformerer-det-europaeiske-narkotikamarked, accessed 3 Nov 2026.

digital assets. INTERPOL has warned of the emergence of "*metacrime*" and noted that evidence in virtual spaces can easily disappear or be altered.[6] The second change concerns the object itself. Since the early 2010s, audio files have been marketed as *digital drugs*: sequences of binaural beats claimed to produce sensations similar to narcotics. In October 2015, the I-Doser application caused public concern in Indonesia. The Ministry of Communication and Informatics temporarily blocked four related domains, while BNN stated that I-Doser did not fall within any narcotics category.[7]

The 2021 *Global Drug Survey* of more than 30,000 respondents in 22 countries found that 5% of respondents used binaural beats to reach altered states of consciousness, and 12% of them sought effects similar to psychedelic drugs.[8] As a matter of *das sollen*, criminal law must protect society from the dangers of narcotics while remaining bound by the principle of legality, which requires offences to be written, clear, and strictly construed.[9] As a matter of *das sein*, the Narcotics Law defines narcotics as substances or drugs, so audio stimuli cannot be qualified as narcotics.[10] Meanwhile, the criminal norms on offering and selling narcotics can apply to digital transactions, but procedural law and platform regulation have not been designed for virtual spaces that are cross-border, anonymous, and volatile. The revision of the Narcotics Law is still being drafted within the government.[11] Previous studies have addressed parts of

[6] INTERPOL, "Grooming, Radicalization and Cyber-Attacks: INTERPOL Warns of 'Metacrime'", *Interpol.int* (18 Jan 2024), https://www.interpol.int/News-and-Events/News/2024/Grooming-radicalization-and-cyber-attacks-INTERPOL-warns-of-Metacrime, accessed 3 Nov 2026.

[7] Antaranews, "I-Doser Bukan Narkoba", *Antaranews.com* (Oct 2015), https://www.antaranews.com/berita/523522/i-doser-bukan-narkoba, accessed 3 Nov 2026.

[8] Monica J. Barratt et al., "Who Uses Digital Drugs? An International Survey of 'Binaural Beat' Consumers", *Drug and Alcohol Review* (2022), https://doi.org/10.1111/dar.13464.

[9] Law Number 35 of 2009 on Narcotics, Art. 4; Law Number 1 of 2023 on the Criminal Code, Art. 1(1) and (2).

[10] Law Number 35 of 2009 on Narcotics, Art. 1 point 1.

[11] Kumparan, "RUU Narkotika Belum Dibahas, Penanganan Kasus Narkoba Masuk Penyesuaian Pidana", *Kumparan.com* (1 Dec 2025, updated 7 Apr 2026),

this problem. Barratt and colleagues mapped the users of digital drugs and concluded that the phenomenon challenges the definition of a drug, but does not act as a gateway to substance use.[12] Ingendoh, Posny, and Heine showed that the evidence on whether binaural beats can entrain brainwaves remains inconsistent.[13] In the legal literature, Hakim and Astuti highlighted the legal vacuum concerning avatar-based sexual violence in the metaverse under Indonesian criminal law.[14] Al-Haddad concluded that Jordanian cybercrime law is not yet prepared to deal with conduct involving avatars.[15]

However, no study has yet placed digital drugs and metaverse narcotics transactions within a single analytical framework, or clearly distinguished a normative vacuum from an enforcement vacuum. This article aims to fill that gap. The issues are framed dialectically: what the current regulation of both phenomena looks like, what forms of legal vacuum and juridical problems arise, and what regulatory model would ideally fill them. This is normative legal research employing statutory, case, comparative, theoretical, and philosophical approaches, supported by scientific studies and reports of international bodies.[16] The ongoing drafting of the revised Narcotics Law, together with the entry into force of the new Criminal Code and the 2025 Code of Criminal Procedure in January 2026, makes this study relevant to lawmakers. Its contribution is a two-track regulatory model that distinguishes the response to unproven

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https://kumparan.com/kumparannews/ruu-narkotika-belum-dibahas-penanganan-kasus-narkoba-masuk-penyesuaian-pidana-26Lj058633J, accessed 3 Nov 2026.

[12] Monica J. Barratt et al., "Who Uses Digital Drugs?"...

[13] Hannah Ingendoh, Ellen Posny, and Angela Heine, "Binaural Beats to Entrain the Brain? A Systematic Review of the Effects of Binaural Beat Stimulation on Brain Oscillatory Activity, and the Implications for Psychological Research and Intervention", *PLOS ONE*, vol. 18, no. 5 (2023), e0286023.

[14] Muhammad Hatta Hakim and Pudji Astuti, "Problematika Kualifikasi Tindak Pidana Kekerasan Seksual Berbasis Avatar di Metaverse dalam Sistem Hukum Pidana Indonesia", *Indonesian Journal of Contemporary Law*, vol. 3, no. 2 (2026), pp. 1-21.

[15] M. W. Al-Haddad, "Criminally Illegal Use of Virtual Avatars in the Metaverse", *Dirasat: Shari'a and Law Sciences*, vol. 53, no. 3 (2026), 12763, https://doi.org/10.35516/Law.2026.12763.

[16] Peter Mahmud Marzuki, *Penelitian Hukum*, revised ed. (Jakarta: Kencana Prenada Media Group, 2017).

harms from the response to real harms that have merely changed medium.

B. RESULTS AND DISCUSSION

1. Current Legal Framework (Existing Regulation) Regarding the Phenomenon of "Digital Drugs" and Narcotics Transactions Based on Digital Technology/the Metaverse

Article 1 point 1 of the Narcotics Law defines narcotics as substances or drugs derived from plants or non-plants, whether synthetic or semi-synthetic. These substances can lower or alter consciousness, cause loss of sensation, reduce pain, and cause dependence, and they are classified into the categories listed in the annex to the law.[17] The classification is set out in the annex, and changes to it are made by regulation of the Minister of Health.[18] The definition therefore contains two cumulative requirements: the object must be a substance or drug, and that substance must be listed in a category. This substance-and-schedule construction is consistent with the *Single Convention on Narcotic Drugs 1961* and the *Convention on Psychotropic Substances 1971*, both ratified by Indonesia.[19]

The national Criminal Code, in force since 2 January 2026, codifies narcotics offences as special crimes in Articles 609 to 611, while sectoral laws remain the basis for implementation by the competent agencies.[20] The government and the House of Representatives also adjusted several criminal provisions to prevent a legal vacuum caused by the repeal of certain articles, leaving comprehensive regulation to the revised Narcotics Law.[21] The new Criminal Code affirms the principle of legality in Article 1(1) and

[17] Law Number 35 of 2009 on Narcotics, Art. 1 point 1.

[18] Law Number 35 of 2009 on Narcotics, Art. 6.

[19] Law Number 8 of 1976 on the Ratification of the Single Convention on Narcotic Drugs 1961 and the Protocol Amending It; Law Number 8 of 1996 on the Ratification of the Convention on Psychotropic Substances 1971.

[20] Hukumonline, "Catat! Ini Daftar Tindak Pidana Khusus yang Dikodifikasi dalam KUHP Baru", *Hukumonline.com* (24 Sep 2025), https://www.hukumonline.com/berita/a/catat-ini-daftar-tindak-pidana-khusus-yang-dikodifikasi-dalam-kuhp-baru-lt68d478b130aeb/, accessed 3 Nov 2026.

[21] Kumparan, "RUU Narkotika Belum Dibahas"

expressly prohibits analogy in determining criminal offences in Article 1(2).[22]

Binaural beats are produced by playing two tones of slightly different frequencies to each ear, so that the brain perceives a third tone at the frequency of their difference. Marketers of digital drugs claim that this sound can "entrain" brainwaves and produce effects resembling particular substances. A 2023 systematic review found inconsistent results: some studies supported the brainwave entrainment hypothesis, but more did not, and their methodologies varied widely.[23] The *Global Drug Survey* showed that users' main motivations were relaxation or sleep (72%), changing mood (35%), and only then mimicking psychedelic effects (12%). Most users had also used other substances, so the researchers did not regard binaural beats as a gateway to narcotics.[24]

From a legal standpoint, Indonesia's position was formed in 2015. BNN affirmed that I-Doser was not a narcotic because it did not meet the definition of a substance. The Ministry of Communication and Informatics nevertheless temporarily blocked four domains on the grounds of public concern, pending a panel decision.[25] The blocking was criticised as ineffective because the application remained available in app stores. Cybersecurity experts also pointed out that the application's marketing claims, including its user numbers and an alleged BNN endorsement, were false.[26] The legal tools available for digital drugs are therefore not narcotics law, but the law on electronic content and consumer protection. Article 40 of the Electronic Information and Transactions Law authorises the government to cut off access to unlawful electronic information,

[22] Law Number 1 of 2023 on the Criminal Code, Art. 1(1) and (2).

[23] Hannah Ingendoh, Ellen Posny, and Angela Heine, "Binaural Beats to Entrain the Brain?"

[24] RMIT University, "Audio Files Are Being Used as Digital Drugs: Survey", *RMIT.edu.au* (31 Mar 2022), https://www.rmit.edu.au/news/all-news/2022/mar/digital-drugs-binaural-beats, accessed 3 Nov 2026.

[25] Antaranews, "I-Doser Bukan Narkoba"

[26] CNN Indonesia, "Pemblokiran Situs I-Doser Disebut Kurang Efektif", *CNNIndonesia.com* (16 Oct 2015), https://www.cnnindonesia.com/teknologi/20151015195059-185-85205/pemblokiran-situs-i-doser-disebut-kurang-efektif/, accessed 3 Nov 2026.

under procedures set out in Government Regulation Number 71 of 2019.[27] Articles 9 and 10 of the Consumer Protection Law also prohibit offering products with untrue or misleading claims.[28]

Unlike digital drugs, narcotics transactions in digital spaces involve substances that are clearly narcotics, and the relevant offences are technology-neutral. Article 114 of the Narcotics Law penalises any person who, without right or unlawfully, offers for sale, sells, buys, receives, acts as an intermediary in buying and selling, exchanges, or delivers Category I narcotics.[29] The phrases "offers for sale" and "acts as an intermediary" do not require physical contact, so they can cover offers made through social media, messaging applications, or virtual spaces. The same law penalises attempts and conspiracy in Article 132 and regulates the laundering of narcotics proceeds in Article 137.[30] On the investigative side, Article 75 of the Narcotics Law authorises investigators, among other things, to conduct interception as well as undercover purchases and controlled deliveries, whose procedures are governed by Article 79.

Article 86(2) recognises information stored or transmitted electronically as evidence.[31] The 2025 Code of Criminal Procedure reinforces this by recognising electronic evidence as a distinct type of evidence.[32] Article 2 of the Electronic Information and Transactions Law extends its application to acts outside Indonesia that have legal effects in Indonesia.[33] Supervision of crypto-assets now lies with the Financial Services Authority, and the Anti-Money Laundering Law provides a basis for tracing and confiscating

[27] Law Number 11 of 2008 on Electronic Information and Transactions as last amended by Law Number 1 of 2024, Art. 40; Government Regulation Number 71 of 2019 on the Operation of Electronic Systems and Transactions.

[28] Law Number 8 of 1999 on Consumer Protection, Arts. 9 and 10.

[29] Law Number 35 of 2009 on Narcotics, Art. 114.

[30] Law Number 35 of 2009 on Narcotics, Arts. 132 and 137.

[31] Law Number 35 of 2009 on Narcotics, Arts. 75, 79, and 86(2).

[32] Law Number 20 of 2025 on the Code of Criminal Procedure, Arts. 235(1)(f) and 242.

[33] Law Number 11 of 2008 on Electronic Information and Transactions as last amended by Law Number 1 of 2024, Art. 2.

criminal proceeds.[34] The metaverse can be understood as a network of persistent and immersive three-dimensional virtual spaces in which users appear as avatars, interact in real time, and transact with in-platform currencies, crypto-assets, or non-fungible tokens. INTERPOL identifies various forms of *metacrime*, from grooming and radicalisation to the theft of virtual assets, and stresses that law enforcement may face virtual crime scenes without physical evidence.[35]

In the narcotics context, the metaverse may serve as a storefront and negotiation space, while delivery still takes place in the physical world through dead drops or shipping, as an extension of the Telegram bot pattern found in Bali. As far as the authors could establish, no case in Indonesia has been verified in which a narcotics transaction was negotiated within a metaverse platform, so this analysis is anticipatory. The current framework thus has two faces. For digital drugs, narcotics law does not apply because the object is not a substance, and the response depends on electronic content and consumer protection instruments. For narcotics transactions in digital spaces, substantive criminal norms already cover the conduct in a technology-neutral manner and are supported by the recognition of electronic evidence, special investigative powers, and extraterritorial jurisdiction.

2. Digital drugs: the limits of legality and the oversight vacuum

The term legal vacuum (*rechtsvacuum*) must be used carefully. Sudikno Mertokusumo explains that legislation is never complete, so law enforcers must engage in legal discovery through interpretation and construction.[36] In criminal law, however, the scope for legal discovery is limited by the principle of legality, so a vacuum in

[34] Law Number 4 of 2023 on the Development and Strengthening of the Financial Sector; Law Number 8 of 2010 on the Prevention and Eradication of Money Laundering.

[35] INTERPOL, *Metaverse: A Law Enforcement Perspective* (Lyon: INTERPOL, 2024).

[36] Sudikno Mertokusumo, *Penemuan Hukum: Sebuah Pengantar* (Yogyakarta: Liberty, 2007).

criminal norms cannot be filled by analogy.[37] This study distinguishes two kinds of vacuum. A normative vacuum exists when no norm governs a particular act. An enforcement vacuum exists when a norm exists but the procedural and institutional means to apply it are inadequate. Digital drugs belong to the first kind, while metaverse narcotics transactions mainly belong to the second.

Article 1(2) of the new Criminal Code prohibits analogy in determining criminal offences. Extending the word "substance" to cover audio stimuli would not be extensive interpretation but analogy, because sound is not, by nature, matter that is consumed.[38] Criminalisation through legislative amendment is also problematic. The theory of criminalisation requires that the conduct cause real harm, cannot be addressed by other means, and can be effectively enforced.[39] The evidence on the psychoactive effects of binaural beats is inconsistent, and there is no evidence of dependence. Criminalising listeners or creators of audio files would create an offence without proven harm, while burdening law enforcement with the near-impossible task of policing files freely available on global platforms.

Digital drugs nevertheless still require regulation. What is missing is a structured mechanism of non-criminal oversight, even though there are three real risks. The first is misleading marketing, such as claims that an audio file is equivalent to a particular narcotic or has been approved by an official body, as happened in the I-Doser case. The second is that children and adolescents are targeted by such marketing and are vulnerable to the normalisation of the idea of getting "high". The third is concurrent use with actual narcotic substances, given that most people who use binaural beats to alter their consciousness also use illicit substances.[40] The state's response has so far been reactive. The 2015 blocking was temporary, driven

[37] Moeljatno, *Asas-Asas Hukum Pidana*, revised ed. (Jakarta: Rineka Cipta, 2008).

[38] Law Number 1 of 2023 on the Criminal Code, Art. 1(2).

[39] Sudarto, *Hukum dan Hukum Pidana* (Bandung: Alumni, 1977); Herbert L. Packer, *The Limits of the Criminal Sanction* (Stanford: Stanford University Press, 1968).

[40] Monica J. Barratt et al., "Who Uses Digital Drugs?"

by public concern, and not based on any documented scientific assessment. BNN and the Ministry of Health also lack a formal procedure for assessing non-substance psychoactive products.

The first problem concerns *locus delicti*. In the metaverse, an offer may be made by an avatar on a server located in another country, received by a user in Indonesia, and settled with a crypto payment through an exchange in a third country. Article 2 of the Electronic Information and Transactions Law provides jurisdiction over acts abroad that have effects in Indonesia, but the Narcotics Law contains no specific provision on the *locus delicti* of virtual transactions. This uncertainty can be exploited by the defence and complicates the determination of the competent court. The second problem is identity attribution. An avatar is not a legal subject, so investigators must link the avatar to the person controlling it through registration data, IP addresses, devices, and crypto wallets. All of these data are held by platform operators, often abroad. The third problem is evidence volatility: voice conversations between avatars may not be recorded, private rooms can be deleted, and assets can be moved within seconds.[41]

The recognition of electronic evidence in the 2025 Code of Criminal Procedure and Article 86 of the Narcotics Law does not solve this problem, because the issue lies in obtaining and securing evidence before it disappears, not in its admissibility.The fourth problem is payment with virtual assets. In-platform currencies and digital tokens are not always subject to financial-sector supervision, especially if they are not traded on registered crypto-asset exchanges. The Anti-Money Laundering Law defines assets broadly, but the seizure and confiscation of virtual assets still face technical obstacles, such as control of private keys, asset valuation, and cooperation with platforms abroad. The crypto payment pattern in the Bali case shows that this problem is no longer hypothetical.[42]

The fifth problem concerns investigative techniques. Undercover purchases and controlled deliveries under Article 79 of the Narcotics Law were designed for physical interaction. Their use

[41] INTERPOL, *Metaverse: A Law Enforcement Perspective*.

[42] Aryo Mahendro, "BNN Ungkap Modus Sindikat Narkoba Internasional di Bali"...

in virtual spaces raises new questions: whether investigators may create fictitious avatars, how far they may interact before it amounts to entrapment, and how interactions should be recorded so that they can be tested in court. Without regulation, such investigations risk being challenged, especially since Article 235(5) of the 2025 Code of Criminal Procedure provides that unlawfully obtained evidence has no probative value.[43] The sixth problem lies with platform operators. Private electronic system operators must register and ensure that their systems do not contain or facilitate prohibited content.

These obligations, however, are general. They do not impose specific duties concerning narcotics transactions in virtual spaces, such as identity verification for transaction features, retention of interaction logs, user reporting mechanisms, and deadlines for responding to law enforcement requests. The 2026 cooperation between the Ministry of Communication and Digital Affairs and BNN still focuses on content blocking and literacy, not on the legal obligations of immersive platform operators. The legal vacuum therefore appears in two forms. For digital drugs, the vacuum in criminal norms should not be filled with criminal law at all; what is missing is non-criminal oversight of misleading marketing, child protection, and scientific assessment. For metaverse narcotics transactions, the vacuum lies in enforcement: *locus delicti*, identity attribution, evidence volatility, virtual assets, virtual undercover purchases, and platform obligations.

Philosophically, regulation must rest on the second and fifth principles of Pancasila: protecting people from real harm without unjustly depriving them of their freedom. The principle of legality, rooted in the thought of Anselm von Feuerbach and expressed in the maxim *nullum crimen, nulla poena sine praevia lege poenali*, guarantees citizens' freedom from arbitrary state power.[44] John Stuart Mill formulated the harm principle: power may rightfully be exercised over any member of a community against their will only to prevent harm to others.[45] Both views place criminal law as an

[43] Law Number 20 of 2025 on the Code of Criminal Procedure, Art. 235(5).
[44] Moeljatno, *Asas-Asas Hukum Pidana*...
[45] John Stuart Mill, *On Liberty* (London: John W. Parker and Son, 1859).

ultimum remedium to be used only against proven harm. At the same time, the state has a duty to protect the whole nation, including children, from narcotics that now exploit new technologies.

Theoretically, Lawrence Lessig shows that behaviour in cyberspace is regulated by four modalities: law, social norms, the market, and architecture. In his view, technological architecture is often more effective than legal prohibition.[46] Requiring metaverse platform operators to design systems that prevent, detect, and record narcotics transactions is an application of the architectural modality through law. Criminal policy theory likewise teaches a proportionate combination of penal and non-penal means.[47] This theory provides the basis for placing digital drugs on the non-penal track and metaverse narcotics transactions on a penal track with strengthened procedural law.

3. Comparative Analysis of Legal Definitions of "Narcotics" and Psychoactive Substances

Through the *Psychoactive Substances Act 2016*, the United Kingdom extended its prohibition to any substance capable of producing a psychoactive effect, without the need for scheduling. Its object, however, remains a consumed substance, so it does not reach audio stimuli.[48] The United Arab Emirates and Saudi Arabia responded to digital drugs through public warnings and inter-agency coordination meetings without criminal prohibition, and the experts quoted stated that claims about the effects of digital drugs could not be substantiated.[49] This experience supports the argument that the

[46] Lawrence Lessig, *Code and Other Laws of Cyberspace* (New York: Basic Books, 1999).

[47] Barda Nawawi Arief, *Bunga Rampai Kebijakan Hukum Pidana: Perkembangan Penyusunan Konsep KUHP Baru* (Jakarta: Kencana, 2008).

[48] Psychoactive Substances Act 2016 (United Kingdom), section 2.

[49] Gulf News, "Warning Issued over 'Digital Drugs' in UAE", *GulfNews.com* (updated 15 Sep 2018), https://gulfnews.com/uae/warning-issued-over-digital-drugs-in-uae-1.1024065, accessed 3 Nov 2026; Dazed Digital, "Saudi Arabia Is Freaking Out about Digital Drugs", *DazedDigital.com* (3 Nov 2014), https://www.dazeddigital.com/artsandculture/article/22394/1/saudi-arabia-is-freaking-out-about-digital-drugs, accessed 3 Nov 2026.

proportionate response to digital drugs is education and oversight, not criminalisation.

For transactions in digital spaces, the European Union offers a relevant framework. The *Digital Services Act* requires hosting service providers to establish notice-and-action mechanisms for illegal content and requires very large online platforms to assess and mitigate systemic risks.[50] *Regulation (EU) 2023/1113* applies the travel rule to crypto-asset transfers so that transactions can be traced.[51] The EUDA also operates an early warning system to detect new psychoactive products by combining health and security data.[52]

Table 1. Comparison of the regulation of digital drugs and digital narcotics transactions

Aspect	Indonesia	Comparator	Lesson
Definition of object	Listed substance or drug (Law 35/2009)	UK: any psychoactive substance (PSA 2016), still substance-based	Audio stimuli fall outside narcotics law
Response to digital drugs	Temporary blocking (2015); BNN: not a narcotic	UAE and Saudi Arabia: warnings and coordination, no criminal ban	Education and oversight track
Platform obligations	General electronic system operator duties; access blocking	EU: notice and action, systemic risk mitigation (DSA)	Specific duties for immersive platforms
Crypto-assets	Financial Services Authority supervision; AML Law	EU: travel rule (Regulation 2023/1113)	Traceability of virtual asset transfers

[50] Regulation (EU) 2022/2065 of the European Parliament and of the Council of 19 October 2022 on a Single Market for Digital Services (Digital Services Act), Arts. 16 and 34-35.

[51] Regulation (EU) 2023/1113 of the European Parliament and of the Council of 31 May 2023 on Information Accompanying Transfers of Funds and Certain Crypto-Assets.

[52] Lovguiden, "Teknologisk innovation og AI transformerer det europæiske narkotikamarked"...

Early detection	None for non-substance products	EUDA: early warning system	BNN–Ministry of Health early warning system

On these foundations, this article proposes a two-track regulatory model. The first track is non-criminal oversight of digital drugs, consisting of four steps. *First*, the revised Narcotics Law should establish an early warning system for new psychoactive products and phenomena, including non-substance products, with BNN and the Ministry of Health as scientific assessors. *Second*, marketing claims that a digital product is equivalent to a narcotic or has been approved by an official body should be treated as misleading information under the Consumer Protection Law. *Third*, content that promotes narcotics use or targets children with narratives of getting "digitally high" may have access restricted on the basis of a documented scientific assessment rather than mere public concern. *Fourth*, criminal law should be used only where a digital product serves as a vehicle for promoting or selling actual narcotics, conduct already punishable under existing provisions.

The second track is the strengthening of enforcement against metaverse narcotics transactions, also consisting of four steps. *First*, the *locus delicti* should be clarified: narcotics offences committed through electronic systems are deemed committed in Indonesia if the offer is directed at or accessed by a person in Indonesia, or if the narcotics are delivered in Indonesia. *Second*, virtual undercover purchases should be regulated, including the use of fictitious digital identities with written authorisation, limits on interaction to prevent entrapment, and an obligation to record all interactions. *Third*, immersive platform operators and virtual asset service providers should be subject to specific obligations: identity verification for transaction features of economic value, log retention, user reporting mechanisms, content removal within a set deadline, and responses to investigators' requests. *Fourth*, there should be a power to temporarily freeze virtual assets and accounts suspected of involvement in narcotics offences, by court order and in coordination with the Indonesian Financial Transaction Reports and Analysis Centre (PPATK) and the Financial Services Authority.

Table 2. The two-track regulatory model

Track	Main Measures	Legal Instruments	Nature
Digital drugs	Early warning system; scientific assessment by BNN and Ministry of Health	Revised Narcotics Law	Administrative
Digital drugs	Ban on misleading claims; restriction of content targeting children	Consumer Protection Law; EIT Law; GR 71/2019	Administrative and civil
Metaverse transactions	Clarified locus delicti for electronic transactions	Revised Narcotics Law	Substantive criminal law
Metaverse transactions	Virtual undercover purchases with authorisation and recording	Revised Narcotics Law; 2025 Code of Criminal Procedure	Procedural law
Metaverse transactions	Platform duties: identity verification, logs, notice and action	Revised Narcotics Law; Ministry regulations	Administrative
Metaverse transactions	Freezing and confiscation of virtual assets	AML Law; Financial Sector Law	Procedural law

The model can be translated into the following draft provisions for the revised Narcotics Law. The first proposal, on an early warning system, reads: "The National Narcotics Agency, together with the ministry responsible for health affairs, shall monitor, scientifically assess, and inform the public about new substances, products, or methods claimed or suspected to produce psychoactive effects, including those that are not substances." The second proposal, on *locus delicti*, reads: "A narcotics offence committed through an Electronic System, including a virtual space, is deemed to have been committed within the territory of the Republic of Indonesia if the offer, request, or negotiation is directed at or accessible to a person

in Indonesia, or if the Narcotics are delivered in Indonesia." The third proposal, on investigative techniques, reads: "Investigators may conduct undercover purchases and controlled deliveries through an Electronic System, including by using a fictitious digital identity, on the basis of a written order from their superior, and shall record all interactions. Investigators are prohibited from inducing a person to commit a narcotics offence that the person would not otherwise have committed."

The fourth proposal, on platform obligations, reads: "Electronic System Operators providing interactive virtual spaces or virtual asset transaction facilities shall verify the identity of users of transaction features of economic value, retain interaction and transaction records for at least one year, provide a mechanism for reporting suspected narcotics distribution, remove related content or deactivate related accounts no later than 24 hours after notification by the competent authority, and provide the data required for investigations." The model can be illustrated with two examples. In the first, an application markets audio files as "equivalent to methamphetamine without legal risk" and targets students. The creators and listeners are not punished under narcotics law. BNN and the Ministry of Health publish their finding that the claim is unproven, the marketing content aimed at children is restricted, and the "equivalent to methamphetamine" claim is acted upon as misleading information.

In the second, an avatar on a virtual platform whose servers are abroad offers "crystal" to a user in Lampung, receives payment in tokens, and then sends the coordinates of a pick-up point. That conduct already satisfies the elements of Article 114 of the Narcotics Law. The two-track model adds four things: certainty that the *locus delicti* is in Indonesia, a basis for investigators to operate undercover through an avatar with lawful recording, an obligation for the platform to hand over logs and identity data, and a basis for freezing the tokens and account. This synthesis affirms that not every new phenomenon requires a new offence. A responsive legal system distinguishes between two kinds of harm. Unproven harm is addressed through oversight and education, while real harm that has merely changed medium is addressed by strengthening enforcement.

C. CONCLUSION

Indonesian positive law treats the two phenomena studied here differently. Digital drugs in the form of binaural beats are not narcotics, because Law Number 35 of 2009 defines narcotics as listed substances or drugs, and the response to them has so far relied on blocking electronic content and on consumer protection. Narcotics transactions in digital spaces, including their potential in the metaverse, are already covered by technology-neutral criminal norms, particularly Articles 114, 132, and 137 of the Narcotics Law. The legal vacuum is twofold. For digital drugs, the vacuum in criminal norms may not be filled by analogy, which Article 1(2) of the new Criminal Code prohibits, nor should it be filled by criminalisation, given the weak evidence of harm; what is actually missing is non-criminal oversight. For metaverse narcotics transactions, the vacuum lies in enforcement: *locus delicti*, avatar identity attribution, evidence volatility, virtual assets, virtual undercover purchases, and the obligations of platform operators.

The ideal regulatory model is a two-track model. The first track is non-criminal oversight of digital drugs through an early warning system run by BNN and the Ministry of Health, a ban on misleading claims, and restrictions on content targeting children. The second track strengthens enforcement against metaverse narcotics transactions by clarifying the *locus delicti*, regulating virtual undercover purchases, imposing specific obligations on platform operators, and enabling the freezing of virtual assets. Lawmakers are advised to incorporate this model into the revised Narcotics Law. Further research is needed to test empirical evidence on the effects of digital drugs among the Indonesian population and to map cases of narcotics transactions on immersive platforms once enforcement data become available.

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