



Law and Judicial Review

e-ISSN: 3108-9534

Vol 02 (1) 2026 p. 11-21

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Received: 1 April 2026;

Accepted: 18 April 2026;

Published: 22 April 2026.

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Conflict of interest statement:

Author(s) reported no conflict of interest

DOI: [http://doi.org/10.70764/gdpu-ljr.2026.2\(1\)-2](http://doi.org/10.70764/gdpu-ljr.2026.2(1)-2)

REGULATING ELECTRONIC NOTARIAL DEEDS: A JURISDICTIONAL PERSPECTIVE FROM INDONESIA

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ABSTRACT

Objective: To analyze the legal framework of electronic notarial deeds (cyber notary) from a jurisdictional perspective, examine their evidentiary value within the Indonesian legal system, and evaluate the level of harmonization between the Notary Profession Law (UUJN) and the legal regime governing electronic documents and transactions.

Research Design & Methods: This study employs a normative legal research method using legislative, conceptual, and comparative approaches to assess the consistency and alignment of relevant legal frameworks, including the Civil Code, UUJN, and the ITE Law.

Findings: The study identifies significant inconsistencies and regulatory gaps between the requirements for authentic deeds under the Civil Code and the recognition of electronic documents under the ITE Law. These discrepancies lead to legal uncertainty regarding notarial jurisdiction, the validity of electronic deeds and protocols, and the recognition of electronic signatures, particularly in cross-border transactions.

Contributions: This study provides conceptual and normative contributions to the development of notarial law in the digital era by emphasizing jurisdiction as a central issue in cyber notary practices and proposing a framework for regulatory harmonization. Practically, it offers guidance for policymakers and legal practitioners in formulating clearer regulations and standardized electronic notary procedures. Academically, it enriches legal discourse on the intersection between conventional notarial principles and digital legal systems, while socially, it supports improved public access to legal services.

Novelty: The novelty of this study lies in its focus on jurisdictional aspects as the core issue in cyber notary implementation, along with proposing the adaptation of the *lex loci actus* principle into the digital context and the development of a standardized electronic notary protocol.

Keywords: Electronic Notarial Deeds; Cyber Notaries; Jurisdiction

JEL codes: K10; K15; K19

Article type: research paper

INTRODUCTION

The development of information technology has brought significant transformations in various aspects of life, including in the legal and administrative systems of the state. In Indonesia, the digitization of public services and legal transactions has become a necessity in line with the implementation of various regulations related to the implementation of electronic systems. The profession of notary as a public official authorized to make authentic deeds has not escaped the impact of this digitization. The enactment of Law No. 2 of 2014 concerning Amendments to Law No. 30 of 2004 concerning the Position of Notary has opened up opportunities for the application of information technology in the performance of notarial duties, particularly through the concept of electronic notarial deeds or cyber notaries. The transformation from conventional paper-based deeds to electronic deeds has complex legal implications, particularly in relation to jurisdiction, evidentiary value, and legal certainty.

Electronic notarial deeds are a manifestation of the concept of dematerialization of legal documents, which aims to improve the efficiency, effectiveness, and accessibility of notarial services amid the acceleration of digital transformation. However, the implementation of the cyber notary concept in Indonesia still faces significant structural and normative obstacles, mainly due to the lack of synchronization between the Notary Position Law (UUJN) and the Electronic Information and Transaction Law (ITE Law). A number of studies show that although the UUJN has opened up space for the use of electronic certification by notaries, the absence of comprehensive technical regulations related to identity verification mechanisms, authentication of parties, and security standards in the digital environment has created uncertainty in electronic notarial practice, thereby potentially giving rise to legal and professional ethical risks (Salsabila & Patras, 2022; Yudha, 2024). The dominance of the conventional

legal paradigm, which still requires the physical presence of the parties and the notary in the deed creation process, also hinders the recognition and evidentiary power of electronic notarial deeds, which ultimately has an impact on weak legal certainty and protection for parties acting in good faith (Gunawan & Erniyanti, 2025; Herliyan et al., 2025).

The dimension of jurisdiction is a crucial aspect in the discussion of electronic notarial deeds, given the borderless nature of electronic transactions and their ability to cross territorial boundaries. In the context of Indonesian law, notary jurisdiction is limited to the province where the notary is appointed, as stipulated in Article 18 of the Notary Law. However, when deeds are created electronically with parties located in different geographical locations, questions arise regarding how to determine the place of creation of the deed and whether these territorial jurisdiction restrictions are still relevant. A study conducted by Wulandari (2025) reveals that the ambiguity of jurisdictional regulations in the creation of electronic deeds has the potential to cause legal disputes and uncertainty regarding which law applies and which court has jurisdiction in the event of a dispute.

The evidentiary value of electronic notarial deeds is also an important consideration in the discourse on evidence law in Indonesia. Conventional notarial deeds have full evidentiary value as authentic deeds under Article 1868 of the Civil Code, but the transformation to electronic format raises questions about whether electronic deeds can have equal standing. Research by Dharma et al., (2024) and Musdamayanti and Lestari (2022) explains that although Article 5 paragraph (1) of the ITE Law recognizes electronic documents as valid evidence, there are fundamental differences in terms of how the authenticity of physical and electronic documents is verified, which has implications for their evidentiary value in court. Technical challenges such as ensuring data integrity, preventing manipulation, and guaranteeing non-repudiation in a digital environment are important prerequisites for electronic notarial deeds to be accepted as perfect evidence.

A comparison with the legal systems of other countries shows that a number of jurisdictions have developed a more comprehensive legal framework to accommodate electronic notaries. A comparative study conducted by Koos (2023) on the implementation of e-notaries in several European countries shows that the success of such systems is largely determined by the availability of adequate technological infrastructure, standardization of notary procedures, and clear regulations regarding electronic signatures and digital identity verification systems. This international experience provides important lessons for Indonesia in designing more detailed and systematic regulations for electronic notarial deeds, particularly in harmonizing the territorial jurisdiction of notaries with the cross-border nature of electronic transactions.

Based on the complexity of the issues described above, an in-depth study of electronic notarial deeds from a jurisdictional perspective is highly relevant and urgent. This study aims to analyze the legal framework governing electronic notarial deeds in Indonesia, particularly in identifying jurisdictional issues arising from the application of information technology in notarial services. Furthermore, this study also aims to examine the evidentiary strength of electronic notarial deeds in the Indonesian legal system and evaluate the harmonization between the Notary Profession Law and other laws and regulations related to electronic transactions and documents. Using a normative juridical approach, this study is expected to contribute theoretically to the development of the concept of electronic notarial deeds in line with the principle of legal certainty, while also providing practical recommendations for policymakers in improving regulations related to cyber notaries in Indonesia. The results of this study are expected to serve as a reference in efforts to modernize notarial services without sacrificing the fundamental principles of authentic deeds as perfect evidence in the Indonesian legal system.

LITERATURE REVIEW

The Concept of Notarial Deeds in the Indonesian Legal System

Notarial deeds are a form of authentic deeds that have the highest legal standing in the civil evidence system because they are drawn up by or in the presence of a notary as a public official in accordance with the form and procedures strictly stipulated in the Notary Law. This is in line with the provisions of Article 1868 of the Civil Code, which states that an authentic deed is a deed drawn up in accordance with the format stipulated by law by a public official authorized in the area where the deed is drawn up. The authenticity of a notarial deed is not only formal in nature but also stems from interrelated substantive aspects. Royce and Sudiro (2024) state that there are three main pillars that form the authenticity of a notarial deed, namely the fulfillment of the deed format requirements in accordance with laws and regulations, the existence of the notary's authority as a legitimate public official, and the suitability of the notary's jurisdiction at the time the deed was drawn up. These three aspects are cumulative and inseparable, because a violation of one of them can reduce the degree of the deed from authentic to a private deed, thus directly implying the loss of the perfect evidentiary power that is legally attached to notarial deeds as the strongest and most binding written evidence.

Notarial deeds have comprehensive evidentiary power because they cover three main layers, namely external evidentiary power (*uitwendige bewijskracht*), which confirms the validity of the deed as an authentic deed in appearance, formal probative force (*formele bewijskracht*), which guarantees that the events and legal processes in the deed have been carried out in accordance with the procedures stipulated by law, and material probative force, which binds the parties to the truth of the substance or content of the statements contained in the deed. These three dimensions make notarial deeds a written evidence with perfect evidentiary force in civil law. Saffanah

and Rizkianti (2021) emphasize that this perfect evidentiary nature provides certainty and legal protection for the parties, because notarial deeds must be considered true and valid from the outset until there is a court decision proving otherwise. However, with the development of digitization of notarial services and the discourse on the application of electronic notarial deeds, legal issues have arisen regarding the continuity of this evidentiary power, particularly whether the physical, formal, and material evidentiary power can be fully maintained in the form of electronic documents that have different technical and evidentiary characteristics compared to conventional physical-based deeds.

In the Indonesian legal system, the existence of notarial deeds is regulated in the Notary Law, which explains the scope, authority, and procedures for the creation of deeds by notaries. Deeds created by notaries are called authentic deeds, which means that they are created according to specific forms and procedures regulated by law and serve as strong written evidence in court. Notaries are required to draw up deeds for all specific legal actions that must be made in authentic form by law. This provides legal protection to the parties and also ensures that the document is trustworthy and reliable in the settlement of legal matters. Due to the highly strategic position of notarial deeds, they also serve as a preventive instrument to avoid disputes in the future. Thus, notarial deeds not only serve as evidence of transactions, but also as a means of ratification that provides formal and legal guarantees in legal actions. Therefore, notarial deeds play an important role in ensuring that transactions and agreements made by the parties have met all applicable legal requirements and are legally accountable.

The Development of Cyber Notaries and Electronic Notarial Deeds

The concept of cyber notaries often referred to as electronic notaries is a response to developments in information technology and the need for efficiency in the implementation of notarial services in the modern legal environment. In the Indonesian legal system, the basis for recognition of this practice explicitly appears in the Explanation of Article 15 paragraph of Law Number 2 of 2014 concerning Amendments to Law Number 30 of 2004 concerning the Position of Notary (UUJN), which gives notaries the authority to certify transactions conducted electronically (cyber notary) along with other authorities such as the creation of waqf deeds and aircraft mortgages. However, more detailed regulations regarding the procedures for exercising this authority have not been comprehensively formulated in the UUJN itself or in other implementing regulations, so that the practice of cyber notary still faces a legal vacuum and varying interpretations of the scope of its authority (Widiasih, 2020).

Electronic notarial deeds have different technical and procedural characteristics compared to conventional notarial deeds that are made in physical form. Nurmawati et al., (2023) describe electronic notarial deeds as deeds whose entire process, from creation and signing to storage, is carried out digitally with the support of specific security systems, such as the use of certified electronic signatures and encryption technology to ensure document integrity and authentication. The main differences between the two forms of deeds lie in the storage media, which is no longer paper-based, the signing mechanism, which uses an electronic system, and the method of verifying the validity of documents, which depends on information technology infrastructure. However, the transformation of deeds into electronic format must not eliminate the essence of notarial deeds as authentic evidence, namely the conscious expression of the parties' intentions, set forth in writing, and having the same evidentiary force and legal certainty as conventional notarial deeds.

Notary Jurisdiction in Conventional and Electronic Contexts

Notary jurisdiction in the Indonesian legal system is territorial in nature, i.e., limited to the administrative province where the notary is appointed, as stipulated in Article 18 paragraph (1) of the Notary Position Law (UUJN). This limitation of jurisdiction is based on the principle of territorial sovereignty of the state, which places the authority of public officials, including notaries, within certain legal boundaries to ensure administrative order and legal certainty. Arben and Utama (2024) clarify that the regulation of notary territorial jurisdiction aims to facilitate the supervisory mechanism by the Regional Supervisory Council, while also providing clarity regarding the locus of deed creation as an important part of the validity of authentic deeds. In conventional notarial practice, this provision is relatively easy to implement because the deed creation process is carried out physically, with the parties present in person at the notary's office, which is physically located within the jurisdiction of their authority. The existence of these territorial boundaries also serves as an instrument for controlling the professionalism of notaries and providing legal protection for the parties who use their services.

The application of the principle of territorial jurisdiction of notaries has become increasingly complex in the context of electronic notarial deeds, given that the parties can perform legal acts and affix electronic signatures from different geographical locations without being physically present at the notary's office. This condition raises legal problems regarding the determination of the locus of deed creation and the jurisdiction of the authorized notary, which has direct implications for the validity of the deed and legal certainty for the parties. Rachmawati and Silviana (2025) emphasize that the absence of clear regulations regarding jurisdiction in cyber notary practice has the potential to trigger conflicts of authority between notaries and create legal uncertainty, especially in the event of a dispute in the future. The literature on notarial law has proposed a number of approaches to address this issue, including establishing jurisdiction based on the location of the notary who drafted and authenticated the deed, the location of the server or electronic system where the deed is stored, or the location of one of the parties who has the most dominant legal connection in the transaction (Hutama &

Ramadhan, 2025). However, each of these approaches still leaves conceptual and normative issues unresolved because they do not have an explicit legal basis in the UUJN, thus emphasizing the urgency of harmonizing regulations between notarial law and information technology law so that the application of electronic notarial deeds does not conflict with the principle of territorial jurisdiction and continues to guarantee legal certainty.

METHODS

This study uses normative legal research methods with a statute approach, conceptual approach, and comparative approach. According to Soekanto (2001), normative legal research is research conducted by examining reference materials or secondary data, which includes primary legal materials, secondary legal materials, and tertiary legal materials. The data used in this study are primary legal materials, which include the Civil Code, Law Number 2 of 2014 concerning Amendments to Law Number 30 of 2004 concerning Notary Positions, Law Number 19 of 2016 concerning Amendments to Law Number 11 of 2008 concerning Electronic Information and Transactions, as well as related implementing regulations. Secondary legal materials include law textbooks, national and international scientific journals, previous research results, and scientific articles discussing notarial deeds, cyber notaries, electronic documents, and jurisdiction. Tertiary legal materials include legal dictionaries, legal encyclopedias, and other reference materials that provide explanations of primary and secondary legal materials.

Data collection was conducted through documentary study techniques by identifying, inventorying, and reviewing various relevant legal sources and literature through electronic journal databases such as Google Scholar, DOAJ, Garuda, and the official websites of legal institutions. The collected data was then analyzed using qualitative analysis methods with descriptive-analytical and prescriptive approaches. The analysis stages included: first, a systematic description of the legal regulations related to electronic notarial deeds and jurisdiction; second, a critical analysis of the consistency or inconsistency of legal norms using various methods of legal interpretation (grammatical, systematic, historical, and teleological) as well as an analysis of vertical and horizontal harmonization between regulations; third, comparative analysis by comparing regulations in Indonesia with those in other countries such as the United States and European Union countries; and fourth, formulation of recommendations regarding ideal regulations for electronic notarial deeds based on legal principles, practical needs, and international best practices adapted to the Indonesian context. The validity of the data is ensured through source triangulation, verification of the validity of regulations through official JDIIH, selection of literature from accredited journals, and cross-checking between various sources to ensure the credibility and objectivity of the research.

RESULT

Legal Framework for Electronic Notarial Deeds in Indonesia

The legal framework for electronic notarial deeds in Indonesia is currently still fragmented and has not been comprehensively integrated. Article 15 paragraph (3) of the UUJN gives notaries the authority to certify transactions conducted electronically (cyber notary), but this provision has not been further elaborated in implementing regulations governing technical and procedural aspects. The absence of these derivative regulations creates a legal vacuum that causes legal uncertainty for notaries who wish to implement cyber notary services. According to Sugiarti (2022), this normative vacuum causes notaries to face a dilemma between utilizing the authority granted by law and the risk of not having clear guidelines on how to implement it legally and safely.

The legal framework governing electronic notarial deeds in Indonesia is currently scattered across several interrelated laws and regulations, but has not been fully integrated. To provide a more systematic overview of the legal framework governing electronic notarial deeds, the following table summarizes the relevant laws and regulations along with their regulatory substance.

Table 1. Legal Framework for Electronic Notarial Deeds in Indonesia

Legislation	Substance of Regulations Related to Electronic Notarial Deeds	Strengths and Weaknesses
Civil Code (KUH Perdata) Article 1868	Defining authentic deeds as deeds made in the form specified by law by or before an authorized public official in the place where the deed is made	Strengths: Provides a legal basis for authentic deeds and their evidentiary value Weaknesses: The concepts of "form" and "place" are traditionally understood to refer to physical form and geographical location, and do not accommodate electronic formats
Law No. 2 of 2014 concerning Amendments to Law No. 30 of 2004 concerning Notarial Positions (UUJN) Article 15 paragraph (3)	Notaries are authorized to certify transactions conducted electronically (cyber notary)	Strengths: Provides an explicit legal basis for cyber notaries Weaknesses: Provisions are general in nature without implementing regulations governing technical and procedural aspects
Law No. 2 of 2014 (UUJN) Article 16 paragraph (1) letter b	Notaries are required to create deeds in the form of minute	Strengths: Provides certainty regarding storage obligations

Legislation	Substance of Regulations Related to Electronic Notarial Deeds	Strengths and Weaknesses
	deeds and store them as part of the notary protocol	Weaknesses: It is unclear whether minutes can be created and stored in electronic format
Law No. 2 of 2014 (UUJN) Article 18 paragraph (1)	Notaries have their place of business in regencies/cities and their jurisdiction covers the entire province	Strengths: Provides certainty regarding territorial jurisdiction Weaknesses: Territorial jurisdiction is difficult to apply in the context of borderless electronic transactions
Law No. 19 of 2016 concerning Amendments to Law No. 11 of 2008 concerning Electronic Information and Transactions (ITE Law) Article 5 paragraph (1)	Electronic information and/or electronic documents and/or their printouts are valid legal evidence	Strengths: Recognizes electronic documents as evidence Weaknesses: Does not specifically regulate electronic notarial deeds and their status as authentic deeds
ITE Law Article 6	Electronic documents must meet the following requirements: they must be authentic, accountable, accessible, displayable, and guaranteed to be intact	Strengths: Provides criteria for the validity of electronic documents Weaknesses: There are no technical guidelines on how to meet these requirements for notarial deeds
ITE Law Article 11 paragraph (1)	Electronic signatures have legal validity if they meet certain requirements	Strengths: Recognizes electronic signatures Weaknesses: Does not specifically regulate electronic signatures in the context of notarial deeds, which require stricter requirements
Government Regulation No. 71 of 2019 concerning the Implementation of Electronic Systems and Transactions	Regulates certified electronic signatures and Electronic Certification Providers (PSrE)	Strengths: Provides more detailed regulations regarding electronic signature infrastructure Weaknesses: Does not specifically regulate PSrE for cyber notary services with higher requirements

Based on the table above, it can be seen that the existing legal framework has several fundamental weaknesses. First, there is a conceptual inconsistency between the definition of authentic deeds in the Civil Code, which requires a specific "form" and "place," and the recognition of electronic documents in the ITE Law. Second, the provisions regarding cyber notaries in the UUJN are still general in nature and have not been elaborated in implementing regulations. Third, there is no harmonization between the notary's obligation to create a minute of the deed and the possibility of creating deeds in electronic format. Fourth, the territorial jurisdiction of notaries does not accommodate the borderless nature of electronic transactions.

Problems of Notary Jurisdiction in Making Electronic Deeds

The main problem within the existing legal framework is the inconsistency between the concept of authentic deeds in the Civil Code and the Notary Law with the concept of electronic documents in the Electronic Information and Transactions Law. Article 1868 of the Civil Code defines an authentic deed as "a deed made in the form prescribed by law by or before a public official authorized for that purpose at the place where the deed is made." A grammatical interpretation of this article indicates that there are specific requirements regarding the "form" and "place" of deed creation, which are traditionally understood to refer to physical form (paper) and a specific geographical location (notary office). However, the ITE Law recognizes electronic information and documents as valid evidence without requiring physical form. The tension between these two concepts creates legal ambiguity as to whether electronic notarial deeds can meet the requirements of "form" and "place" as referred to in Article 1868 of the Civil Code.

To clarify the comparison between the requirements for conventional authentic deeds and electronic deeds, the following comparative analysis table is presented:

Table 2. Comparison of Requirements for Conventional Authentic Deeds and Electronic Deeds

Aspects	Conventional Authentic Deed	Electronic Notarial Deed	Legal Challenges
Form	Paper with ink, physical format in accordance with UUJN	Digital format (PDF, XML, or other formats)	Article 1868 of the Civil Code requires a "form specified by law," which does not clearly cover digital formats
Place of Creation	Notary office or other place within the notary's jurisdiction	Can be from different locations (notary, parties in separate locations)	The concept of "place" becomes ambiguous in electronic transactions that are not tied to a physical location
Signatures	Wet signature on paper	Certified electronic signature	Regulations are needed to confirm the equivalence of electronic signatures with wet signatures for authentic deeds
Presence of Parties	Physical presence before the notary	Can be present via video conference or remotely	Article 16 paragraph (1) letter m of the UUJN requires "attendance," which is unclear as to whether it includes virtual attendance
Identity Verification	Physical identity document verification and direct identification	Digital verification via e-KTP, biometrics, video verification	The risk of identity fraud is higher, requiring advanced verification technology
Minutes of Deed	Original papers stored and bound chronologically	Digital files stored in an electronic system	The UUJN does not clearly regulate notarial protocols in electronic format
Copy of Deed	Photocopies legalized with the notary's stamp and signature	Digital files or printed results with electronic signatures	There is no distinction between "original" and "copy" in digital files
Grosse Deed	Original documents with the heading "In the name of justice..." which have executory power	Digital format with the same header	There are no regulations regarding electronic deeds and their executory power
Storage	Safe or secure physical storage	Server, cloud storage, or digital storage system	Cybersecurity, backup, and disaster recovery standards are required but have not been regulated
Evidential Value	Perfect evidentiary power (physical, formal, material)	Still debated whether it is equivalent to conventional deeds	The ITE Law recognizes electronic documents as valid evidence, but it is unclear whether they have full evidentiary power

[Zeifert and Tobor \(2022\)](#) argue that ambiguity in the regulation of electronic notarial deeds should not be addressed rigidly by adhering solely to formal and physical understandings. They emphasize the importance of progressive and purposive interpretation, namely legal interpretation that is oriented towards the purpose for which the norm was established. In this context, the requirements regarding the form of the deed and the place of its creation are no longer understood as limited to the physical presence of the parties and the notary, but rather in terms of their substantial function, namely to guarantee legal certainty, the authenticity of the deed, and its evidentiary value. As long as these essential functions can still be realized through the use of reliable and secure information technology, the use of electronic means should not be viewed as a deviation from the law. This view is in line with the principle that the law is dynamic and must be able to adapt to technological developments and the needs of society, without sacrificing the basic values and main objectives that the law itself seeks to protect.

Further analysis shows that the provisions regarding the notary's obligation to create a minute of the deed and store it as a notarial protocol (Article 16 paragraph 1 letter b of the UUJN) have also not been adapted to the digital era. The UUJN does not provide clarity on whether the minute of the deed can be created and stored in electronic format or must remain in physical form. Current practice shows that some notaries prepare deeds electronically but then print them out to be stored as physical minutes. This approach reduces the efficiency that should be gained from digitization and raises questions about which version is the authentic document: the electronic version or the printed version. Furthermore, there are no provisions governing the electronic storage infrastructure that notaries must have, minimum security standards, backup mechanisms, and recovery procedures in the event of system failure. In the opinion of [Andriani et al., \(2025\)](#), the absence of regulations on electronic notary protocols has the potential to lead to data loss, data corruption, or unauthorized access, which could jeopardize the interests of the parties and reduce public trust in notary institutions.

Therefore, an amendment to the UUJN or at least an implementing regulation that explicitly regulates electronic notary protocols, including technical requirements, security standards, and oversight mechanisms, is needed.

Another aspect that requires attention in the legal framework is the provision regarding copies of deeds and certified copies of deeds. In conventional practice, notaries provide copies of deeds to the parties in the form of photocopies that are legalized with the notary's stamp and signature, while certified copies of deeds, which have executory power, are provided in original form with the heading "In the Name of Justice Based on the One Almighty God." In the electronic context, questions arise regarding the form of electronic copies and gross deeds, the mechanism for legalization, and how to ensure that electronic copies have the same evidentiary value as physical copies. The ITE Law stipulates that printouts of electronic documents are valid evidence, but does not specifically regulate electronic copies of documents that are not printed. Furthermore, digital technology actually allows for the provision of "copies" that are 100% identical to the "original" because there is no difference between the original digital file and its copy, unlike physical documents where photocopies can be distinguished from the original document. However, it is precisely this characteristic that poses a risk because it facilitates the falsification or unauthorized distribution of documents. One possible solution is the use of digital watermarking, digital signatures, or blockchain technology to ensure the authenticity and integrity of electronic copies. However, this requires clear regulations on which technologies must be used and how they should be verified.

Identity Verification and Electronic Signatures

In traditional notarial practice, one of the main tasks of a notary is to verify the identity of the parties by directly examining identity documents (such as ID cards or passports) and matching them with the faces of the parties in accordance with the provisions of the UUJN, including identification by two witnesses if necessary. However, when notary services are conducted online (remote online notarization) in a cyber notary model, identity verification becomes much more challenging because there is no physical interaction. To overcome this, a number of digital technologies are used, such as the use of electronic identity that combines biometric data in digital identity documents, biometric authentication (e.g., face recognition, fingerprints, or iris scanning), verification via real-time video where the person presents the original document and is asked to interact to prevent misuse of the recording, as well as specialized third-party services that provide standardized identity verification for online notary purposes (Mishra, 2022). These approaches are designed to create a verification process that is secure, reliable, and complies with international standards for non-face-to-face identity authentication.

Every digital identity verification method essentially offers benefits while also having its own limitations. The use of e-KTPs equipped with biometric chips is considered to have a high level of security because biometric data is relatively difficult to falsify, but its implementation still depends on the availability of chip readers, which not everyone has. Biometric authentication technologies such as facial recognition are also continuing to develop and are capable of detecting liveness to ensure that the subject being verified is a real person, although they still face threats from increasingly sophisticated deepfake technology. Verification via video allows for direct interaction between the notary and the person being verified, similar to a physical meeting, but its effectiveness is highly dependent on the quality of the internet connection and the devices used, and it is not entirely free from the risk of visual manipulation. Meanwhile, the involvement of third parties such as banks or fintech companies that have implemented know-your-customer (KYC) procedures can strengthen the verification process, but raises new issues regarding the division of legal responsibility in the event of misidentification. Therefore, a number of studies recommend the application of a layered approach or multi-factor authentication by combining several verification methods at once to increase the level of identity certainty, even though the consequence is a more complex process that has the potential to reduce efficiency, even though efficiency is the main objective of the digitization of notary services (Jain et al., 1996; Mishra, 2022; Pato & Millett, 2010).

Electronic signatures play a very important role in electronic notarial deeds because they are a tangible manifestation of the parties' agreement on the contents of the deed. Within the Indonesian legal framework, electronic signatures are understood as a series of electronic information attached or linked to other electronic documents for verification and authentication purposes, and are recognized as having legal force as long as they meet certain requirements, such as exclusive association with the signatory, full control by the signatory during the signing process, the ability to detect any changes to the signature or document after signing, the existence of a signatory identification mechanism, and evidence that consent was actually given (Stanešić et al., 2025). To ensure that all these requirements are met in electronic notarial practice, the use of certified electronic signatures is a must, especially those based on Public Key Infrastructure (PKI) technology (Antolino-Hernández et al., 2019). This system works by relying on cryptographic key pairs and digital certificates issued by authoritative institutions, thereby guaranteeing the authenticity of the signer's identity, the integrity of the document, and the principle of non-repudiation. Internationally, this model is recognized as the primary standard in high-value legal electronic transactions because it provides a level of certainty and trust that is equivalent to, and even exceeds, that of conventional signatures in a digital environment (Nurmin K. Martam, 2024).

Implementing certified electronic signatures in creating electronic notarial deeds still faces a number of practical challenges. The limited and uneven availability of electronic certification providers means that public access to this service is not yet fully inclusive. In addition, the cost of digital certificates and supporting devices can be a burden, especially for economically disadvantaged groups. Another challenge arises from low digital

literacy, meaning that many users still require intensive assistance to understand and use electronic signatures correctly. From a technical perspective, the security of private key storage is also a crucial issue, as leaked private keys could potentially be misused to forge signatures. Furthermore, the absence of uniform standards for electronic signatures and documents can hinder interoperability between systems (Radzali et al., 2025). Various international experiences, particularly in Europe, show that the successful implementation of e-notary is largely determined by the existence of technology standardization, reliable Public Key Infrastructure, strict regulations regarding the responsibilities of certification agencies, and extensive digital literacy programs (European Commission, 2025). These best practices can serve as important references for Indonesia, with adjustments to the legal, technological, and social conditions that apply at the national level.

Comparison of E-Notary Implementation in Various Countries

Various countries implement e-notary or remote notarization with legal approaches tailored to their national legal systems. In the United States, Remote Online Notarization (RON) has developed through a decentralized model because notary regulation authority lies at the state level. International research shows that states that adopted RON early on, such as Virginia, Texas, and Florida, emphasize three main aspects: technology-based identity verification (knowledge-based authentication and biometrics), the use of real-time audiovisual technology, and the obligation to store electronic records and documents for a certain period of time. The success of RON in the US is determined not only by technological readiness, but also by clear security standards and the accountability of notaries as public officials in the digital space. A study by Lubis et al., (2024) confirms that legal certainty in RON increases public trust and the efficiency of cross-state transactions, especially in the property and digital finance sectors.

In Europe, the implementation of e-notary cannot be separated from Regulation (EU) No. 910/2014 on eIDAS, which provides an integrated legal framework for electronic identification, authentication, and trust services. Unlike the fragmented approach in the US, eIDAS emphasizes harmonization and cross-border recognition of qualified electronic signatures and electronic documents. Gellert (2018) research shows that eIDAS serves as an important legal foundation for the transformation of digital public services, including electronic notarization, as it ensures system interoperability and legal certainty among EU member states. With cross-jurisdictional recognition, electronic notarization in Europe has become an important instrument in supporting the digital single market.

The comparison between the United States and the European Union provides important lessons for Indonesia in developing the concept of cyber notary or e-notary. From the US, Indonesia can adopt a pragmatic approach based on technical standards and notary professional responsibility, while from the EU, it can adopt the principles of national standardization, trusted certification mechanisms, and cross-jurisdictional recognition. A study by Mayana and Santika (2021) emphasizes that the success of electronic notarization in developing countries is highly dependent on the integration of technology regulations, administrative law, and the legal culture of society. Therefore, although international principles can be used as a reference, the implementation of e-notary in Indonesia must still be adapted to the notarial legal system, the structure of notary authority, and the level of digital literacy of the community.

DISCUSSION

Electronic notarial deeds are an innovation in notarial practice that utilizes digital technology to replace traditional physical documents, with the aim of improving efficiency, security, and accessibility. From a jurisdictional perspective, these deeds raise questions about legal authority, cross-border validity, and international recognition. In Indonesia, the civil law-based legal system views notaries as public officials with limited jurisdiction over specific territories, but technological developments have forced adjustments to a more flexible concept of jurisdiction. Law No. 2 of 2014 concerning Amendments to Law No. 30 of 2004 concerning the Position of Notaries is the main basis, which recognizes the use of information technology in notarial practice, including electronic deeds.

Despite the availability of various laws that open up opportunities for the use of information technology in the performance of notarial duties, their implementation in the field still faces significant challenges, particularly in harmonizing these provisions with the applicable positive legal system in order to ensure legal certainty and protection for the parties. One crucial issue is the concept of jurisdiction in electronic notarial deeds, given that electronic transactions are cross-border in nature and are no longer bound by conventional geographical boundaries. Unlike traditional notarial deeds, which require the physical presence of the notary and the parties in a clearly defined legal jurisdiction, electronic deeds often involve parties located in different legal jurisdictions, even across countries, creating complexity in determining the applicable law and the competent authority. This condition shows that the issue of jurisdiction in electronic notarial deeds is not merely technical in nature, but is closely related to national legal policy choices and the need for cross-border regulatory harmonization, as emphasized by the findings of Charles and Benjamin (2022) and Ulandari (2026), which stress the importance of an integrated legal framework to achieve legal certainty and fair protection for all parties involved.

Digital transformation in the provision of notarial services has important implications for authentication mechanisms and deed storage systems, particularly with regard to electronic minutes of deeds. Various studies show that digital storage of minutes of deeds has the potential to maintain the authenticity, integrity, and security of data as long as it is supported by a reliable technology system. However, the effectiveness of this

implementation is largely determined by the level of alignment between notarial regulations in Indonesia and electronic identification technologies that have high accountability. Nisa' (2020) states that without adequate harmonization between national regulations and information technology practices, it is difficult to optimally guarantee the authentication and security of electronic deeds. A comparison with European Union standards through the e-IDAS framework shows that strong integration between regulations and digital identity technology is a key prerequisite for ensuring the validity, security, and integrity of electronic deeds, while also strengthening public trust in digital-based notary services.

In the context of the Indonesian legal system, the implementation of electronic notarial deeds has significant prospects for improving the efficiency and speed of legal processes, particularly in property transactions and business agreements, in line with the increasing demand for fast, digital-based legal services. However, behind this potential lie serious challenges in the form of cybersecurity risks and the possibility of data misuse, which require more comprehensive legal regulations. Clear jurisdictional regulations are crucial to prevent cross-border legal conflicts, especially within the framework of the ASEAN Economic Community, which promotes regional economic and digital integration. A number of empirical studies show that the use of electronic deeds contributes to increased notary productivity, but the success of its implementation is highly dependent on strengthening regulations related to virtual jurisdiction and dispute resolution mechanisms, including through the establishment or strengthening of special courts for electronic cases (Isono et al., 2025). Consequently, normative measures are required in the form of a revision of the Notary Profession Law by adapting the *lex loci actus* principle to the digital context, accompanied by the strengthening of international cooperation to encourage mutual recognition of electronic notarial deeds in order to achieve legal certainty and protection across jurisdictions (Cahyadi, 2019).

Electronic notarial deeds from a jurisdictional perspective pose serious challenges to Indonesia's legal system, which has long been based on a traditional territorial and procedural approach, thus requiring normative adaptation to support digital transformation without compromising legal integrity and certainty. Although the existing regulatory framework shows that Indonesia has taken positive initial steps in accommodating the use of technology in notarial practice, there are still regulatory gaps, particularly regarding cross-border jurisdiction, which have the potential to cause legal conflicts. Therefore, further studies and research are important to formulate a jurisdiction regulatory model that is more responsive to the nature of electronic transactions. The success of the implementation of electronic notarial deeds in the future will greatly depend on efforts to harmonize national regulations with global standards and international practices as recommended in various recent studies, in order to ensure consistent recognition, validity, and legal protection at the national and transnational levels.

CONCLUSION

This study finds that the legal framework governing electronic notarial deeds (cyber notary) in Indonesia remains fragmented and inconsistent. There is a clear misalignment between the requirements for authentic deeds under the Civil Code and the recognition of electronic documents under the ITE Law, particularly regarding jurisdiction, the concept of physical presence, and the formal validity of electronic notarial acts. The absence of detailed technical regulations further creates a legal vacuum, leading to uncertainty in the status of electronic notarial protocols, evidentiary strength, and the use of electronic signatures. From a theoretical perspective, this study highlights jurisdiction as the central issue in cyber notary implementation and underscores the need to reinterpret classical legal principles particularly *lex loci actus* within a digital context. It also contributes to the development of a conceptual framework for harmonizing conventional notarial law with digital legal regimes. From a practical perspective, this study emphasizes the urgency of regulatory harmonization between the UUJN and the ITE Law, the establishment of standardized electronic notary procedures, and the development of secure digital infrastructure, including identity verification systems and certified electronic signatures. Strengthening these aspects is essential to ensure legal certainty, enhance evidentiary reliability, and support cross-border recognition of electronic deeds. Overall, the modernization of notarial services in Indonesia requires a comprehensive and integrated regulatory approach to ensure that the authenticity, reliability, and legal certainty of notarial deeds are maintained in the digital era.

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