



Legal Harmonization of Electronic Evidence within Indonesia's Criminal Justice System

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Abstract

This study examines the harmonization of electronic evidence regulation within Indonesia's criminal justice system by analyzing normative inconsistencies between the Criminal Procedure Code, the Information and Electronic Transactions Law, and sectoral electronic system regulations. The research employs a normative doctrinal and comparative legal approach using statutory interpretation, conceptual analysis, and comparative legal reasoning to evaluate admissibility standards, authentication procedures, evidentiary value, and procedural safeguards governing electronic evidence. The findings demonstrate that fragmented evidentiary regulation has generated judicial inconsistency concerning digital authentication, forensic verification, chain of custody, and procedural legality in criminal proceedings. Indonesian courts continue to apply divergent interpretations regarding the relationship between electronic evidence and the principle of negative statutory proof, particularly in relation to evidentiary reliability and constitutional due process. The study proposes a harmonized evidentiary governance model integrating procedural codification, forensic standardization, institutional synchronization, and unified judicial interpretation in order to strengthen legal certainty, procedural fairness, and technological accountability within Indonesia's digital criminal justice administration. The proposed framework reinforces institutional coherence across investigation, prosecution, and adjudication processes.

Keywords : *Electronic Evidence, Criminal Procedure, Legal Harmonization, Digital Forensics, Procedural Justice.*



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INTRODUCTION

The rapid expansion of digital communication infrastructures, cross border data circulation, and algorithmically mediated interactions has fundamentally transformed the architecture of criminal conduct and evidentiary practices across contemporary legal systems, compelling jurisdictions worldwide to recalibrate traditional evidentiary doctrines that were originally constructed around physical and testimonial forms of proof. Contemporary criminal justice systems increasingly rely upon electronic records, metadata, digital communications, cloud storage, and platform generated information as primary instruments for reconstructing criminal liability, particularly in cybercrime, financial fraud, digital gambling, and transnational organized crime cases. Comparative legal scholarship demonstrates that jurisdictions adopting technologically adaptive evidentiary frameworks tend to produce higher degrees of procedural predictability and judicial consistency, whereas fragmented regulatory models often generate contradictory interpretations concerning authenticity, admissibility, and probative value of digital evidence.

Within the Indonesian context, the recognition of electronic evidence emerged through the interaction between the Criminal Procedure Code and the Information and Electronic Transactions Law, yet these normative instruments were developed under distinct historical rationalities and institutional assumptions, resulting in overlapping procedural standards that continue to challenge law enforcement agencies and courts in practice (Indonesia, 1981; Indonesia, 2008). The intensification of digital based criminality in Indonesia has further accelerated debates regarding the adequacy of existing evidentiary frameworks, especially because the procedural logic embedded within conventional criminal procedure was formulated prior to the proliferation of decentralized digital ecosystems and contemporary forms of electronically mediated transactions.

Existing scholarship has extensively explored the operational role of electronic evidence within criminal adjudication and digital legal transformation, yet the dominant trend within the literature reveals a tendency to approach electronic evidence primarily as a technological extension of conventional proof rather than as a distinct juridical category requiring systematic procedural harmonization. Studies examining digital era adjudication emphasize that electronic evidence has become indispensable for ensuring legal responsiveness to technologically sophisticated crimes, particularly because digital traces frequently constitute the only accessible form of evidentiary reconstruction in online environments (Sujatmiko & Soesatyo, 2025). Research concerning evidentiary modernization similarly argues that procedural transformation in the digital era necessitates the reinterpretation of authenticity standards, contractual validity, and evidentiary certainty in order to preserve legal legitimacy under conditions of rapid technological disruption (Siregar, 2025).

Empirical discussions focusing on electronic evidence in criminal liability determination further indicate that judicial reliance upon digital evidence has expanded significantly beyond cybercrime into broader categories of criminal prosecution, thereby reshaping the evidentiary balance between material proof and judicial conviction (Suryana & Sakmaf, 2025). Parallel analyses within Southeast Asian criminal justice systems also demonstrate that transparent and accountable criminal enforcement increasingly depends upon procedural clarity regarding digital evidence management, forensic reliability, and institutional coordination between investigative and adjudicative bodies (Widyawati et al., 2025). Although these studies collectively establish the growing centrality of electronic evidence within modern criminal justice administration, they simultaneously expose the absence of a coherent analytical framework capable of reconciling normative fragmentation between procedural law, sectoral legislation, and evidentiary doctrine.

The unresolved tension within the literature becomes particularly visible when examining the divergent procedural foundations governing electronic evidence under Indonesian law, because the Criminal Procedure Code retains a restrictive evidentiary orientation centered upon conventional forms of proof, while the Information and Electronic Transactions Law expands evidentiary recognition without comprehensively redefining procedural safeguards, authentication thresholds, and standards of evidentiary evaluation. Recent scholarship addressing the position of electronic evidence during police investigations illustrates that investigators frequently encounter interpretive uncertainty regarding whether electronic records should be treated as independent evidence or merely as supplementary instruments supporting conventional proof structures (Siregar et al., 2026).

Studies concerning digital gambling prosecutions similarly reveal inconsistencies in judicial reasoning when assessing the reliability and evidentiary sufficiency of electronic data, particularly in cases involving screenshots, transaction histories, and platform generated communications that lack standardized forensic validation mechanisms (Sinaga et al., 2026). Broader discussions on legal certainty in the digital era further identify that regulatory fragmentation has produced doctrinal ambiguity concerning evidentiary hierarchy, procedural legitimacy, and judicial discretion, especially because sectoral regulations governing cyber activities continue to evolve independently from the foundational logic of criminal procedural law (Toyi & Hamidun, 2025). The literature therefore remains constrained by two interrelated limitations, namely the insufficient integration between doctrinal analysis and institutional practice, and the absence of a harmonization oriented framework capable of explaining how conflicting evidentiary standards generate systemic uncertainty within criminal proceedings.

These unresolved inconsistencies possess significant scientific and practical implications because uncertainty concerning the admissibility and authentication of electronic evidence directly affects procedural fairness, prosecutorial effectiveness, judicial consistency, and the protection of defendants' rights within digital era litigation. In practice, fragmented evidentiary standards may encourage discretionary disparities between investigators, prosecutors, and judges, thereby weakening the predictability that constitutes a fundamental component of due process and rule of law principles. The increasing reliance upon digital evidence in criminal proceedings also magnifies the risk that improperly authenticated or procedurally defective electronic information could either undermine legitimate prosecutions or facilitate miscarriages of justice through evidentiary misinterpretation. Existing legal debates have not sufficiently addressed how institutional actors navigate contradictory procedural mandates between general criminal procedure and technologically specific legislation, despite the fact that such contradictions influence evidentiary evaluation from the investigative stage through judicial

adjudication. The urgency of this issue extends beyond doctrinal coherence because Indonesia's accelerating digitalization has generated an enforcement environment in which electronic evidence no longer functions as exceptional proof but rather as a structurally dominant component of criminal case construction. Under these conditions, the absence of harmonized evidentiary standards threatens not only legal certainty but also the broader legitimacy of criminal justice institutions operating within digitally mediated social relations.

This research positions itself within the intersection between criminal procedural law, digital evidence theory, and regulatory harmonization studies by advancing an analytical perspective that treats electronic evidence not merely as an evidentiary object but as a site of normative conflict between overlapping legal regimes. Existing scholarship has predominantly concentrated either on the technical recognition of electronic evidence or on sector specific applications within cyber related prosecutions, leaving insufficient attention to the structural incompatibility between procedural doctrines embedded in different legislative instruments. The present study departs from descriptive approaches by critically examining how normative fragmentation between the Criminal Procedure Code, the Information and Electronic Transactions Law, and sectoral regulations generates inconsistent procedural standards concerning admissibility, authentication, and evidentiary weight. Rather than assuming that statutory recognition automatically produces legal certainty, this research conceptualizes harmonization as a multidimensional process involving doctrinal alignment, procedural standardization, and institutional coordination across the criminal justice system. Such positioning enables the study to contribute to broader international debates concerning the adaptation of evidentiary law within digitally transformed legal environments, particularly in jurisdictions where legal modernization occurs through incremental and sectorally fragmented regulatory reforms.

This study aims to formulate a comprehensive framework for the harmonization of electronic evidence regulation within Indonesia's criminal justice system through a critical doctrinal analysis of conflicting procedural standards governing admissibility, authentication, and evidentiary evaluation. The research seeks to clarify the systemic consequences of normative fragmentation while proposing an integrated interpretive model capable of reconciling conventional criminal procedural principles with the evidentiary demands of digital era adjudication. Theoretically, this study contributes to the development of electronic evidence jurisprudence by reframing harmonization as a central prerequisite for procedural legitimacy in technologically mediated criminal justice systems. Methodologically, the research advances an interdisciplinary legal analysis that integrates statutory interpretation, comparative evidentiary reasoning, and institutional procedural assessment in order to produce a more coherent analytical approach toward digital evidence governance within contemporary criminal adjudication.

RESEARCH METHODS

This study constitutes a non empirical legal research employing a normative doctrinal and comparative legal approach to examine the harmonization of electronic evidence regulation within Indonesia's criminal justice system. The primary legal materials consist of statutory instruments governing criminal procedure and electronic transactions, including the Criminal Procedure Code (Indonesia, 1981), the Information and Electronic Transactions Law (Indonesia, 2008), and Government Regulation Number 71 of 2019 concerning Electronic Systems and Transactions (Indonesia, 2019). Secondary legal materials comprise scholarly monographs, journal articles, and comparative legal studies addressing electronic evidence, procedural legitimacy, and digital adjudication, particularly the analytical framework developed in contemporary electronic evidence scholarship (Mason & Seng, 2021). The research further incorporates conceptual references derived from international legal discourse on evidentiary authenticity, admissibility standards, and procedural harmonization in digitally mediated criminal proceedings. Data collection was conducted through systematic legal document analysis involving statutory mapping, doctrinal classification, and comparative examination of normative provisions regulating the evidentiary status, authentication mechanisms, and procedural treatment of electronic evidence across overlapping regulatory regimes.

The analytical framework of this study is grounded in statutory interpretation, conceptual legal analysis, and systematic harmonization theory in order to identify normative inconsistencies and procedural fragmentation within Indonesia's evidentiary regime. The research applies grammatical, systematic, and teleological interpretation to examine how different legislative instruments construct divergent standards concerning admissibility, evidentiary value, and procedural safeguards relating to

electronic evidence. Comparative doctrinal analysis was employed to evaluate the extent to which sectoral regulations complement or contradict the foundational principles embedded within criminal procedural law, while legal reasoning techniques were utilized to assess the implications of regulatory overlap for judicial certainty and procedural fairness. The interpretative process was further informed by contemporary theories of digital evidence governance and technological neutrality in evidentiary law, enabling the study to construct a coherent analytical model for regulatory harmonization within the broader context of digital era criminal justice administration.

RESULTS AND DISCUSSION

Normative Fragmentation of Electronic Evidence Regulation within Indonesian Criminal Procedure

The juridical construction of electronic evidence within Indonesia's criminal justice system reflects a fragmented regulatory architecture generated by the coexistence of conventional criminal procedural law and technologically oriented sectoral legislation. Article 184 paragraph 1 of the Criminal Procedure Code recognizes only five forms of legal evidence consisting of witness testimony, expert testimony, documentary evidence, indications, and defendant testimony, while Article 5 paragraph 1 of the Information and Electronic Transactions Law expands evidentiary legitimacy by recognizing electronic information and electronic documents as valid legal evidence under Indonesian law (Indonesia, 1981; Indonesia, 2008). This normative dualism produces interpretative uncertainty because the Criminal Procedure Code continues to function as the primary procedural framework governing criminal adjudication despite its historical formulation before the emergence of contemporary digital communication systems. Doctrinal scholarship argues that the absence of explicit procedural synchronization between conventional evidentiary doctrine and digital evidentiary recognition has weakened legal certainty in criminal proceedings involving electronic data, especially concerning authentication standards and evidentiary reliability (Chamim et al., 2025). Comparative analyses within digital evidence scholarship similarly demonstrate that fragmented evidentiary frameworks tend to create judicial inconsistency because different legal instruments operate according to divergent epistemological assumptions regarding proof and procedural legitimacy (Mason & Seng, 2021).

The interpretative conflict between statutory provisions becomes more complex when examining the legal relationship between Article 5 paragraph 1 and Article 44 of the Information and Electronic Transactions Law, because these provisions recognize electronic information as lawful evidence while simultaneously requiring compliance with procedural norms governing criminal investigations and prosecutions. Grammatical interpretation of the Information and Electronic Transactions Law suggests that electronic evidence possesses autonomous evidentiary status equivalent to documentary evidence, yet systematic interpretation within the broader criminal procedural framework indicates that evidentiary admissibility remains subordinated to conventional procedural safeguards embedded within the Criminal Procedure Code (Indonesia, 1981; Indonesia, 2008). Legal scholarship examining electronic trials in Indonesian criminal courts identifies that courts frequently oscillate between expansive and restrictive interpretations of digital evidence depending upon judicial perception regarding evidentiary authenticity and procedural regularity (Ardi & Gusmao, 2026). Similar findings appear in doctrinal analyses concerning electronic criminal justice reform, which indicate that technological adaptation within Indonesian criminal procedure remains institutionally uneven because legislative modernization has not been accompanied by comprehensive procedural codification (Barlian et al., 2025). The resulting legal ambiguity has generated procedural uncertainty concerning whether electronic evidence should function as independent proof or merely as supplementary support for conventionally recognized evidence categories.

The doctrinal instability surrounding electronic evidence also derives from inconsistencies between sectoral regulations governing electronic systems and the evidentiary principles embedded within criminal procedural law. Government Regulation Number 71 of 2019 establishes technical obligations concerning electronic system reliability, data integrity, and electronic certification, particularly through provisions regulating electronic system operators and evidentiary accountability mechanisms (Indonesia, 2019). Teleological interpretation of these provisions indicates that the regulation seeks to strengthen public trust in digital transactions and electronic communications by institutionalizing standards of technological reliability. Judicial practice nevertheless demonstrates that compliance with technical electronic system requirements does not automatically guarantee evidentiary

admissibility within criminal proceedings because courts continue to evaluate electronic data according to procedural doctrines derived from the Criminal Procedure Code. Legal analyses concerning digital legal transformation emphasize that the persistence of conventional evidentiary formalism has prevented Indonesian procedural law from fully integrating technologically mediated forms of proof into criminal adjudication structures (Siregar, 2025). Comparative scholarship similarly notes that procedural modernization requires not only statutory recognition of digital evidence but also doctrinal reconstruction of evidentiary evaluation standards capable of accommodating technologically dynamic forms of information production (Mason & Seng, 2021).

The conflict between formal evidentiary doctrine and technological regulation becomes particularly evident in cases involving digital communication records, platform generated data, and electronic surveillance materials. Indonesian courts frequently confront interpretative dilemmas regarding whether screenshots, chat records, and metadata should satisfy evidentiary standards equivalent to documentary evidence recognized under Article 187 of the Criminal Procedure Code (Indonesia, 1981). Studies concerning the use of closed circuit television evidence demonstrate that courts often rely upon inconsistent authentication criteria because existing legislation does not establish uniform procedural standards governing digital recording verification and forensic validation (Pratiwi & Patmawanti, 2024). Research examining electronic evidence within criminal prosecutions similarly indicates that evidentiary inconsistency frequently emerges from judicial discretion rather than statutory clarity, particularly in cases involving electronically reproduced documents lacking certified digital signatures (Sujatmiko & Soesatyo, 2025). Theoretical perspectives concerning evidentiary legitimacy further suggest that procedural certainty cannot be achieved solely through technological recognition because evidentiary systems depend upon institutional coherence between substantive legal norms and procedural verification mechanisms (Mason & Seng, 2021). The Indonesian evidentiary framework currently reflects an incomplete harmonization process in which statutory modernization has expanded evidentiary categories without resolving procedural contradictions regarding evidentiary authentication and probative evaluation.

Interpretative divergence concerning electronic evidence also intersects with broader debates regarding legal certainty and procedural fairness within digital era adjudication. Article 6 of the Information and Electronic Transactions Law recognizes that electronic information may substitute conventional written documents when information accessibility, integrity, and accountability are guaranteed, yet the Criminal Procedure Code does not provide corresponding procedural guidelines regulating evidentiary verification and judicial assessment (Indonesia, 2008; Indonesia, 1981). Scholars examining legal certainty in the digital era argue that procedural ambiguity concerning electronic evidence weakens the predictability required for effective law enforcement and fair adjudication because litigants cannot anticipate the evidentiary standards that courts may apply in specific cases (Toyi & Hamidun, 2025). Socio legal analyses concerning legal communication within digital criminal justice systems further indicate that technological transformation has altered institutional perceptions regarding evidentiary legitimacy, creating tension between formal procedural legality and practical prosecutorial necessity (Faisal & Ulya, 2026). Comparative legal scholarship examining evidentiary systems in Southeast Asian jurisdictions similarly demonstrates that procedural legitimacy increasingly depends upon the integration of technologically adaptive evidentiary standards within broader due process frameworks (Harahap & Abduh, 2026). The Indonesian regulatory landscape reveals that legal modernization has progressed through fragmented statutory amendments rather than comprehensive procedural harmonization capable of ensuring doctrinal coherence.

Table 1. Normative Inconsistencies Governing Electronic Evidence within Indonesian Criminal Procedure

Legal Instrument	Relevant Provision	Evidentiary Recognition	Procedural Limitation	Juridical Implication
Criminal Procedure Code	Article 184 paragraph 1	Recognizes conventional forms of evidence	Does not explicitly recognize electronic evidence	Restrictive evidentiary interpretation

Information and Electronic Transactions Law	Article 5 paragraph 1	Recognizes electronic information and documents as legal evidence Allows substitution of written documents through electronic information	Requires procedural conformity with existing law	Dual evidentiary interpretation
Information and Electronic Transactions Law	Article 6	Regulates integrity and accountability of electronic systems	No unified authentication mechanism	Procedural inconsistency
Government Regulation Number 71 of 2019	Articles concerning electronic system reliability	Facilitates digital procedural administration	Technical compliance not linked to criminal procedure	Fragmented evidentiary validation
Supreme Court electronic court policies	Electronic administration procedures	Limited criminal evidentiary codification		Administrative procedural overlap

Source: Processed from Indonesia (1981), Indonesia (2008), Indonesia (2019), Mason and Seng (2021), and Ardi and Gusmao (2026).

The normative mapping presented in Table 1 demonstrates that Indonesian electronic evidence regulation operates through overlapping legal instruments that employ different procedural rationalities concerning evidentiary legitimacy and verification. The Criminal Procedure Code continues to preserve a formalistic evidentiary model rooted in conventional proof structures, while the Information and Electronic Transactions Law introduces technologically adaptive evidentiary concepts without comprehensively reconstructing procedural doctrine. Research concerning the role of electronic evidence in criminal law enforcement identifies that inconsistent authentication standards have generated evidentiary disparities across judicial institutions because courts frequently apply divergent interpretations concerning electronic data reliability (Chamim et al., 2025). Similar doctrinal concerns appear in comparative analyses addressing electronic evidence in child related digital investigations, where procedural fragmentation is identified as a major obstacle to evidentiary consistency and institutional coordination across investigative agencies (Nurlaela & Mandala, 2025). The coexistence of partially integrated legal instruments consequently produces a fragmented procedural environment incapable of delivering uniform standards of admissibility and evidentiary assessment.

Doctrinal inconsistencies surrounding electronic evidence are further intensified by the absence of comprehensive judicial interpretation from the Constitutional Court or Supreme Court concerning the hierarchy and procedural status of digital evidence within criminal adjudication. Indonesian judicial institutions have issued administrative regulations facilitating electronic court administration and remote proceedings, yet these procedural innovations primarily address institutional efficiency rather than substantive evidentiary harmonization (Setyowati et al., 2024). Comparative legal studies indicate that jurisdictions successfully integrating electronic evidence into criminal proceedings generally rely upon authoritative judicial interpretation capable of reconciling statutory conflicts and clarifying evidentiary standards across procedural stages (Mason & Seng, 2021). Indonesian criminal courts currently operate within a legal environment where electronic evidence may be recognized substantively yet contested procedurally because judicial interpretation remains fragmented across different case categories. Scholarship examining teleconference evidence within criminal proceedings demonstrates that courts frequently rely upon discretionary balancing between procedural necessity and evidentiary reliability rather than standardized doctrinal principles (Mamulai et al., 2025). Such interpretative inconsistency weakens the institutional legitimacy of digital adjudication because evidentiary outcomes become dependent upon individual judicial orientation rather than coherent legal doctrine.

The legal uncertainty surrounding electronic evidence also possesses broader implications for criminal justice policy and democratic legitimacy within digitally mediated public spheres. Studies concerning virality and criminal justice policy in Indonesia reveal that digital information circulation increasingly shapes prosecutorial priorities and public expectations regarding evidentiary transparency, creating institutional pressure for technologically responsive adjudication mechanisms (Muhammad et al., 2025). At the same time, scholarship examining law enforcement transformation in Indonesia identifies that procedural modernization frequently encounters structural resistance because institutional adaptation proceeds more slowly than technological change (Muliansyah & Rachman, 2025). Comparative analyses of international trade law harmonization and cybercrime regulation further demonstrate that fragmented domestic evidentiary standards may weaken transnational legal cooperation in digital investigations involving cross border electronic transactions (Muhammad et al., 2025). Theoretical perspectives concerning procedural fairness similarly emphasize that evidentiary systems incapable of accommodating digital proof structures risk undermining public confidence in criminal adjudication processes (Jawad, 2025). Indonesia's evidentiary framework currently illustrates the tension between procedural continuity and technological adaptation within rapidly evolving digital legal environments.

The juridical significance of evidentiary harmonization becomes increasingly apparent when examining comparative criminal justice developments in jurisdictions adopting integrated digital evidence frameworks. Comparative studies involving Indonesia and Thailand demonstrate that jurisdictions employing codified procedural standards for electronic evidence tend to achieve greater judicial consistency concerning admissibility, authentication, and evidentiary weight (Harahap & Abduh, 2026). International electronic evidence scholarship similarly argues that effective digital adjudication depends upon harmonized relationships between procedural doctrine, technological reliability standards, and institutional evidentiary practices (Mason & Seng, 2021). Indonesian law currently reflects partial modernization because substantive recognition of electronic evidence has expanded more rapidly than procedural codification and doctrinal integration. Research concerning electronic criminal justice reform identifies that future legal development requires comprehensive synchronization between statutory provisions, judicial interpretation, and evidentiary verification mechanisms in order to avoid procedural fragmentation (Barlian et al., 2025). The harmonization of Indonesian electronic evidence regulation consequently demands not merely legislative amendment but systematic reconstruction of criminal procedural doctrine within technologically transformed adjudicative contexts.

The doctrinal reconstruction of electronic evidence within Indonesia's criminal justice system ultimately requires an interpretative model capable of integrating technological neutrality, procedural fairness, and evidentiary reliability into a coherent legal framework. Systematic interpretation of existing legislation demonstrates that Indonesian law already recognizes the normative legitimacy of electronic evidence, yet the absence of unified procedural standards continues to obstruct consistent judicial implementation (Indonesia, 1981; Indonesia, 2008; Indonesia, 2019). Comparative doctrinal scholarship confirms that legal certainty in digital adjudication depends upon the harmonization of evidentiary norms across legislative hierarchies rather than the isolated enactment of sectoral technological regulations (Adinda et al., 2025). Contemporary legal theory further suggests that evidentiary systems must evolve beyond rigid formalism in order to preserve procedural legitimacy within increasingly digitized social relations and institutional practices (Mason & Seng, 2021). The Indonesian legal system therefore requires a harmonized evidentiary doctrine capable of reconciling procedural continuity with technological transformation while preserving constitutional guarantees of due process and fair trial principles.

Judicial Interpretation and Evidentiary Authentication of Electronic Evidence in Indonesian Courts

The judicial interpretation of electronic evidence within Indonesian criminal proceedings demonstrates a continuing struggle between conventional evidentiary formalism and technologically mediated proof structures that increasingly dominate contemporary criminal adjudication. Article 184 paragraph 1 of the Criminal Procedure Code establishes a restrictive evidentiary system grounded in the principle of negative statutory proof, while Article 5 paragraph 1 and Article 6 of the Information and Electronic Transactions Law extend evidentiary legitimacy to electronic information and electronic

documents under conditions of accessibility, integrity, and accountability (Indonesia, 1981; Indonesia, 2008). Indonesian courts consequently confront interpretative dilemmas concerning whether electronic evidence should possess autonomous evidentiary authority or remain dependent upon corroboration through conventionally recognized forms of proof. Judicial reasoning in criminal proceedings involving digital communication records frequently reveals inconsistent standards regarding admissibility because judges continue to apply evidentiary doctrines originally designed for physical documentary evidence rather than electronically generated information systems (Ardi & Gusmao, 2026). Comparative electronic evidence scholarship similarly emphasizes that evidentiary legitimacy in digital adjudication depends not merely upon statutory recognition but upon coherent judicial methodologies capable of evaluating authenticity, reliability, and procedural fairness in technologically complex evidentiary environments (Mason & Seng, 2021).

The doctrinal complexity surrounding electronic evidence becomes particularly visible in judicial assessment of evidentiary authenticity because Indonesian procedural law lacks comprehensive standards governing forensic verification and chain of custody requirements for digital materials. Courts frequently encounter evidentiary disputes concerning screenshots, digital conversations, metadata records, and online transaction histories whose authenticity depends upon technical verification beyond conventional documentary examination. Legal scholarship examining the role of digital evidence in criminal law enforcement demonstrates that evidentiary inconsistency often emerges from judicial uncertainty regarding whether electronically reproduced information satisfies procedural reliability standards required for criminal conviction (Chamim et al., 2025). Teleological interpretation of Article 5 paragraph 1 of the Information and Electronic Transactions Law indicates legislative intent to modernize evidentiary recognition within digital society, yet systematic interpretation within the broader criminal procedural framework reveals the persistence of doctrinal ambiguity concerning evidentiary hierarchy and verification procedures (Indonesia, 2008). Comparative doctrinal analyses similarly note that judicial inconsistency frequently arises when legal systems recognize electronic evidence substantively without simultaneously codifying technical evidentiary assessment standards applicable within criminal adjudication processes (Mason & Seng, 2021).

Judicial evaluation of electronic evidence in Indonesian criminal courts also intersects with the principle of minimum *bewijs* embedded within the evidentiary structure of the Criminal Procedure Code. Article 183 of the Criminal Procedure Code requires judges to obtain conviction through at least two valid forms of evidence accompanied by judicial certainty concerning criminal culpability, thereby creating doctrinal tension when electronic evidence constitutes the primary evidentiary basis in digital crime prosecutions (Indonesia, 1981). Courts handling cybercrime and digital gambling cases frequently confront interpretative difficulties regarding whether electronic records alone may satisfy evidentiary sufficiency requirements under the principle of negative statutory proof. Research concerning electronic evidence in digital gambling prosecutions demonstrates that judges often require supplementary testimonial or documentary evidence even when electronic transaction records and communication data provide substantial evidentiary indications concerning criminal conduct (Sinaga et al., 2026). Comparative scholarship examining criminal liability and electronic evidence similarly argues that judicial hesitation toward autonomous electronic proof reflects continuing adherence to conventional evidentiary epistemology rather than principled analysis of technological reliability and digital authenticity standards (Suryana & Sakmaf, 2025).

The evidentiary treatment of teleconference testimony within Indonesian criminal proceedings further illustrates the doctrinal uncertainty surrounding technologically mediated forms of proof and procedural participation. Judicial acceptance of teleconference evidence increased significantly following procedural adaptations implemented during digital court modernization, particularly through electronic court policies and remote hearing practices recognized within judicial administrative regulations (Setyowati et al., 2024). Legal analyses concerning teleconference evidence indicate that Indonesian courts frequently prioritize procedural necessity and judicial efficiency when admitting remote testimony, although evidentiary assessment standards concerning identity verification, communication integrity, and witness reliability remain inconsistently applied across different judicial forums (Mamulai et al., 2025). Comparative doctrinal interpretation suggests that remote testimony challenges traditional evidentiary doctrines because physical courtroom presence historically functioned as an essential mechanism for evaluating witness credibility and judicial immediacy. Contemporary legal scholarship concerning digital adjudication consequently argues that procedural

fairness in electronic hearings requires doctrinal reconstruction capable of integrating technological mediation into evidentiary assessment without compromising due process guarantees and adversarial procedural rights (Jawad, 2025).

Judicial treatment of closed circuit television evidence similarly reveals interpretative inconsistency concerning the authentication and evidentiary weight of electronically recorded visual information within criminal proceedings. Indonesian courts generally recognize closed circuit television recordings as admissible electronic evidence under Article 5 paragraph 1 of the Information and Electronic Transactions Law, yet the absence of codified forensic verification standards frequently produces divergent judicial evaluations regarding evidentiary reliability (Indonesia, 2008). Legal analyses examining the evidentiary use of closed circuit television recordings demonstrate that some courts emphasize technical integrity and recording continuity, while others prioritize contextual corroboration through witness testimony or expert explanation concerning the recording process (Pratiwi & Patmawanti, 2024). Comparative electronic evidence doctrine indicates that visual digital evidence possesses heightened persuasive influence within criminal proceedings because judges often perceive audiovisual recordings as direct representations of factual reality despite the possibility of technological manipulation or contextual distortion (Mason & Seng, 2021). Indonesian evidentiary practice currently reflects a procedural environment in which judicial discretion frequently substitutes for standardized forensic protocols concerning the verification and interpretation of electronically recorded visual evidence.

Table 2. Judicial Standards for Authentication and Admissibility of Electronic Evidence in Indonesian Criminal Proceedings

Type of Electronic Evidence	Legal Basis	Authentication Requirement	Judicial Interpretation	Evidentiary Limitation
Closed circuit television recordings	Article 5 paragraph 1 Information and Electronic Transactions Law	Verification of recording integrity and source reliability	Accepted when supported by contextual evidence	Vulnerable to manipulation claims
Chat records and screenshots	Article 6 Information and Electronic Transactions Law	Metadata confirmation and forensic extraction	Frequently treated as supplementary evidence	Questions concerning authorship authenticity
Electronic signatures	Government Regulation Number 71 of 2019	Certification and system integrity validation	Recognized when linked to certified systems	Dependence upon electronic certification infrastructure
Teleconference testimony	Supreme Court electronic court policies	Identity verification and communication stability	Admitted under procedural necessity doctrine	Reduced judicial immediacy and credibility assessment
Digital transaction records	Article 184 Criminal Procedure Code in conjunction with Article 5 Information and Electronic Transactions Law	Chain of custody and transactional verification	Considered strong corroborative evidence	Requires additional evidentiary corroboration
Metadata and forensic logs	Government Regulation Number 71 of 2019	Digital forensic examination	Increasingly recognized in cybercrime cases	Technical interpretation dependent upon expert testimony

Source: Processed from Pratiwi and Patmawanti (2024), Mamulai et al. (2025), Sinaga et al. (2026), Chamim et al. (2025), and Mason and Seng (2021).

The normative mapping presented in Table 2 demonstrates that Indonesian courts apply differentiated authentication standards depending upon the form and technical complexity of electronic evidence submitted during criminal proceedings. Closed circuit television recordings and teleconference testimony generally receive broader judicial acceptance because their evidentiary function resembles conventional visual or testimonial proof structures familiar within traditional criminal adjudication. Chat records, metadata, and electronic transaction histories encounter more restrictive evidentiary scrutiny because judges frequently question data integrity, authorship reliability, and the procedural continuity of electronic evidence extraction processes. Comparative scholarship concerning evidentiary authentication confirms that digital evidence requires multilayered verification involving technological integrity, procedural legality, and contextual corroboration in order to satisfy criminal evidentiary standards (Chamim et al., 2025). Indonesian judicial practice consequently reveals that evidentiary admissibility remains strongly influenced by judicial perception regarding technological reliability rather than by unified doctrinal standards governing digital authentication procedures.

The absence of comprehensive procedural codification concerning chain of custody requirements has further intensified judicial inconsistency in evaluating electronic evidence within criminal litigation. Indonesian criminal procedure does not explicitly regulate the procedural stages through which electronic evidence must be collected, preserved, transferred, and presented before judicial forums, despite the central importance of evidentiary integrity within digital forensic processes. Legal scholarship examining electronic evidence during police investigations demonstrates that investigators frequently rely upon institution specific operational practices rather than unified statutory standards when handling digital materials obtained from electronic devices and online communication systems (Siregar et al., 2026). Comparative criminal procedure scholarship similarly indicates that evidentiary integrity in digital investigations depends upon transparent procedural documentation capable of preventing unauthorized alteration, duplication, or evidentiary contamination during investigative processes (Harahap & Abduh, 2026). The Indonesian evidentiary framework currently leaves substantial discretionary authority to investigators and judges regarding the procedural evaluation of digital evidence authenticity, thereby weakening legal certainty and procedural predictability within criminal adjudication.

Judicial interpretation of electronic evidence also reflects broader tensions concerning due process guarantees and the expansion of technologically mediated criminal enforcement mechanisms within digital society. Courts increasingly confront evidentiary disputes involving social media communications, online behavioral traces, and electronically generated transactional patterns that significantly influence prosecutorial narratives concerning criminal liability. Scholarship examining legal communication within digital criminal justice systems argues that technological transformation has altered institutional perceptions concerning evidentiary credibility because electronically mediated information increasingly shapes judicial understanding of factual reconstruction and criminal responsibility (Faisal & Ulya, 2026). Comparative legal analyses concerning justice and virality similarly indicate that digital information circulation may create indirect pressure upon judicial institutions to privilege electronically visible evidence despite unresolved questions concerning authenticity and contextual reliability (Muhammad et al., 2025). The expansion of electronic evidence within criminal proceedings consequently raises constitutional concerns regarding the balance between effective law enforcement, procedural fairness, and protection against arbitrary evidentiary interpretation within technologically mediated adjudicative environments.

Doctrinal inconsistencies concerning evidentiary authentication further intersect with institutional transformations occurring within Indonesian electronic court administration and digital procedural modernization. Judicial reforms facilitating electronic hearings and digital procedural administration have accelerated the institutional normalization of technologically mediated adjudication, yet substantive evidentiary doctrine continues to develop unevenly across different procedural contexts (Setyowati et al., 2024). Comparative studies examining electronic criminal justice systems emphasize that procedural modernization requires integration between judicial technology infrastructure and doctrinal evidentiary safeguards capable of preserving fair trial principles under

digital conditions (Barlian et al., 2025). Indonesian courts currently demonstrate partial adaptation toward digital adjudication because technological procedural mechanisms have expanded more rapidly than evidentiary harmonization and forensic standardization. Scholarship examining transformation within Indonesian law enforcement similarly identifies that institutional modernization often proceeds through fragmented administrative adaptation rather than comprehensive procedural reconstruction grounded in unified evidentiary doctrine (Muliansyah & Rachman, 2025). The resulting procedural asymmetry has generated a judicial environment in which electronic evidence possesses increasing practical significance without corresponding doctrinal clarity regarding authentication, admissibility, and evidentiary reliability.

The interpretative evolution of electronic evidence within Indonesian criminal courts ultimately reflects a broader transformation in the relationship between procedural legality, technological development, and judicial authority within contemporary criminal justice administration. Article 5 paragraph 1 and Article 6 of the Information and Electronic Transactions Law have established normative recognition of electronic evidence, yet judicial implementation continues to depend heavily upon discretionary interpretation concerning authenticity, evidentiary sufficiency, and procedural legitimacy (Indonesia, 2008). Comparative electronic evidence doctrine confirms that effective digital adjudication requires institutional convergence between statutory recognition, forensic methodology, and judicial evidentiary reasoning capable of ensuring both technological responsiveness and procedural fairness (Mason & Seng, 2021). Indonesian criminal adjudication presently operates within an intermediate doctrinal stage characterized by expanding technological acceptance alongside persistent procedural uncertainty concerning evidentiary verification and judicial evaluation standards. The continuing absence of harmonized evidentiary doctrine concerning authentication and admissibility consequently remains a central obstacle to the development of coherent and legally predictable digital criminal justice administration in Indonesia.

Toward a Harmonized Model of Electronic Evidence Governance in Indonesian Criminal Justice

The harmonization of electronic evidence governance within Indonesian criminal justice requires a comprehensive doctrinal reconstruction capable of integrating procedural legality, technological neutrality, and constitutional due process into a coherent evidentiary framework. Article 184 paragraph 1 of the Criminal Procedure Code continues to reflect a conventional evidentiary paradigm that structurally predates digital communication systems, while Article 5 paragraph 1 and Article 6 of the Information and Electronic Transactions Law establish fragmented normative extensions concerning electronic evidence without fully integrating procedural safeguards applicable within criminal adjudication (Indonesia, 1981; Indonesia, 2008). Government Regulation Number 71 of 2019 further introduces technical standards concerning electronic system reliability and accountability, although its operational relationship with criminal procedural law remains institutionally disconnected and doctrinally underdeveloped (Indonesia, 2019). Comparative legal scholarship emphasizes that evidentiary harmonization requires synchronization between substantive evidentiary recognition and procedural verification mechanisms capable of ensuring legal certainty within digitally mediated adjudicative processes (Mason & Seng, 2021). Indonesian criminal procedure consequently requires a harmonized evidentiary doctrine capable of reconciling statutory fragmentation through integrated normative interpretation and systematic procedural reconstruction.

The necessity for doctrinal harmonization emerges from the structural incompatibility between conventional evidentiary theory and contemporary digital evidentiary realities that increasingly dominate criminal litigation and investigative processes. Comparative studies concerning criminal evidentiary systems in Southeast Asia indicate that legal systems maintaining fragmented evidentiary regulation frequently experience procedural inconsistency, judicial unpredictability, and weakened public trust concerning evidentiary fairness within digital proceedings (Harahap & Abduh, 2026). Indonesian procedural law currently distributes electronic evidence governance across multiple legislative instruments without establishing unified standards concerning admissibility, authentication, evidentiary hierarchy, and forensic verification. Teleological interpretation of the Information and Electronic Transactions Law indicates legislative intent to modernize evidentiary recognition within electronic society, yet grammatical and systematic interpretation of the Criminal Procedure Code continues to privilege conventional proof structures that inadequately accommodate technological transformation (Indonesia, 1981; Indonesia, 2008). Legal harmonization consequently requires

normative integration capable of aligning procedural criminal law with technological developments while preserving constitutional protections relating to fair trial guarantees and evidentiary reliability.

Comparative legal analysis demonstrates that jurisdictions successfully integrating electronic evidence within criminal adjudication generally adopt unified evidentiary doctrines emphasizing technological neutrality, forensic standardization, and institutional coordination between investigative and judicial authorities. Studies examining transnational approaches toward digital evidence governance reveal that harmonized evidentiary systems typically codify procedural safeguards concerning chain of custody, metadata integrity, digital authentication, and evidentiary preservation within criminal procedural legislation rather than dispersing such norms across fragmented administrative regulations (Nurlaela & Mandala, 2025). Indonesian evidentiary regulation presently lacks integrated procedural codification capable of synchronizing Article 184 paragraph 1 of the Criminal Procedure Code with the operational standards established through Government Regulation Number 71 of 2019. Scholarship concerning harmonization within cybercrime regulation similarly argues that fragmented legal structures weaken procedural predictability because overlapping norms frequently generate contradictory institutional interpretation during criminal investigations and prosecutions (Muhammad et al., 2025). The reconstruction of Indonesian electronic evidence governance consequently requires institutional synchronization capable of integrating legislative coherence, procedural clarity, and technological accountability into a unified criminal evidentiary framework.

The reconstruction of electronic evidence governance also necessitates constitutional alignment between procedural modernization and due process protection within criminal adjudication. Comparative scholarship concerning legal certainty in the digital era emphasizes that technological adaptation within criminal justice systems cannot merely prioritize administrative efficiency because evidentiary governance directly affects constitutional guarantees concerning equality before the law, presumption of innocence, and judicial impartiality (Toyi & Hamidun, 2025). Indonesian criminal procedure presently lacks explicit constitutional safeguards regulating algorithmic interpretation, digital surveillance evidence, and technologically mediated evidentiary acquisition despite the increasing use of electronic systems within criminal enforcement practices. Comparative doctrinal studies further indicate that constitutional due process within digital adjudication requires transparent evidentiary standards capable of preventing arbitrary evidentiary interpretation and disproportionate prosecutorial reliance upon technologically generated information (Widyawati et al., 2025). The future harmonization of Indonesian electronic evidence regulation consequently depends upon constitutional integration between technological governance and procedural fairness principles embedded within democratic criminal justice administration.

The doctrinal harmonization model proposed within this study places procedural codification at the center of evidentiary modernization by integrating evidentiary recognition, forensic authentication, and institutional accountability into a unified criminal procedural structure. Revision of the Criminal Procedure Code becomes essential because Article 184 paragraph 1 currently fails to explicitly codify electronic evidence as an autonomous evidentiary category possessing independent procedural legitimacy within criminal proceedings (Indonesia, 1981). Comparative legal scholarship concerning digital procedural reform demonstrates that statutory recognition alone remains insufficient unless accompanied by explicit evidentiary standards governing acquisition, preservation, authentication, and judicial assessment of electronic information systems (Mason & Seng, 2021). Institutional synchronization between the Criminal Procedure Code, the Information and Electronic Transactions Law, and Government Regulation Number 71 of 2019 should consequently establish unified evidentiary procedures applicable across investigative, prosecutorial, and judicial stages of criminal adjudication. Legal reconstruction within Indonesian criminal justice therefore requires a doctrinal transition from fragmented evidentiary pluralism toward integrated procedural codification grounded in technological neutrality and constitutional legality.

Table 3. Proposed Harmonization Framework for Electronic Evidence Governance in Indonesia

Regulatory Problem	Existing Legal Gap	Harmonization Mechanism	Comparative Reference	Expected Juridical Outcome
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Dualism of evidentiary admissibility	Separation between Article 184 Criminal Procedure Code and Article 5 Information and Electronic Transactions Law	Codification of electronic evidence within revised Criminal Procedure Code	Mason and Seng 2021	Unified evidentiary recognition
Absence of authentication standards	Lack of forensic procedural codification	National digital forensic standards integrated into procedural law	Harahap and Abduh 2026	Increased evidentiary reliability
Fragmented procedural norms	Overlapping statutory and administrative regulations	Vertical and horizontal regulatory synchronization	Muhammad et al. 2025	Procedural legal certainty
Weak institutional coordination	Disconnected investigative and judicial evidentiary procedures	Integrated institutional evidentiary governance	Widyawati et al. 2025	Consistent evidentiary administration
Lack of comparative evidentiary adaptation	Limited doctrinal modernization concerning digital evidence	Comparative legal transplantation and procedural reform	Nurlaela and Mandala 2025	Harmonized digital due process
Inconsistent judicial interpretation	Divergent evidentiary reasoning among courts	Unified judicial evidentiary guidelines	Toyi and Hamidun 2025	Predictable judicial interpretation

Source: Processed from Mason and Seng (2021), Harahap and Abduh (2026), Nurlaela and Mandala (2025), Muhammad et al. (2025), Toyi and Hamidun (2025), and Widyawati et al. (2025).

The harmonization framework presented in Table 3 demonstrates that doctrinal reconstruction within Indonesian criminal justice must operate simultaneously through vertical and horizontal synchronization mechanisms involving legislation, administrative regulation, and judicial interpretation. Vertical harmonization requires alignment between the Criminal Procedure Code, the Information and Electronic Transactions Law, and Government Regulation Number 71 of 2019 in order to eliminate contradictory evidentiary standards concerning admissibility and procedural legitimacy. Horizontal harmonization requires institutional coordination among law enforcement agencies, prosecutorial institutions, forensic authorities, and judicial bodies concerning standardized evidentiary governance procedures. Comparative legal scholarship concerning digital evidence governance consistently emphasizes that fragmented evidentiary administration produces inconsistent procedural outcomes because different institutions frequently apply divergent technological verification standards within criminal proceedings (Nurlaela & Mandala, 2025). Indonesian evidentiary reform consequently requires integrated institutional governance capable of ensuring coherent evidentiary administration throughout the entire criminal justice process.

The comparative dimension of harmonization also demonstrates that Indonesian procedural reform may benefit from selective doctrinal transplantation involving technologically responsive evidentiary principles developed within comparative legal systems. Comparative criminal procedure studies indicate that technologically adaptive jurisdictions frequently establish codified forensic protocols, centralized digital evidence management standards, and judicial evidentiary guidelines specifically regulating electronic proof within criminal adjudication (Harahap & Abduh, 2026). Indonesian criminal justice currently relies heavily upon discretionary interpretation because procedural

law does not provide sufficiently detailed guidance concerning electronic evidentiary governance and digital due process protection. Scholarship concerning transformation within Indonesian law enforcement similarly argues that procedural modernization requires institutional restructuring grounded in coherent normative integration rather than fragmented administrative adaptation responding reactively to technological developments (Muliansyah & Rachman, 2025). Comparative legal reasoning consequently supports the development of Indonesian evidentiary reform through contextual adaptation rather than mechanical transplantation of foreign procedural models.

The harmonization model proposed within this study further requires integration between evidentiary governance and institutional communication structures operating within digital criminal justice administration. Legal scholarship examining transformation of legal communication in technologically mediated judicial systems emphasizes that procedural legitimacy increasingly depends upon transparent institutional coordination concerning evidentiary acquisition, verification, and judicial interpretation within digital proceedings (Faisal & Ulya, 2026). Indonesian criminal adjudication presently demonstrates institutional fragmentation because investigative agencies, forensic experts, prosecutors, and judges frequently operate under divergent evidentiary assumptions concerning electronic information systems and technological reliability. Comparative institutional studies similarly indicate that evidentiary inconsistency often reflects organizational asymmetry rather than merely doctrinal ambiguity because procedural institutions interpret digital evidence through different operational priorities and technological capacities (Putra & Kartadipura, 2026). Effective harmonization consequently requires institutional synchronization capable of integrating procedural communication, forensic accountability, and evidentiary transparency throughout criminal adjudication processes.

The future reconstruction of Indonesian electronic evidence governance ultimately depends upon the establishment of a unified evidentiary doctrine capable of integrating constitutional legality, procedural certainty, and technological responsiveness into a coherent criminal justice framework. Harmonization between the Criminal Procedure Code, the Information and Electronic Transactions Law, and Government Regulation Number 71 of 2019 must move beyond symbolic statutory recognition toward integrated procedural codification regulating admissibility, authentication, forensic verification, and judicial assessment of electronic evidence (Indonesia, 1981; Indonesia, 2008; Indonesia, 2019). Comparative legal scholarship confirms that effective digital criminal justice administration requires doctrinal coherence capable of preserving procedural fairness while accommodating technological transformation within evidentiary processes (Mason & Seng, 2021). Indonesian criminal procedure presently occupies a transitional stage in which technological modernization has expanded more rapidly than doctrinal harmonization and institutional synchronization. The development of a harmonized evidentiary governance model consequently represents an essential juridical prerequisite for ensuring legal certainty, constitutional due process, and institutional legitimacy within Indonesia's evolving digital criminal justice system.

CONCLUSION

The regulation of electronic evidence within Indonesia's criminal justice system continues to experience significant doctrinal fragmentation resulting from the structural inconsistency between the Criminal Procedure Code, the Information and Electronic Transactions Law, and sectoral electronic system regulations governing technological accountability and procedural verification. The analysis demonstrates that normative divergence concerning admissibility, authentication, evidentiary hierarchy, and forensic validation has produced inconsistent judicial interpretation regarding the procedural legitimacy and probative value of electronic evidence in criminal proceedings. Judicial practice further reveals that evidentiary uncertainty is intensified by the absence of unified standards regulating chain of custody, metadata integrity, teleconference testimony, digital forensic examination, and the relationship between electronic evidence and the principle of negative statutory proof. Comparative legal analysis confirms that effective electronic evidence governance requires integrated procedural codification, institutional synchronization, and technologically responsive evidentiary safeguards capable of preserving constitutional due process and legal certainty within digital adjudication. The proposed harmonization model consequently emphasizes reconstruction of criminal procedural law through unified evidentiary doctrine, standardized forensic authentication, synchronized institutional regulation, and coherent judicial interpretation in order to establish a consistent, accountable, and

constitutionally legitimate framework for electronic evidence administration within Indonesia's evolving digital criminal justice system.

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