

Legal Ambiguity of Electronic Consent in the Formation of International Electronic Contracts for Artificial Intelligence-Based Digital Business Transactions

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Article Info

Article history:

Received Aug, 2026

Revised Aug, 2026

Accepted Aug, 2026

Keywords:

Electronic Consent
Artificial Intelligence
International Electronic
Contracts
Digital Business Transactions

ABSTRACT

The rapid development of Artificial Intelligence (AI) has transformed electronic contracts from human-centered agreements into autonomous machine-to-machine transactions. However, Article 18A of Law Number 1 of 2024 concerning the Second Amendment to Law Number 11 of 2008 on Electronic Information and Transactions merely states that "the user gives consent" without defining the legal scope of electronic consent, creating legal ambiguity in AI-based international electronic contracts. This study employs normative legal research using statute and conceptual approaches, supported by grammatical and systematic interpretation with deductive legal reasoning. The findings reveal that the existing provision remains human-centered and fails to accommodate autonomous electronic consent generated by AI Agents, smart contracts, APIs, and Internet of Things (IoT) systems. Consequently, the ambiguous formulation undermines legal certainty in digital business transactions. This study proposes a normative reconstruction of electronic consent to recognize autonomous electronic consent while maintaining the principles of legal certainty, good faith, transparency, and contractual accountability.

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1. INTRODUCTION

The rapid development of Artificial Intelligence (AI), the Internet of Things (IoT), blockchain technology, Application Programming Interfaces (APIs), and autonomous digital systems has fundamentally transformed the formation of electronic contracts in contemporary digital commerce. Electronic transactions are no longer exclusively initiated and executed through direct human interaction. Instead, AI-powered agents are increasingly capable

of autonomously negotiating prices, accepting contractual terms, executing payments, purchasing digital goods, managing supply-chain procurement, and interacting with other autonomous systems without real-time human intervention. Likewise, Internet of Things (IoT) devices can automatically reorder inventory when stock reaches a predetermined threshold, while electric vehicles are capable of initiating and completing charging payments through machine-to-machine communication. These

technological developments demonstrate that electronic consent is evolving from conventional human interaction, such as clicking an "I Agree" button, toward autonomous decision-making performed by intelligent systems [1].

The legal framework governing electronic contracts in Indonesia, however, has not evolved at the same pace as technological innovation. Article 18A of Law Number 1 of 2024 concerning Amendments to the Law on Electronic Information and Transactions (ITE Law) provides that an international electronic contract using standard clauses shall be governed by Indonesian law when the user of the Electronic System Operator is located in Indonesia and gives consent from or within Indonesian jurisdiction, when the place of performance is located in Indonesia, or when the Electronic System Operator conducts business in Indonesia. Furthermore, Article 18A paragraph (2) requires that electronic contracts be drafted in simple, clear, and understandable language while observing the principles of good faith and transparency. Nevertheless, the provision merely states that the "user gives consent" without defining the legal meaning, form, or mechanism of such electronic consent in the context of rapidly evolving digital technologies [2].

This legislative formulation creates a normative ambiguity (vague norm) concerning the concept of electronic consent. The phrase "gives consent" has traditionally been interpreted as an expression of human intention through actions such as clicking an acceptance button, applying an electronic signature, or otherwise explicitly indicating agreement. However, modern digital business transactions increasingly rely upon autonomous interactions between intelligent systems in which contractual obligations arise through algorithmic instructions, automated APIs, smart contracts, AI Agents, or machine-to-machine communications without any contemporaneous human expression of consent. Consequently, Article 18A fails to clarify whether autonomous consent generated by artificial intelligence constitutes

legally valid electronic consent under Indonesian law [3].

This ambiguity produces significant legal uncertainty for digital business actors. Businesses increasingly deploy AI Agents to negotiate procurement contracts, automatically purchase cloud computing services, execute supply-chain transactions, and manage commercial operations without direct human intervention. Financial institutions utilize algorithmic systems to execute automated investment strategies, while blockchain-based smart contracts perform contractual obligations independently once predetermined conditions are satisfied. Despite these technological realities, Indonesian legislation continues to assume that consent is expressed solely by a human user. Consequently, uncertainty arises regarding the validity of contracts formed through autonomous systems, the legal status of AI-generated consent, and the allocation of liability when autonomous decisions result in contractual disputes [4].

From a normative legal perspective, this issue should not be characterized as a legal vacuum because Article 18A already regulates electronic consent. Rather, the problem lies in the ambiguity of the legal norm itself. The statute recognizes the existence of consent but does not specify whether electronic consent encompasses click-wrap agreements, biometric authentication, API-based authorization, AI-generated consent, smart contracts, or machine-to-machine agreements. As a result, one statutory provision potentially accommodates multiple legal interpretations, thereby undermining legal certainty (*rechtszekerheid*) in AI-driven digital business transactions [5].

The urgency of this research is reinforced by the accelerating integration of Artificial Intelligence into international electronic commerce. The emergence of autonomous commerce requires legal doctrines that are capable of accommodating technological developments while preserving the fundamental principles of contract law, including mutual consent, good faith,

transparency, and legal certainty [6]. Without doctrinal clarification or regulatory reconstruction, Indonesian contract law risks becoming increasingly incompatible with the realities of AI-based digital business, potentially affecting investor confidence, cross-border electronic commerce, digital innovation, and the competitiveness of Indonesia's digital economy.

Based on the foregoing background, this study addresses the following legal issues:

- 1) Does the phrase "the user gives consent" under Article 18A of Law Number 1 of 2024 provide legal certainty regarding the validity of electronic consent in Artificial Intelligence-based international electronic contracts?
- 2) How should the legal concept of electronic consent under Article 18A of Law Number 1 of 2024 be reconstructed to accommodate Artificial Intelligence-based digital business transactions while ensuring legal certainty, good faith, and transparency?

Accordingly, this research pursues two principal objectives. First, it aims to examine whether Article 18A of Law Number 1 of 2024 provides adequate legal certainty regarding the concept of electronic consent in international electronic contracts formed through Artificial Intelligence-based digital business transactions. Second, it seeks to formulate a normative reconstruction of the legal concept of electronic consent capable of accommodating autonomous technologies, including AI Agents, machine-to-machine agreements, APIs, and smart contracts, while remaining consistent with the principles of Indonesian contract law.

Theoretically, this research is expected to contribute to the development of contract law, cyber law, and Artificial Intelligence governance by introducing a contemporary legal framework for interpreting electronic consent in autonomous digital transactions. Practically, the findings

are expected to provide recommendations for legislators, policymakers, Electronic System Operators, digital business enterprises, and legal practitioners in developing adaptive legal regulations capable of responding to emerging technologies and strengthening legal certainty in Indonesia's digital economy.

2. LITERATURE REVIEW

2.1 *First Literature*

The evolution of digital technology has significantly transformed the legal structure of electronic agreements. Initially, electronic contracts were established through conventional user interactions, whereby contractual consent was explicitly expressed by users through click-wrap agreements, electronic signatures, or End User License Agreements (EULA). However, technological advancement has progressively shifted contractual relationships toward blockchain-based smart contracts and decentralized digital platforms, creating new legal challenges concerning the formation and execution of electronic agreements [7].

2.2 *Second Literature*

Previous studies have primarily focused on the legal implications of blockchain technology and user agreements. Maulana et al. (2025) examined the legal aspects of intellectual property ownership on the blockchain-based gaming platform Blankos Block Party. The study concluded that blockchain technology fundamentally changes digital ownership through decentralized systems while contractual relationships continue to rely upon agreements concluded between platform providers and human

users (Maulana et al., 2025). Consequently, the research did not address whether autonomous systems or Artificial Intelligence (AI) could independently generate legally valid contractual consent [8].

2.3 *Third Literature*

nalyzed intellectual property rights on the Roblox platform by emphasizing the legal relationship established through the platform's Terms of Service and End User License Agreement (EULA). Their findings demonstrate that the validity of digital agreements remains grounded in the assumption that contractual consent originates from human users who consciously accept contractual terms (Maulana & Nurcahyani, 2023). The study therefore did not examine the possibility of autonomous consent generated through Artificial Intelligence or machine-based decision-making [9].

3. METHODS

This research employs normative legal research, which examines legal norms governing electronic consent in international electronic contracts and evaluates their adequacy in addressing legal issues arising from Artificial Intelligence (AI)-based digital business transactions. Normative legal research is intended to identify legal ambiguity, interpret statutory provisions, and formulate legal arguments to provide legal certainty regarding the concept of electronic consent under Indonesian law [10].

The research adopts two legal approaches. First, the statute approach is applied to examine statutory regulations governing electronic transactions and contract law, particularly Law Number 1 of 2024 concerning the Second Amendment to Law Number 11 of 2008 on Electronic

Information and Transactions, the Indonesian Civil Code, and other relevant legislation governing electronic contracts and digital business transactions. This approach aims to analyze the consistency, coherence, and adequacy of existing legal norms regulating electronic consent.

Second, the conceptual approach is employed to analyze legal doctrines and theoretical concepts relating to contract law, electronic consent, legal certainty, good faith, autonomous systems, Artificial Intelligence, smart contracts, and machine-to-machine agreements. This approach facilitates the development of normative legal arguments for interpreting and reconstructing the concept of electronic consent in response to technological developments.

The legal materials utilized in this research consist of primary and secondary legal materials. Primary legal materials include the 1945 Constitution of the Republic of Indonesia, Law Number 1 of 2024 concerning the Second Amendment to Law Number 11 of 2008 on Electronic Information and Transactions, the Indonesian Civil Code (*Burgerlijk Wetboek*), and other relevant statutory regulations governing electronic contracts and digital commerce. Secondary legal materials comprise textbooks, scholarly journal articles, legal commentaries, conference proceedings, and other academic publications discussing contract law, cyber law, Artificial Intelligence governance, electronic commerce, and digital business regulation.

The collected legal materials are analyzed qualitatively using legal interpretation methods. Grammatical interpretation is employed to examine the ordinary legal meaning of the phrase "the user gives consent" under Article 18A of Law Number 1 of 2024 by analyzing the linguistic formulation of the statutory provision. Systematic interpretation is subsequently applied to interpret Article 18A within the broader framework of Indonesian contract law, electronic transaction law, and the principles of legal certainty, good faith, and transparency. Through systematic interpretation, the provision is analyzed in

relation to other statutory provisions governing electronic contracts and contractual consent to identify normative consistency and potential legal ambiguity.

Finally, this research applies deductive legal reasoning by deriving conclusions from general legal principles governing contractual consent and applying them to the specific legal issue concerning Artificial Intelligence-based international electronic contracts. The deductive method is employed to determine whether the current legal framework adequately accommodates autonomous electronic consent generated through AI Agents, smart contracts, Application Programming Interfaces (APIs), Internet of Things (IoT) devices, and machine-to-machine agreements. Based on this analysis, the research formulates a normative legal reconstruction intended to strengthen legal certainty regarding electronic consent in AI-based digital business transactions.

4. RESULTS AND DISCUSSION

4.1 Grammatical Interpretation of Electronic Consent under Article 18A of Law Number 1 of 2024

Article 18A of Law Number 1 of 2024 concerning the Second Amendment to Law Number 11 of 2008 on Electronic Information and Transactions establishes that an international electronic contract using standard contractual clauses shall be governed by Indonesian law under certain jurisdictional requirements. Article 18A further provides that electronic contracts must employ simple, clear, and understandable language while upholding the principles of good faith and transparency. Most importantly, Article 18A stipulates that "the user of the Electronic System Operator gives consent" as one of the legal requirements for determining the applicability of Indonesian law [11].

From a grammatical interpretation, the phrase "the user gives consent" consists of two essential legal elements: the subject ("the user") and the legal act ("gives consent"). Linguistically, the provision assumes that

consent is expressed through an intentional act performed by a legal subject. However, neither the statutory provision nor its explanatory memorandum defines the legal meaning of "consent" or specifies the acceptable forms through which electronic consent may be expressed [12].

Consequently, the statutory language merely introduces a general legal expression without explaining whether electronic consent may include click-wrap agreements, electronic signatures, biometric authentication, API authorization, AI-generated decisions, or machine-to-machine communications. The absence of statutory clarification creates multiple possible interpretations regarding the legal validity of electronic consent within international electronic contracts.

4.2 Systematic Interpretation of Electronic Consent within Indonesian Contract Law

Systematically, Article 18A cannot be interpreted in isolation. The provision must be understood together with the general principles of Indonesian contract law embodied in the Indonesian Civil Code, particularly the doctrine of consensualism, as well as Article 17 of the Electronic Information and Transactions Law, which requires parties engaging in electronic transactions to observe the principle of good faith.

Under Indonesian contract law, contractual consent represents the meeting of minds between legal subjects who voluntarily express their intention to establish legal relations. The concept of agreement therefore presupposes the existence of human intention, legal capacity, and mutual understanding between contracting parties.

Similarly, Article 18A reinforces contractual principles by requiring transparency, understandable contractual language, and good faith. Nevertheless, the statutory framework continues to presume that electronic consent originates from a human user interacting directly with an electronic system. Neither Article 17 nor Article 18A recognizes the possibility that contractual consent may be generated

autonomously through Artificial Intelligence, algorithmic decision-making, or machine-to-machine communication [13].

Accordingly, a systematic interpretation demonstrates that the Indonesian legal framework governing electronic contracts remains predominantly human-centered despite the rapid evolution of autonomous digital technologies [14].

4.3 Legal Ambiguity of Electronic Consent in Artificial Intelligence-Based International Electronic Contracts

The legal ambiguity under Article 18A becomes increasingly apparent when interpreted in light of contemporary technological developments. During the early development of electronic commerce, contractual relationships were primarily established through direct interaction between human users and electronic platforms. Users typically manifested consent by clicking an acceptance button, signing electronically, or completing an online registration process [15].

Today, digital business transactions have fundamentally changed. Artificial Intelligence (AI) Agents are capable of autonomously negotiating prices, accepting contractual offers, executing payments, and managing procurement activities without simultaneous human intervention. Internet of Things (IoT) devices automatically reorder inventory when stock levels become insufficient. Blockchain-based smart contracts independently execute contractual obligations once predetermined conditions have been satisfied. Likewise, Application Programming Interfaces (APIs) enable autonomous commercial transactions between interconnected digital systems [16].

In these transactions, no human actively performs the legal act of clicking, signing, or expressly accepting contractual terms at the moment the contract is formed. Instead, contractual consent is represented through algorithmic instructions previously embedded within autonomous systems. This technological phenomenon has introduced

the concept of autonomous electronic consent, whereby contractual relationships arise through machine-generated decisions rather than contemporaneous human expressions of intention [17].

However, Article 18A continues to employ the phrase "the user gives consent" without clarifying whether autonomous electronic consent falls within its legal scope. Consequently, the statutory provision creates a vague norm, since one legal phrase potentially accommodates multiple interpretations while providing no explicit legal standard for determining the validity of AI-generated consent.

4.4 Legal Gap between Traditional Contract Doctrine and Autonomous Digital Transactions

The ambiguity identified above reflects a broader legal gap between traditional contract doctrine and emerging digital technologies. Indonesian contract law is historically constructed upon three fundamental assumptions. First, contractual intention originates from human will. Second, contractual agreement results from mutual consent between legal subjects. Third, contractual communication occurs directly or indirectly through legally recognized forms of expression.

Contemporary digital commerce increasingly departs from these assumptions. Autonomous commercial systems are capable of making independent decisions, entering contractual relationships, and executing contractual obligations without immediate human participation. Consequently, the legal issue is no longer whether electronic contracts are legally valid, but rather whether autonomous decisions generated by Artificial Intelligence may legally represent human contractual intention [18].

If AI-generated decisions are recognized as legally valid consent, a clear statutory basis becomes necessary to define their legal consequences and allocate contractual responsibility. Conversely, if AI-generated decisions cannot be regarded as legally effective consent, a substantial

proportion of contemporary autonomous digital transactions may face uncertainty concerning their contractual validity.

4.5 Normative Reconstruction of Electronic Consent in Artificial Intelligence-Based Digital Business Transactions

The foregoing analysis demonstrates that the principal legal issue under Article 18A is not the absence of legal regulation but rather the ambiguity of the existing statutory norm. The provision already recognizes electronic consent; however, it fails to specify who may legally provide consent, the legally acceptable forms of electronic consent, and whether autonomous electronic consent generated by Artificial Intelligence constitutes a valid expression of contractual intention [19].

Accordingly, this research argues that the concept of electronic consent should be normatively reconstructed to accommodate technological developments without abandoning the fundamental principles of Indonesian contract law. The legal concept of consent should no longer be confined exclusively to direct human interaction but should also recognize autonomous electronic consent generated through AI Agents, machine-to-machine agreements, smart contracts, APIs, and Internet of Things systems, provided that such autonomous actions remain attributable to identifiable legal subjects and continue to satisfy the principles of legal certainty, good faith, transparency, and accountability [20].

Such normative reconstruction would strengthen legal certainty for international electronic contracts while enabling Indonesian electronic transaction law to remain responsive to the continuing evolution

of Artificial Intelligence-based digital business ecosystems.

5. CONCLUSION

This study concludes that the phrase "the user gives consent" under Article 18A of Law Number 1 of 2024 concerning the Second Amendment to Law Number 11 of 2008 on Electronic Information and Transactions constitutes a legal ambiguity (vague norm) rather than a legal vacuum. Although the provision recognizes electronic consent as an essential element in the formation of international electronic contracts, it fails to define the legal forms, mechanisms, and scope of valid electronic consent in the context of Artificial Intelligence (AI)-based digital business transactions. Through grammatical and systematic interpretation, the study demonstrates that the current legal framework continues to reflect a human-centered conception of contractual consent and does not adequately accommodate emerging technologies such as AI Agents, smart contracts, Application Programming Interfaces (APIs), Internet of Things (IoT) devices, and machine-to-machine agreements. Consequently, the existing statutory formulation creates legal uncertainty regarding the validity of autonomous electronic consent and its legal consequences. Therefore, a normative reconstruction of the concept of electronic consent is necessary to extend its legal recognition beyond traditional human consent toward autonomous electronic consent, while maintaining the fundamental principles of legal certainty, good faith, transparency, accountability, and contractual responsibility in international digital business transactions.

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