

Problematics of the Regulation and Implementation of Electronic Deeds in Indonesia's Notarial Legal System

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Abstract

The rapid development of digital technology has driven the increasing use of electronic documents in various legal activities in Indonesia. However, the notarial sector has not been able to fully keep pace with this development, as the formation of notarial deeds remains bound to formal procedures that require the physical presence of the parties. This study aims to analyze the regulation of electronic deeds within the Indonesian notarial legal system and to identify the problems in their implementation in practice. This research employs a normative juridical method with statutory and conceptual approaches. The results indicate that electronic deeds do not yet have an adequate normative basis, as there are no provisions explicitly accommodating their formation within the Notary Position Law. This condition reflects the lack of harmonization between the regulation of electronic documents and the formalistic nature of notarial law, which is rooted in Article 1868 of the Indonesian Civil Code. As a consequence, deeds that do not fulfill formal requirements risk being downgraded from authentic deeds to private documents, thereby weakening their evidentiary value. In addition, their implementation faces a primary obstacle in the form of uneven digital infrastructure, which leads to various technical issues, including identity verification, the assurance of the parties' free will, the management of electronic minuta deeds, and the readiness of human resources.

Keywords: Electronic Deeds; Notarial Law; Cyber Notary; Legal Certainty; Digitalization of Legal Services

Introduction

The advancement of digital technology has significantly transformed various aspects of social and legal activities in Indonesia. This transformation is reflected in the rapid expansion of digital connectivity, with internet users reaching approximately 221.6 million people, or 79.5% of the population, by early 2024. At the same time, the digital economy has become increasingly substantial, contributing IDR 1,490 trillion, equivalent to 6.12% of the national Gross Domestic Product (Ministry of Communication and Digital Affairs, 2024a, 2024b). These developments are closely associated with the government's policy direction toward digital transformation, as reflected in Presidential Regulation Number 82 of 2023 concerning the Acceleration of Digital Transformation and the Integration of National Digital Services. This policy commitment is further evidenced by Indonesia's improved performance in the UN E-Government Survey, where its ranking increased from 107th in 2018 to 64th in 2024 (Ministry of Administrative and Bureaucratic Reform, 2024a, 2024b).

The expansion of digital technology has increasingly influenced the use of electronic documents, electronic transactions, and electronic signatures across a wide range of legal activities (Zulfikar & Meiliawati, 2025). This development reflects a broader shift in legal practice, where digitalization is no longer peripheral but has become embedded in the delivery of legal services, requiring processes that are faster, more efficient, and adaptable to evolving societal needs (Rizqiya & Mahfud, 2024). In contrast, the notarial sector remains distinct due to its inherently formalistic character. The creation of authentic deeds continues to rely on procedural elements such as the physical presence of the parties before the notary, the reading of the deed to ensure understanding, the affixing of signatures in a single continuous process, and the preservation of the minuta deed in physical form (Agatha, 2026; Juliani, 2024). Within this context, the introduction of electronic deeds cannot be viewed merely as a technological advancement but must instead be understood as a legal issue that directly engages questions of validity, authenticity, legal certainty, and evidentiary value in notarial practice (Sona, 2022).

The ongoing momentum of digitalization has created expectations for the modernization of various public service sectors, including notarial services. In principle, this development requires a legal framework capable of accommodating the formation of deeds through electronic means without undermining their authenticity and evidentiary value (Rizqiya & Mahfud, 2024). However, the existing legal framework in Indonesia does not yet fully reflect this need. Although Indonesian positive law has recognized electronic documents and electronic signatures through Law Number 11 of 2008 on Electronic Information and Transactions, as amended by Law Number 1 of 2024 (ITE Law), such recognition remains general and does not specifically address the position of electronic deeds within the notarial legal system (Sona, 2022). The second amendment to the ITE Law further replaced the specific exclusion of notarial deeds with a broader clause stating that the provisions on electronic documents do not apply where otherwise regulated by law. While this amendment may be interpreted as opening normative space for electronic deeds, it simultaneously indicates that the main regulatory limitation now lies not within the ITE Law, but within the Notary Position Law, which has yet to accommodate the formation of deeds in electronic form.

The urgency of revising the Notary Position Law has become increasingly evident in practice. This was particularly evident during the COVID-19 pandemic, when social restriction policies forced many public services to transition to digital platforms (Sisilianingsih et al., 2023). In this context, notaries encountered significant challenges, as the existing legal framework continues to require the physical presence of the parties, a requirement that was difficult to fulfill under such conditions (Makarim, 2020). This situation illustrates that the absence of specific regulations governing electronic notarial services is not only a normative issue, but also a practical obstacle to accessing legal services. To date, there are still no provisions that explicitly regulate the form of electronic deeds, the procedures for their creation, the use of electronic signatures, or their storage within the notarial protocol (Rizkianti et al., 2025). As a result, a fundamental legal question arises: although the ITE Law has opened a normative space for electronic documents, the extent to which electronically created deeds can satisfy

the formal requirements of an authentic deed remains uncertain as long as the Notary Position Law does not provide adequate regulation (Rizkianti et al., 2025).

The regulatory gap surrounding electronic deeds has prompted growing scholarly attention, with various studies examining the digitalization of notarial services from different angles. Some scholars view digitalization as an inevitable development in the modernization of legal services (Setiawati et al., 2025), while others focus on the legal recognition of electronic documents and electronic signatures, including their potential application in notarial practice (Rachmawati & Silviana, 2025). In addition, a number of studies emphasize the lack of harmonization between the Notary Position Law and the legal framework governing electronic information and transactions, particularly with regard to the requirements of physical presence, the reading of deeds, signing procedures, and document storage (Rizkianti et al., 2025). Despite these contributions, existing scholarship tends to examine normative regulation and practical implementation separately. As a result, the issue of electronic deeds has not yet been analyzed in a fully integrated manner, especially in connecting the regulatory framework with the layered challenges of implementation. In practice, the realization of electronic deeds requires not only a clear legal basis, but also the support of reliable electronic systems, robust data security, accurate identity verification mechanisms, and the readiness of human resources to effectively utilize such technology.

In addition to the limitations of normative analysis, the implementation of electronic deeds also faces challenges related to digital infrastructure that cannot be addressed solely through regulatory reform. As of September 2025, there were still 2,333 villages without internet access, with fiber optic networks reaching only 4,398 out of 7,281 sub-districts in Indonesia, and internet penetration in the Maluku and Papua regions reaching only 59 percent compared to 83 percent in urban areas (CNN Indonesia, 2025; Ministry of Communication and Digital Affairs, 2024a). This condition indicates that the full implementation of electronic deeds cannot yet be carried out evenly across all regions of Indonesia. Therefore, issues of regulation and implementation must be understood as two

interrelated aspects. This article seeks to connect these two dimensions in an integrated manner, so that the discussion does not stop at normative legality alone but also takes into account the effectiveness of implementation within existing social, institutional, and infrastructural conditions.

Based on the foregoing discussion, this article addresses two main issues: the regulation of electronic deeds within the Indonesian notarial legal system and the problems arising in their implementation in notarial practice. The discussion is structured by first examining the regulation of electronic deeds within the framework of notarial law and the legal regime governing electronic documents, followed by an analysis of the various implementation challenges that arise in practice, including normative, technical, and infrastructural aspects. Through this approach, the article aims to provide a more comprehensive understanding of the challenges that need to be considered in the future development of electronic deeds in Indonesia.

Research Method

This study employs a normative juridical legal research method with a descriptive-analytical approach, focusing on the analysis of legal norms as well as the identification of issues in the regulation and implementation of electronic deeds within the Indonesian notarial legal system. This method is chosen because the issues examined are normative in nature, particularly concerning the absence of regulation in the Notary Position Law and its implications for notarial practice. The analysis of implementation aspects is conducted within a normative framework to assess the conformity between existing legal regulations and practical needs. The approaches used in this study include the statutory approach and the conceptual approach (Marzuki, 2016). The statutory approach is employed to examine relevant legal provisions, particularly the Notary Position Law, the Electronic Information and Transactions Law along with its amendments, and Article 1868 of the Civil Code, in order to assess the extent to which the existing regulatory framework accommodates the formation of electronic deeds. Meanwhile, the conceptual approach is used to analyze the

characteristics and legal position of electronic deeds in relation to the concept of authentic deeds within the notarial legal system.

The legal materials used in this study consist of primary legal materials in the form of relevant laws and regulations, as well as secondary legal materials, including legal literature, scholarly journal articles, and previous research related to the topic under study. In addition, materials reflecting notarial practice are also utilized to support the analysis of implementation aspects within a normative framework. All legal materials are collected through library research and analyzed qualitatively using methods of legal interpretation, including grammatical, systematic, and teleological interpretation, in order to produce a comprehensive analysis of the issues under examination (Marzuki, 2016).

Results and Discussions

The Regulation of Electronic Deeds in the Indonesian Notarial Legal System

In Indonesia, the use of electronic documents in legal activities has grown significantly in recent years. This trend is evident in the widespread adoption of electronic contracts in e-commerce, the increasing use of electronic signatures across business and government services, and the digitalization of tax administration through electronic tax invoice systems. In the land sector, the government had issued approximately 7.6 million electronic land certificates as of March 2026, reflecting a gradual transition toward the digitalization of land documents, although implementation remains at a developing stage (Detik.com, 2026). These developments indicate that digitalization has become an essential component of contemporary legal practice rather than merely an optional innovation. Nevertheless, the notarial sector has not progressed at the same pace, as the Notary Position Law still lacks explicit provisions accommodating the formation of electronic deeds (Rizkianti et al., 2025).

A notarial deed constitutes an authentic deed executed by or before a notary acting as a public official, as defined in Article 1 point 7 of the Notary Position

Law (Rizqiya & Mahfud, 2024). The formation of such a deed involves a series of formal procedures that must be carried out in a continuous and sequential manner. The parties are required to appear before the notary, who reads the deed aloud to ensure that the parties fully understand its contents and that their intentions correspond with what is stated in the document (Putri et al., 2022). Following this process, the appearers, witnesses, and the notary affix their signatures simultaneously within a single uninterrupted session. The outcome of this process is the minuta deed, which serves as the original document and must be retained within the notarial protocol as part of the notary's official duties (Rositawati et al., 2017). This procedure is not merely administrative in nature, but functions as a legal mechanism to verify the identity, legal capacity, and free will of the parties, while ensuring the authenticity of the deed as evidence with full evidentiary value under the Indonesian civil law system.

The formal nature of notarial deeds implies that any deviation from these procedural requirements may have direct legal consequences on the legal status of the deed. Under Indonesian civil law, an authentic deed derives its evidentiary strength from the strict fulfillment of formal requirements as prescribed by law. Where such requirements are not satisfied, the deed may lose its status as an authentic deed and be downgraded to a private document (Derizky & Purwanto, 2025). This process, commonly referred to as the degradation of a notarial deed, results in a significant reduction in its evidentiary value, as private documents do not possess the same binding force as authentic deeds and may require further proof in legal proceedings. For example, where a deed is signed without the simultaneous presence of the appearers before the notary, or where the reading of the deed is not properly conducted, such procedural defects may result in the loss of its status as an authentic deed (Pertiwi & Velentina, 2023). In such circumstances, the evidentiary function of the deed shifts from constituting perfect evidence to merely serving as supporting evidence, thereby weakening the legal certainty that notarial deeds are intended to provide.

This issue becomes particularly critical in the context of electronic deeds, as Indonesia does not yet have a specific and comprehensive regulatory framework governing electronic deeds within the notarial legal system. The most relevant

legal instruments are the Electronic Information and Transactions Law (ITE Law), which provides general recognition of electronic documents, and the Elucidation of Article 15 paragraph (3) of the Notary Position Law, which introduces the concept of cyber notary as the notary's authority to certify electronic transactions (Ghani & Priyono, 2025). However, these instruments have not adequately addressed the issue of electronic deeds in notarial practice. The ITE Law regulates electronic documents in a general context, while the regulation under the Notary Position Law, through the concept of cyber notary, remains limited to a certification function and does not cover the entire process of forming authentic deeds (Chastra, 2021). As a result, there are no provisions that explicitly regulate the form of electronic deeds, the mechanisms for their creation, the procedures for electronic signing, or their storage within the notarial protocol (Rachmawati & Silviana, 2025). This condition indicates that the position of electronic deeds within the Indonesian notarial legal system remains normatively undefined.

The concept of cyber notary, as mentioned in the Elucidation of Article 15 paragraph (3) of the Notary Position Law, does not have an official definition in Indonesian positive law (Anshori et al., 2022). The term was first introduced by the Information Security Committee of the American Bar Association in 1993, which granted notaries the authority to authenticate documents in electronic business communications (Wijaya, 2018). In academic discourse in Indonesia, the interpretation of this concept remains varied. Some scholars interpret it narrowly as limited to the certification of electronic documents, while others adopt a broader view, considering it as encompassing the exercise of all notarial powers based on information technology (Rizkianti et al., 2025). The absence of a clear definition indicates the weak normative foundation of the cyber notary concept within the Indonesian notarial legal system. In addition to being mentioned only in the elucidation section rather than in the main body of the law, the concept also lacks sufficient normative force to alter the formal procedures for the formation of authentic deeds (Chastra, 2021). In practice, the application of the cyber notary concept in Indonesia remains limited to administrative functions, such as the electronic submission of corporate

documents or the facilitation of electronic general meetings of shareholders, while the formation of notarial deeds itself continues to follow conventional procedures. As a result, essential elements of authentic deeds, such as physical presence, direct supervision, and manual signing, remain unchanged, indicating that the concept has not yet developed into a comprehensive electronic notarial system.

The normative limitations surrounding the concept of cyber notary cannot be separated from a more fundamental legal foundation, namely Article 1868 of the Civil Code. This provision defines an authentic deed as a deed made in the form prescribed by law, executed by or before public officials authorized for that purpose, at the place where the deed is made (Eli & Rasji, 2025). This provision establishes three cumulative elements as essential requirements for the authenticity of a deed, namely the form prescribed by law, the authority of a public official, and the place of execution of the deed. In the context of electronic deeds, these three elements give rise to distinct legal issues, particularly concerning the requirements of form, physical presence before a notary, and the determination of the place of execution. The phrase “in the form prescribed by law” requires that any change in the form of a deed, including its transition to an electronic format, must be supported by an explicit normative basis in legislation. The phrase “by or before a public official authorized for that purpose” presupposes a presence that can be directly supervised by the notary, while the phrase “at the place where the deed is made” refers to a physical locality, which becomes ambiguous in an electronic context where the parties may be located in different places (Arya et al., 2021). This condition demonstrates that the opportunity opened by the ITE Law through the recognition of electronic documents cannot yet be fully utilized within the notarial context, as long as the Notary Position Law and its structural foundation in Article 1868 of the Civil Code have not yet been updated to accommodate technological adaptation. In the absence of an explicit normative basis, the creation of electronic notarial deeds raises significant questions regarding their legal qualification. Such deeds risk not fulfilling the formal requirements of Article 1868 of the Civil Code and may therefore be regarded not as authentic deeds, but merely as private

documents, resulting in the loss of their perfect evidentiary value under Indonesian civil law (Ghofur, 2025). This condition reflects the potential degradation of notarial deeds, whereby their legal status and evidentiary strength are significantly diminished due to the non-fulfillment of formal requirements.

This limitation, however, does not indicate that the integration of electronic deeds into a notarial system is impossible. Comparative experiences show that such challenges can be addressed through explicit and structured legislative reform. In several countries with Latin notary systems, the alignment between technology and formal notarial procedures has been successfully achieved, although it requires carefully designed normative frameworks. In Estonia, the Notarisation Act, particularly Section 1 (3¹), explicitly recognizes remote authentication as part of formal notarial procedures and treats it as equivalent to conventional authentication (Estonia, 2001). This model is supported by a robust national digital identity infrastructure, enabling electronic identity verification with a level of certainty comparable to physical presence. In the Netherlands, whose notarial system is closer to Indonesia due to its shared Latin notary tradition (*notariaat*) rooted in Romano-French law, similar developments have been gradually accommodated through reforms in the *Wet op het notarisambt* (Larasati et al., 2026). These reforms allow certain stages of notarial procedures to be conducted electronically, including remote appearances under specific conditions, while still requiring strict identity verification and the use of electronic systems that comply with regulatory security standards.

These two experiences demonstrate that technological adaptation within Latin notary systems is not impossible, but it requires legislative reform that explicitly integrates technology into the formal procedures for the formation of authentic deeds, rather than merely providing general recognition of electronic documents or electronic signatures. This condition fundamentally differs from the situation in Indonesia, where the Notary Position Law and its structural foundation in Article 1868 of the Civil Code have not yet undergone adequate reform in this direction. Accordingly, the experiences of these two countries are better understood as evidence that the regulation of electronic deeds is feasible,

provided that Indonesia undertakes explicit legislative reform and develops adequate digital infrastructure.

Based on the foregoing analysis, it can be affirmed that Indonesia does not yet have a specific regulatory framework governing electronic deeds within its notarial legal system. The existing instruments, namely the ITE Law and the concept of cyber notary under the Notary Position Law, are not sufficient to adequately address this issue, as the ITE Law is too general in scope, while the cyber notary concept is too limited and lacks a clear definition. This inadequacy does not stem from a contradiction between the two legal regimes, but rather from a normative vacuum within the Notary Position Law itself. As established in the preceding discussion, the second amendment to the ITE Law has in fact opened a normative space by removing the explicit exclusion of notarial deeds from the electronic document regime. However, this space remains unrealized because the Notary Position Law, together with its structural foundation in Article 1868 of the Civil Code, has not yet been updated to accommodate the electronic formation of authentic deeds. The experiences of Estonia and the Netherlands demonstrate that such harmonization is possible, but only through explicit and structured legislative reform. Until such reform is undertaken, electronic deeds will remain in a normatively undefined position within the Indonesian notarial legal system. This condition creates a significant degree of legal uncertainty, particularly regarding the status, validity, and evidentiary force of electronic deeds within the Indonesian legal system.

Problems in the Implementation of Electronic Deeds in Indonesian Notarial Practice

The preceding discussion has demonstrated that electronic deeds lack an adequate normative foundation within the Indonesian notarial legal system. However, the challenges extend far beyond regulatory deficiencies. Even if the necessary legislative reforms are successfully implemented, the application of electronic deeds in notarial practice would continue to encounter structural constraints, particularly in relation to infrastructure, technical readiness, and human resource capacity. These challenges are interrelated and collectively

determine the extent to which electronic deeds can be effectively implemented within the Indonesian legal system. More importantly, these constraints are not merely technical in nature, but also carry significant legal implications, particularly in relation to the preservation of the evidentiary value and authenticity of notarial deeds. In this regard, the transition toward electronic deeds must be approached with caution, ensuring that technological adaptation does not undermine the fundamental principles underpinning notarial practice, especially those related to legal certainty and the integrity of authentic deeds.

From the perspective of infrastructure and technical readiness, the most fundamental challenge lies in the uneven distribution of digital infrastructure in Indonesia. While legislative reform may provide formal normative legitimacy for electronic deeds, such legitimacy remains largely ineffective in the absence of adequate infrastructural support capable of sustaining their implementation in practice. The effective implementation of electronic deeds fundamentally depends on the availability of stable and reliable internet connectivity, as well as access to appropriate technological devices, both of which remain unevenly distributed across regions and socio-economic groups. In practice, this disparity means that many communities still lack even the most basic means required to access electronic notarial services, thereby limiting the practical reach of such a system. Thousands of villages remain without internet access, and significant disparities in internet penetration persist between urban areas and the eastern regions of Indonesia (CNN Indonesia, 2025; Ministry of Communication and Digital Affairs, 2024a). This condition not only reflects a technical limitation, but also raises broader concerns regarding the equitable distribution of legal services and the risk of excluding certain segments of society from emerging forms of digital legal infrastructure, which may ultimately undermine the principle of equal access to justice.

This structural disparity has important implications for the future regulation of electronic deeds. Rather than being designed to fully replace conventional deeds, electronic deeds should be positioned as a complementary mechanism that takes into account differences in infrastructural conditions across regions. A uniform regulatory approach that assumes equal technological

readiness risks being ineffective and may, in practice, create exclusion. In such circumstances, the benefits of digitalization are likely to be concentrated in well-connected areas, while communities in other regions remain limited in their access. As a result, without an adaptive regulatory framework, the implementation of electronic deeds may reinforce existing inequalities and further widen disparities in access to justice.

In addition to infrastructural issues, the implementation of electronic deeds also faces technical challenges related to the process of forming the deed itself. The first challenge concerns the electronic verification of the parties' identities. In the conventional system, notaries conduct identification directly through physical observation and examination of identity documents in their presence. In an electronic system, a comparable mechanism must be replicated through technologies specifically designed for notarial purposes. Although Indonesia has developed various digital identity verification systems in other sectors—such as biometric-based population data managed by the Directorate General of Population and Civil Registration (Dukcapil), the application of electronic Know Your Customer (e-KYC) in the banking sector, and certified electronic signatures provided by Electronic Certification Authorities (PSrE) these systems are designed for different contexts and legal requirements and therefore do not yet fully meet the legal standards required for the formation of authentic deeds. Accordingly, if electronic deeds are to be implemented, a dedicated identity verification system tailored to meet notarial legal standards is required, which, to date, has not yet been established.

The second challenge relates to electronic signatures and the assurance of the parties' free will. The ITE Law does recognize certified electronic signatures as a valid means of authentication. However, the legal function of a signature in a notarial deed is far more complex than mere technical authentication. A signature in a notarial deed represents the presence, understanding, and declaration of the parties' free will, all of which are directly witnessed by a public official (Putri et al., 2022). In an electronic system, ensuring such free will becomes significantly more difficult, as the notary cannot directly observe the condition of the parties, including the possibility of coercion or lack of awareness

or other circumstances affecting the parties' ability to provide informed and voluntary consent during the signing process. This raises concerns not only at a technical level, but also at the level of legal validity, as the absence of direct supervision may undermine the assurance of genuine consent required in the formation of an authentic deed.

Furthermore, there is currently no mechanism capable of reliably ensuring that actions such as clicking or touching a screen to indicate consent genuinely reflect the parties' free and conscious will. Existing verification systems generally ensure identity and document integrity, but they are not capable of replacing the notary's direct supervisory function in ensuring the parties' free will. Therefore, in the absence of explicit regulation addressing this issue, the use of electronic signatures in notarial deeds continues to pose a fundamental threat not only to the authenticity of the deed, but also to the reliability of the notarial system as a whole.

The next technical challenge relates to the management of electronic minuta deeds, particularly concerning their integrity, security, and long-term preservation. In the conventional system, any amendments to the minuta deed are carried out through the mechanism of *renvoi*, which is visibly reflected through corrections, initials, and notarial authentication, allowing the audit trail of changes to be directly traceable, as regulated in Article 50 paragraph (1) of the Notary Position Law. In an electronic system, a comparable mechanism must be replicated through a reliable and tamper-proof digital recording system. However, the technical standards required to ensure such reliability have not yet been established within the regulatory framework in Indonesia. This concern is further underscored by recent cybersecurity incidents in Indonesia, including the cyberattack on the Pusat Data Nasional Sementara (PDNS), which highlight the broader vulnerability of critical digital systems to large-scale disruptions (Fajar et al., 2025). These developments highlight the importance of establishing robust and standardized digital safeguards to ensure the integrity and long-term reliability of electronic notarial records.

This issue becomes even more complex when associated with cybersecurity risks. Electronic minuta deeds, which are vulnerable to hacking, manipulation,

or unauthorized deletion, pose a fundamental threat to the authenticity of the deed and may give rise to questions of notarial liability, particularly in determining responsibility for system failures beyond the notary's control. At the same time, the existing notarial legal framework does not provide clear guidance regarding the scope of notarial liability in cases where the integrity of the minuta is compromised due to technical factors beyond their control. Beyond cybersecurity concerns, additional issues arise in relation to the long-term accessibility of the notarial protocol. Notarial protocols must be preserved for decades, while technology evolves rapidly. File formats used today may become inaccessible in the future, and there is no clear regulation specifying who is responsible for ensuring the continued accessibility of electronic protocols if the systems used become obsolete or cease to operate (Devi et al., 2023).

Beyond infrastructural and technical challenges, the implementation of electronic deeds also requires the readiness of human resources, both from the perspective of notaries and the public they serve. From the notary's perspective, the use of electronic systems in notarial practice demands competencies that go beyond conventional legal expertise, including the ability to operate digital identity verification systems, understand the mechanisms of certified electronic signatures, and manage notarial protocols in electronic form in a secure and accountable manner. However, such digital competency standards have not yet been established, as they have not been required under the conventional notarial system.

If electronic deeds are to be implemented, the establishment of such competency standards, along with supporting education and training programs, becomes a prerequisite that must be developed in a structured manner (Setiawati et al., 2025). Comparative experiences from Estonia and the Netherlands demonstrate that such standards form an essential part of system readiness. In Estonia, notaries providing electronic services are required to obtain specific digital competency certification, which includes an understanding of the national electronic identity system, remote verification procedures, and the secure management of digital documents. In the Netherlands, the *Koninklijke Notariële Beroepsorganisatie* (KNB) has established specific practice guidelines

for notaries conducting electronic services, including standards for identity verification, system security requirements, and documentation procedures that must be fulfilled before notaries are authorized to provide such services (Koninklijke, 2025).

This condition fundamentally differs from Indonesia, where the readiness of individual notaries to address the challenges of electronic notarial practice would largely depend on individual initiative, potentially leading to inconsistencies in professional standards across notarial practice. The same applies to the public. Notarial deeds are generally executed at critical moments in a person's legal life, such as property transactions, the establishment of business entities, or the drafting of wills. A lack of understanding of the electronic mechanisms involved in such processes not only increases the risk of technical errors but also heightens the potential for misuse by parties seeking to exploit public unfamiliarity. Meanwhile, the level of digital literacy and skills among the Indonesian population varies significantly across regions, with substantial disparities between urban and rural areas. As a result, the readiness of the public to participate in electronic notarial processes cannot be assumed to be uniform (Ministry of Communication and Informatics, 2024; Ministry of Communication and Digital Affairs, 2024c).

Based on the foregoing analysis, it can be affirmed that the challenges in implementing electronic deeds in Indonesian notarial practice are layered and cannot be resolved solely through regulatory reform. These challenges not only affect the technical feasibility of implementing electronic deeds, but may also have direct legal implications, particularly the potential degradation of evidentiary value where the formal requirements of authentic deeds are not fulfilled. The disparity in digital infrastructure indicates that the full and uniform implementation of electronic deeds across Indonesia is not feasible in the near term, making a complementary approach that retains conventional deeds as an alternative both necessary and unavoidable. Technical challenges related to identity verification, the assurance of free will, the management of electronic minuta deeds, and the long-term preservation of notarial protocols demonstrate that the required electronic system must be carefully designed, standardized, and

integrated. Meanwhile, the readiness of human resources, both among notaries and the public, constitutes an equally important prerequisite that requires systematic attention. Accordingly, the development of electronic deeds in Indonesia can only be pursued through a comprehensive and gradual approach that simultaneously integrates legislative reform, infrastructure development, the establishment of technical standards, and the enhancement of human resource capacity, thereby ensuring the integration of legal, technical, and institutional dimensions in a coordinated manner. Therefore, electronic deeds should not be viewed as a complete replacement for conventional notarial deeds, but rather as a complementary mechanism within a hybrid notarial system that accommodates the diverse conditions of infrastructure and institutional readiness across regions.

Conclusion

This article demonstrates that the issue of electronic deeds within the Indonesian notarial legal system is layered in nature. At the normative level, electronic deeds do not yet have an adequate legal basis due to the absence of explicit regulation accommodating their formation within the Notary Position Law. This condition reflects the lack of harmonization between the regulation of electronic documents under the ITE Law and the formalistic character of notarial law, which continues to emphasize physical presence, direct supervision by the notary, and the existence of the minuta deed as the original document. At the practical level, the implementation of electronic deeds primarily faces obstacles related to the uneven distribution of digital infrastructure, which in turn gives rise to various related issues, including difficulties in identity verification, the assurance of the parties' free will, the management of electronic minuta deeds, and the readiness of human resources. Accordingly, the issue of electronic deeds is not only a matter of regulatory gaps, but also of overall system readiness encompassing legal, technical, and institutional dimensions.

To address these issues, a comprehensive and phased reform approach is required. First, the Notary Position Law must be revised to explicitly accommodate the formation of electronic deeds, including provisions on remote appearance, the use of electronic signatures, and the storage of minuta deeds in

electronic form. Second, clear technical standards need to be established, particularly with regard to identity verification, system security, and long-term document management. Third, considering the existing disparities in digital infrastructure, the implementation of electronic deeds should be designed in a complementary manner while retaining conventional deeds as an alternative. Fourth, the capacity of notaries must be strengthened through training and the development of digital competencies. Without these measures, regulatory reform alone will not be sufficient to ensure the effective implementation of electronic deeds and to safeguard the integrity of authentic deeds as reliable legal evidence.

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Declaration of Generative AI Use

During the preparation of this manuscript, the author(s) used ChatGPT (OpenAI) to assist in improving the clarity, structure, and readability of the text. After using this tool, the author(s) thoroughly reviewed, edited, and verified the entire content to ensure it accurately represents their own ideas and interpretations. The author(s) take full responsibility for the integrity and originality of the published work.

Competing Interest

The author declares no competing interests.