

Analysis of the Process of Implementing Analog Land Certificates to Electronics at the National Land Office of Palopo City

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Abstrak

This study aims to analyze the implementation of the conversion of analog land certificates into electronic certificates as an effort to strengthen legal protection and ensure certainty of land ownership rights. Using a normative-empirical research approach, the study examines both the legal framework governing electronic land registration and its practical implementation. The analysis is based on primary legal materials and empirical data, which are interpreted qualitatively and presented descriptively. The findings indicate that the issuance of electronic certificates follows a structured process involving comprehensive verification and validation of physical, juridical, and ownership data before the certificate is issued. The implementation is primarily guided by the Regulation of the Minister of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN) Number 3 of 2023. The study also confirms that analog and electronic certificates possess equal legal validity as evidence of land ownership. However, several challenges remain, particularly public concerns regarding data security and the extensive verification process required to validate land records. As experienced by the National Land Agency of Palopo City, these challenges have delayed the issuance of some electronic certificates, requiring unprocessed applications to be carried forward to the following year.

Keywords

Analog Certificate, Electronic Certificate, National Land Agency of Palopo City



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INTRODUCTION

In the era of digitalization, which is currently developing rapidly, various government sectors and public services continue to innovate in the administrative system, including in the land sector. In response to these challenges, the Ministry of Agrarian and Spatial Planning/National Land Agency (ATR/BPN) initiated the implementation of electronic land certificates regulated through the Ministerial Regulation of ATR/BPN Number 3 of 2023 (Mirtha Ilmi et al. 2026). The implementation of electronic land certificates aims to increase efficiency, transparency, and security in the management of land data, as well as reduce problems that have occurred in the physical land certificate system, such as forgery, ownership disputes, and document loss. Article 1 paragraph (9) of the Regulation of

the Minister of ATR/BPN Number 3 of 2023 concerning the Issuance of Electronic Documents in Land Registration Activities explains the meaning of electronic certificates, namely electronic certificates, hereinafter referred to as El Certificates, are certificates issued through electronic systems in the form of electronic documents whose physical data and juridical data have been stored in BT-el.

The change from physical to electronic land certificates raises questions about the legal validity of digital documents as conventional evidence of legal ownership (Wulandari et al. 2026). In the conventional land system, a physical land certificate is a strong evidence of land ownership rights, as stipulated in Article 32 paragraph (1) of Government Regulation Number 24 of 1997 concerning Land Registration which states that a certificate is a valid proof of rights as a strong evidence of physical data and juridical data contained in it. As long as the physical data and juridical data are in accordance with the data in the survey letter and the land book of the right concerned.

With the changes to the electronic system, there is a need for clear legal certainty regarding the validity of electronic certificates compared to physical certificates that have long been recognized as strong legal evidence. The digitization of land rights certificates has important implications for the legal and regulatory aspects of land. Its implementation requires clear regulations regarding the use, storage, and exchange of land data electronically (Kadi 2024). The regulation must ensure data security, privacy protection, and the legal validity of digital land certificates. In addition, a strict legal framework is needed regarding the recognition and proof of electronic documents in land law. On the other hand, although technology improves efficiency and access to information, the digital access gap is still a challenge for some people.

Palopo City is one of the intermediate cities in South Sulawesi Province that has considerable natural resource potential, especially in the plantation, forestry, and industrial sectors. The rapid development in these various sectors has led to a high demand for land, which ultimately encourages the certainty of legal land ownership. In this context, the existence of a land rights certificate is very important as a strong proof of ownership, including the ownership of the transfer of land rights. This is relevant as a form of transfer of physical to electronic certificates which is a renewal of the legitimacy of land rights ownership. Electronic certificates are expected not only as a tool for storing land tenure data but also as one of the essential parts of a more general information security system (Rahayu 2025). Of course, the implementation of changing physical land certificates to electronic certificates at land

offices includes various administrative stages that must be passed by landowners and related parties. The main benefit of implementing electronic land certificates lies in increasing efficiency in the issuance and management of land documents (Sudirman, n.d.). This change begins with the collection and verification of land ownership documents, digitization of data, and issuance of electronic certificates through a system that has been set by the Land Office. This process is expected to speed up land services and provide ease in synchronizing physical land certificates to electronics. Legal certainty on land ownership rights is very fundamental (Ardan, n.d.). Therefore, the digital system used can be more secure and transparent compared to physical certificates that are vulnerable to loss or forgery. In its implementation, the change from physical to electronic certificates still faces various problems and challenges.

The digital systems used in the electronic certificate process require stable internet connectivity as well as strong data security protection to prevent the risk of hacking or misuse of information. If the infrastructure is not optimal, then the digitalization process can experience obstacles, thereby slowing down services that should be more efficient. In addition to technical factors, the level of public understanding of this change is also an obstacle in its implementation. Many landowners still feel more comfortable with physical certificates because they are considered more real and can be stored directly. The lack of socialization has caused confusion and distrust of this new system.

The impact caused by the advancement and development of current technology can create a new legal act (Elora 2024). Although electronic certificates have been recognized in laws and regulations, there are still concerns regarding their validity in the case of land disputes. The digitization of land rights certificates has important implications for the legal and regulatory aspects of land. Its implementation requires clear regulations regarding the use, storage, and exchange of land data electronically. The regulation must ensure data security, privacy protection, and the legal validity of digital land certificates. In addition, a strict legal framework is needed regarding the recognition and proof of electronic documents in land law. On the other hand, although technology improves efficiency and access to information, the digital access gap is still a challenge for some people.

Based on this, an in-depth study is needed, specifically at the Palopo City Land Agency, regarding the process of implementing analog land certificates in the form of electronic certificates. This research not only focuses on normative analysis of the applicable regulatory provisions, but also examines the ability of E-Certificates to

provide certainty and legal protection for property rights in digital systems.

METHODS

This research uses a type of normative-empirical research, namely legal research to analyze laws and regulations and their application as a study in solving problems from various perspectives that are developing in society regarding the policy of issuing electronic certificates. The data materials used in this study are sourced from primary data and secondary data. Primary data is research data sourced from laws and other laws, while secondary data is supporting data sourced from books, journals, and other literature through literature research. The data material is analyzed qualitatively and presented descriptively.

RESULTS AND DISCUSSION

Technological advances will empower the registration of previously conventionally generated reports to be moved into an electronic filing structure, electronic filing is planned for substantial evidentiary methods (Putra and Winanti 2023a). As a strategic step to support this policy, the government introduced electronic land certificates regulated in the Regulation of the Minister of Agrarian and Spatial Planning/Head of the National Land Agency Number 3 of 2023 concerning the Issuance of Electronic Documents in Land Registration Activities. In the context of electronic documents, these systems are designed to prevent falsification, double claims, and data manipulation that are often a source of land disputes (Mujiburohman 2025). It replaces paper-based manual methods with digital innovations that offer high efficiency, security, and accessibility. The implementation of E-Certificates in land administration not only speeds up the verification and transaction process, but also increases openness and responsibility in managing land data. Electronic certificates play an important role in proving legal ownership, which can minimize the risk of counterfeiting and provide stronger security and legal validity.

From a legal point of view, this breakthrough must be tested based on the principle of legal certainty (Hasanah et al., n.d.). Legal certainty is an important basis for assessing the extent to which the process provides guarantees for land rights owned by the community. A certificate is a certificate of proof of rights as referred to in Article 1 Paragraph (8) of the Regulation of the Minister of Agrarian and Spatial Planning/Head of the National Land Agency Number 3 of 2023 concerning the Issuance of Electronic Documents in Land Registration Activities, defining a certificate as a certificate of proof of land rights, management rights, waqf land, ownership rights to flats and dependent rights, each of which has been recorded in

the relevant land book. To understand in depth, there are several things that are of serious concern in its implementation, both normatively and technically the implementation mechanism that will be discussed in the sub-discussion of this research.

Land Certificates Analog to Electronic Certificates

Regulation of the Minister of Agrarian and Spatial Planning/Head of the National Land Agency (Permen ATR/BPN) Number 1 of 2021 concerning Electronic Certificates which is revoked and replaced with the Regulation of the Minister of Agrarian and Spatial Planning/Head of the National Land Agency Number 3 of 2023 concerning the Issuance of Electronic Documents in Land Registration Activities, which is the main milestone in its implementation. In addition, Government Regulation Number 18 of 2021 and Ministerial Regulation of ATR/BPN Number 6 of 2018 concerning Complete Systematic Land Registration (PTSL) are also the normative foundation in accelerating the process of digitizing land data in Indonesia. Through these regulations, electronic certificates are positioned as evidence of legal ownership of land rights and have the same legal force as physical certificates. This is in line with the spirit of bureaucratic reform and government policies in realizing transparent and efficient digital-based public services (Indriani et al. 2025).

This policy brings great hope to the community, which is expected to be able to suppress various problems such as land disputes due to dual ownership and certificate forgery. Through a digital system integrated into the BPN database, the authenticity of land certificates can be verified more easily and accurately. In addition, the implementation of electronic certificates is also expected to minimize the circulation of fake certificates and prevent overlapping land ownership rights which have been the source of land problems in Indonesia (Setiawati et al. 2021). Conceptually, the Minister of ATR/BPN Number 3 of 2023 has expressly formulated the scope of the use of electronic systems, which includes initial land registration, data maintenance, archiving changes, and transferring media to e-certificates. The clarity of this regulation reflects the fulfillment of the element of legal certainty in determining the scope of regulated actions and their legal classification (Bestari and Setiawati, n.d.). With the implementation of interconnected digital systems, land information can be collected and managed in one centralized database, so that the potential for loss of archives and misuse of documents can be minimized.

The application of security technologies such as the use of e-signs and digital data protection to minimize the potential for counterfeiting or duplication, thereby increasing trust and legal protection for land rights holders. Through the Electronic

Land Certificate stored in the Land Office's electronic database, the risk of loss, damage, and misuse can be avoided (Bestari and Setiawati, n.d.). This system also increases transparency so as to minimize the potential for abuse or corruption, efficiency, and ease of access to online services such as land registration, name change, and dependent rights. Overall, the implementation of the Electronic Land Certificate realizes modern, efficient, and accountable land administration and provides a guarantee of stronger legal certainty for the community.

Legal Protection of Electronic Land Certificates

Article 1 paragraph (9) of the Regulation of the Minister of ATR/BPN Number 3 of 2023 concerning the Issuance of Electronic Documents in Land Registration Activities means that an electronic certificate is an Electronic Certificate, hereinafter referred to as an el Certificate, is a certificate issued through an electronic system in the form of an electronic document whose physical data and juridical data have been disposed of in BT-el, the results of which of land registration activities are issued in the form of electronic documents Furthermore, the definition of electronic document is contained in Article 1 paragraph (12) that Electronic Document is any electronic information that is created, forwarded, transmitted, received, or stored in analog, digital, electromagnetic, optical, or similar form, which can be seen, displayed, and/or heard through a computer or electronic system, including but not limited to writing, sound, image, map, design, photograph or the like, letters, signs, numbers, access codes, symbols or perforations that have a meaning or meaning or can be understood by a person who is able to understand them.

Basically, the Ministerial Regulation of ATR/BPN No. 3 of 2023 above has specifically regulated the use of e-certificates as evidence. This regulation in principle emphasizes that electronic documents and/or their printed results are valid legal evidence and an extension of valid evidence in accordance with the applicable procedural law in Indonesia, where for the purpose of proof, electronic documents can be accessed through an electronic system. The regulation has provided legal force to be used as a valid evidence, so this also explains that this ministerial regulation does not experience a conflict of norms or conflict with other laws and regulations (Nasution and Ramadhani 2023).

An electronic land certificate, as an electronic document equipped with a certified electronic signature, does not pose a juridical obstacle in proving in court. Judging from the theory of legal protection by Philipus M. Hadjon, electronic land certificates provide preventive legal protection. This protection is realized because electronic systems allow for transparency, data traceability, and an objection

mechanism before an administrative decision is final. Public concerns regarding the security of electronic certificate data have been anticipated by the Ministry of ATR/BPN in collaboration with the State Cyber and Cryptography Agency (Haris et al. 2026). Therefore, the implementation of electronic land certificates actually strengthens certainty and legal protection for land rights holders.

The Urgency of Electronic Land Certificates in the Legal System

A land certificate is legally concrete evidence of ownership of land rights (Putra and Winanti 2023). Physical or analog certificates that have been held by the community, still give rise to seemingly endless problems with the various problems they face, such as the occurrence of double certificates and/or the existence of mafia individuals who dispute land. Another problem is that if the physical certificate is lost or damaged by disasters such as floods and fires that cause the certificate cannot be owned in its entirety as a holding of land rights. Physical or analog certificates that have existed for a long time, still have many obstacles, both in the first registration and maintaining the data that has been registered at the district/city land office (Shella Aniscasary Shella and Risti Dwi Ramasari 2022). The government through the Ministry of ATR/BPN implements a policy to convert land certificates to electronic with a digital system that aims to prevent land rights ownership problems and make it easier for the Ministry of ATR/BPN to monitor land mafia activities and other negative things.

Land registration is also to be carried out electronically to avoid data entry errors and malicious intentions. With an electronic certificate, the government will find it easier to find out if there is data misuse or changes in account ownership identity data (Sudarto Sudarto 2022). The urgency or importance of land registration or electronic certificate making is part of the main purpose of land, namely to reduce the number of disputes to falsification of data that has often occurred, as well as to provide legal certainty of land rights. Technological advances will empower the registration of previously physically generated reports to be moved into electronic filing structures, electronic filing planned for substantial evidentiary methods. This is an effort to integrate data owned by the Ministry of ATR/BPN. The integration of data and information through electronic certificates has the potential to be a legal protection for the public.

Electronic certificates want to guarantee data validation for their users because certificates in electronic form are able to identify the owner of the certificate directly. Electronic certificates also provide data integrity assurance through checking whether transformations are found in the document that is signed and

cannot be denied because it is proven directly at the time of signing, and can deny falsification of data integrity.

Electronic Land Certificate Security System

The security system of electronic land certificates (e-certificates) is designed to provide stronger protection than conventional paper certificates through the implementation of advanced digital technology. The system relies on four main security mechanisms. First, electronic signatures issued by the Electronic Certification Center (BSrE) under BSSN ensure the authenticity and integrity of documents, making any unauthorized modification immediately detectable. Second, each certificate is equipped with a unique QR Code that enables real-time verification through the Sentuh Tanahku application, ensuring that the certificate data is always synchronized with the latest records in the central BPN database. Third, the system integrates a single identity and biometric verification based on the National Identity Number (NIK), allowing only verified owners to access their certificates while preventing duplicate land registrations. Finally, all certificate data are protected through high-level encryption and securely stored on centralized cloud servers with layered backup systems, ensuring data security and continuity even in the event of disasters affecting local land offices. Together, these features create a secure, reliable, and efficient electronic land administration system.

In the event of a data leak, the legal responsibility basically lies with the electronic system manager, in this case the Ministry of ATR/BPN as the data controller. These responsibilities include the obligation to maintain data security, prevent illegal access, and provide protection for the rights of data subjects. However, the results of the analysis show that there is a legal gap in the technical arrangements related to the accountability mechanism in the event of a data leak in the electronic land certificate system. Existing regulations do not provide for detailed forms of administrative sanctions or recovery mechanisms for victims of data leaks (Mbalur et al. 2026). These findings are in line with previous research that states that regulations in the field of personal data protection in Indonesia still need to be strengthened, especially in the aspects of implementation and law enforcement. This condition shows the need for harmonization between land regulations and personal data protection, as well as improving the information technology security system in the implementation of electronic land certificates.

Obstacles to the Implementation of Analog Land Certificates to Electronic Certificates at the National Land Agency of Palopo City

In line with the issuance of the Minister of ATR/BPN Regulation Number 3 of

2023 as the main legal basis for the implementation of the issuance of electronic land certificates, issues and problems that arise in the community have become uncontrollable, such as the emergence of debates about the e-certificate policy caused by the lack of socialization carried out by the land authorities themselves in various regions, including Palopo City. In addition, the massive news on social media about e-certificates makes people carried away by situations that actually do not happen, such as the withdrawal of analog land certificates that have been issued (Ermala et al., n.d.). So that the Palopo City BPN, namely Fadil Setiawan as the First Expert Land Manager, through an interview, gave his response stating that information disclosure to the public will not all have a positive impact. However, it is necessary to confirm the information conveyed, so that the actual content and meaning can be conveyed correctly.

The implementation of land registration is an activity of collecting and processing physical and juridical data on land plots to be registered (Fikri and Damayanti, n.d.) Regarding land that has been registered, the certificate will be replaced with an electronic certificate through an application for land registration data maintenance services with the note that the physical data and juridical data in the land book and certificate are in accordance with the physical data and juridical data in the electronic system. At the level of laws and regulations, the land registration system through the electronic system already has a concrete and comprehensive legal basis. However, the meaning of the implementation of a regulation does not only reach the concreteness and comprehensiveness of the regulation, but also includes the readiness of various parties who will then be involved, both in relation to the operator of the electronic land registration system, namely the Ministry of ATR/BPN and the general public who will register or replace their land certificates.

Since the regulation on electronic certificates was established, the Ministry of ATR/BPN and various print and electronic media have begun to report and disseminate information related to this regulation so that it can be known by the public. However, the land sector is still experiencing obstacles to acceleration due to the lack of face-to-face socialization to convince or eliminate public concerns about the implementation of the electronic land certificate. Of course, the hope is that digital personal data regarding land rights ownership can be protected. Although the legal basis already exists, the implementation of media transfer confronts land administration with a number of main interrelated problems: (1) the quality of historical data as a source of registration truth; (2) the accuracy of the verification

procedure when transferring media; (3) interoperability of IT systems and infrastructure between offices; (4) human resource capacity and digital literacy; and (5) cybersecurity and personal data protection. These five areas appear consistently in empirical studies and policy reviews on electronic certificates (Adinegoro and Iswahyuni, n.d.).

Analog Data Incompatibility in the Media Transfer Process

In principle, the change of land data requires thorough synchronization between analog archives such as land books, survey letters, and field maps with electronic data in the National Land Agency system. This is important because the mismatch between analog and digital data can result in multiple different versions of information about the same plot, causing the risk of certificate overlap to remain high even if the system has been switched to an electronic format (Mohamad Arista Hafid et al. 2026). The new land administration system will be optimal if supported by strong data quality. This digital transformation is also part of land administration reform, but it is still faced with substantial challenges, especially related to data accuracy before the digitization process is carried out.

Regarding the process of transferring land book media, if there is an overlap in the land plot, then the process cannot be continued until the problem is resolved. This overlap is generally due to differences in mapping technology used between the past and the present. When analog certificates were issued, the technology and information systems used at that time were considered the most up-to-date and accurate according to the conditions of technological development at the time. However, with rapid advances in the field of information and geospatial technology, the method of recording and mapping land objects has undergone a significant transformation. Today, the digitization and issuance process of electronic certificates uses much more precise technologies, including spatial data integration. These differences result in a discrepancy between the old (analog) and new (electronic) data, which can ultimately result in overlapping information related to the boundaries and locations of the land parcel.

In this regard, if it is found or known that there is a case of overlap or data discrepancies, then the technical implementer in the field of the land office will carry out verification steps through re-measurement. In addition, the implementing officer will make boundary adjustment to adjust the spatial data recorded in analog documents with the actual conditions that will be input into the electronic certificate system.

Stages of Analog to Electronic Certificate Issuance Flow

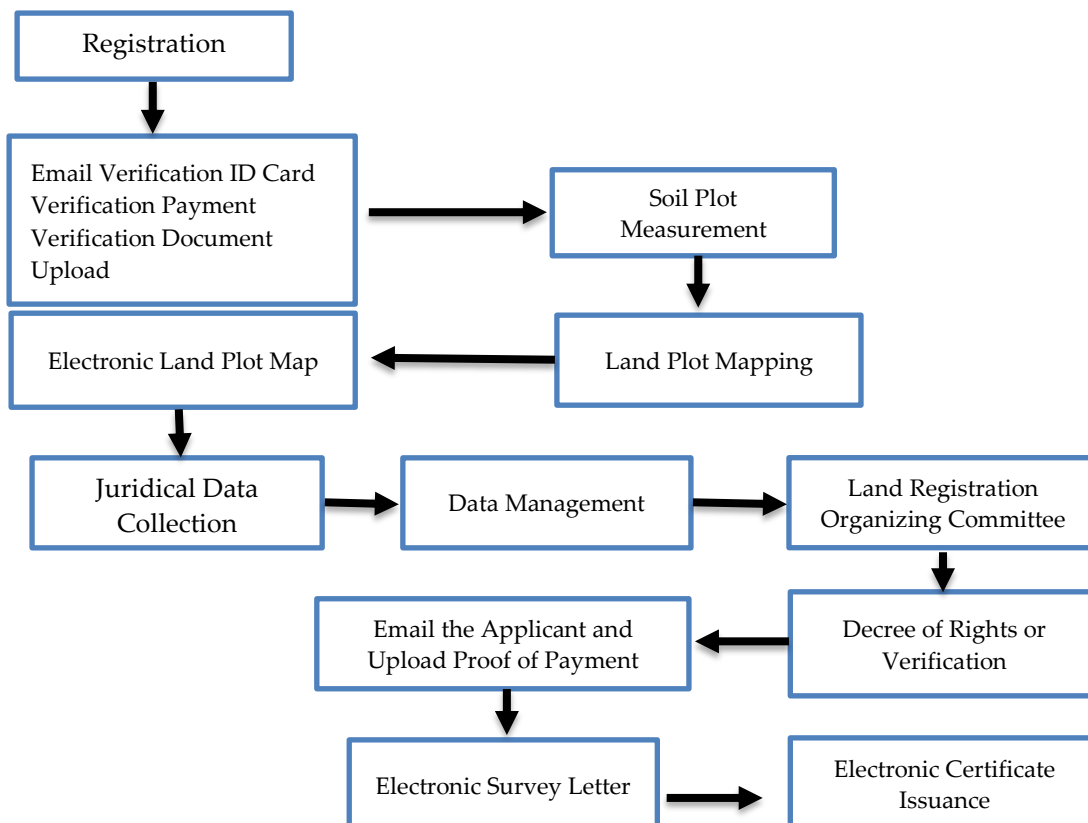
The land registration procedure to obtain an electronic certificate consists of 3 (three) divisions, namely;

1. Issuance of electronic certificates is carried out for the first time

Land registration for the first time is registration for land that has not been registered previously or has not had time to register the land registration process for the first time (Permana et al., n.d.). People who want to make a land certificate, first register the land which includes collecting information or other types of data in accordance with applicable regulations. Along with technological advances, it triggers changes in public services such as services in the land sector. The benefits of electronic land registration today make it very easy for people to carry out the land registration process electronically, unlike manual or physical certificates whose registration process is very difficult and classified as convoluted and very often used as a form of fraudulent actions that are very detrimental to the community.

Of course, the issuance of electronic certificates has certain stages, especially the issuance of electronic certificates which is carried out for the first time has its own flow. To facilitate understanding of the flow according to the provisions, it can be seen in the following chart:

Bagan 1
Land Registration Flow To Get Electronic Certificate For The First Time



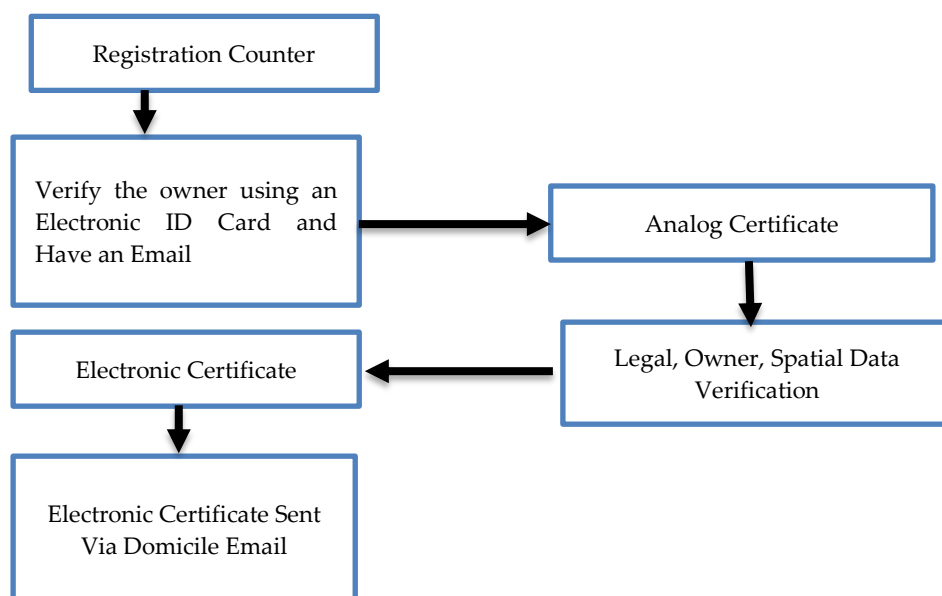
Source: Office of the National Land Agency of Palopo City

The first registration process for issuing an electronic land certificate follows a structured procedure to ensure the accuracy, validity, and security of land ownership data. The process begins with the applicant preparing the required documents and completing administrative verification at the registration counter, including identity verification, payment, document upload, and email registration. Subsequently, authorized land officers conduct field measurements and map the land using spatial data to produce an electronic cadastral map. After the physical data are verified, juridical data are collected and validated by the implementing committee before being processed for land registration. Once the verification process is completed, the committee issues the land rights decree (SK Hak). Applicants are then required to upload proof of payment, after which confirmation is sent via email. Finally, upon successful completion of all administrative and technical requirements, the survey letter and electronic land certificate are issued and delivered electronically to the applicant as official proof of land ownership. These are the things that will be done by the land party in the process of issuing electronic certificates, and of course the community must participate in these stages.

2. Issuance of Electronic Certificates Through Media Transfer

The issuance of electronic certificates through the transfer of media who can do so is the right holder, namely the public who wants to transfer the media in the analog certificate to the electronic certificate (Lubis 2025). The issuance of electronic certificates through media transfer, this applies to lands that already have a certificate in analog form. The stages of the plot are as follows:

Bagan 2 **Stages of Media Transfer Land Registration Flow**



Source: Office of the National Land Agency of Palopo City

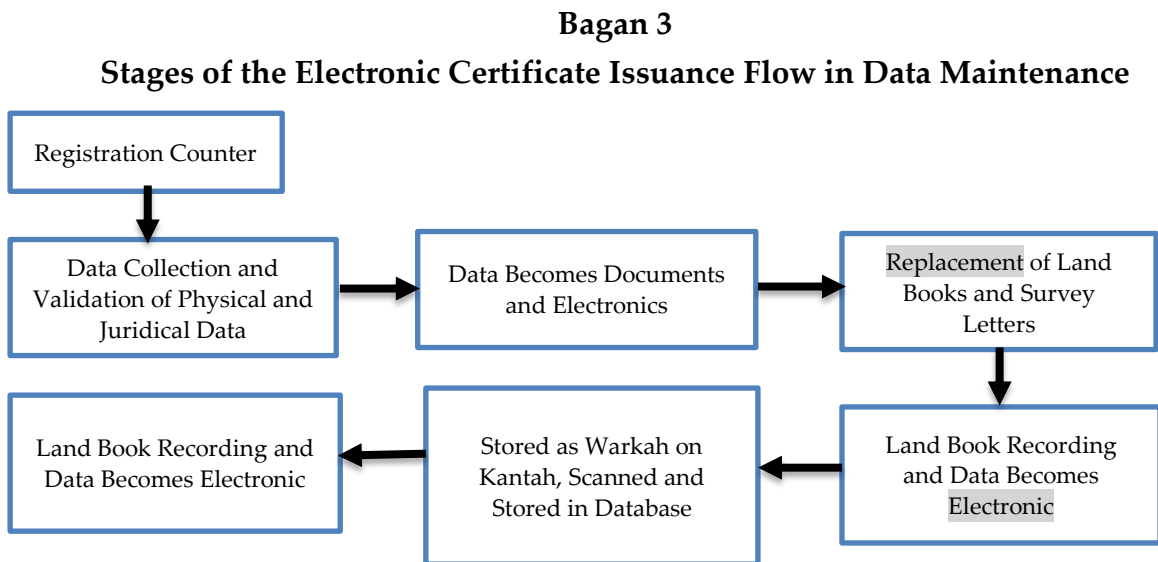
The transfer of media registration process applies to land parcels that already possess analog (paper-based) certificates and are being converted into electronic certificates. The procedure begins with the applicant submitting the required documents, including a valid identity card and an active email address for verification purposes, along with the original analog certificate as proof of ownership. The land office then conducts a comprehensive verification of the juridical, ownership, and spatial data to ensure the accuracy and validity of the information. After the verification process is successfully completed, the electronic certificate is issued and delivered to the registered owner's email address. This simplified conversion process facilitates the transition from conventional to electronic certificates while maintaining the authenticity and legal certainty of land ownership records.

3. Issuance of Electronic Certificates in the Context of Data Maintenance Services

The maintenance of land rights is an integral part of the land registration system which aims to realize legal certainty. In the sense of land law, the maintenance of land rights can be understood as a series of administrative and juridical actions carried out on an ongoing basis to ensure that the data listed in the land registry is always in accordance with the actual physical and legal circumstances (Widad, n.d.). Maintenance of electronic certificate data is carried out if there is a change, such as merger, separation, and/or division of land parcels which of course affects the land certificate currently owned. Another reason is that if there is an elimination of rights or transfer of land rights, so that the ownership certificate

is adjusted to the new owner of the right.

That is why data maintenance in the issuance of electronic certificates is one of the most important parts to be understood together. Of course, changes in the maintenance of electronic certificate data have flow stages based on the provisions that have been set. To facilitate this understanding, here is a chart that can be seen:



Source: Office of the National Land Agency of Palopo City

The land registration data maintenance process for electronic certificates begins with the applicant preparing the required documents, including the analog certificate, electronic certificate (if available), and other supporting documents, before submitting an application at the land registration service counter. The counter officer then verifies the completeness of the documents and validates both the physical and juridical data, after which a payment order is issued for the applicable service fee. Once the verification is completed, all validated documents are digitized and uploaded into an integrated electronic land administration system, with each scanned document authenticated through an electronic seal. The system subsequently records any changes to the physical or juridical data in the electronic land book (BT-el), creating a sequential digital history of all updates in the land office database. After the entire process has been completed successfully, the electronic certificate (e-certificate) is issued, and the right holder is entitled to obtain an official copy as legal proof of land ownership. This is the explanation of data maintenance in the issuance of electronic certificates as an effort to ensure legal certainty in the ownership of rights in the event of the transfer of land plot rights.

Based on the stages of the electronic certificate issuance flow above, the implementation of land certificate digitization in Palopo City will begin in 2024 and

until now is still in the transition stage from a manual system to an electronic system. The data found in this study are data from 2024 to 2026 with data presentation of the number of media transfer registrants and results that have been published electronically.

The following data was obtained from the National Land Agency of Palopo City, namely:

Table 1. Issuance of Electronic Certificates in 2024

No	Remarks	Quantity
1	Electronically Ready Data	54.910
2	Electronic Services Land Field	11.746
3	Total Area of Palopo City	24.752 Ha

Table 2. Issuance of Electronic Certificates in 2025

No	Remarks	Quantity
1	Electronically Ready Data	56.603
2	Electronic Services Land Field	14.611
3	Total Area of Palopo City	24.752 Ha

Table 3. Issuance of Electronic Certificates in 2026

No	Remarks	Quantity
1	Electronically Ready Data	48.267
2	Electronic Services Land Field	17.297
3	Total Area of Palopo City	24.752 Ha

Based on the presentation of the data table above, there is a difference in the number of electronic ready data and the number of electronic service land plots each year from 2024 to 2026. To clarify, the electronically ready data referred to in the table is the amount of data that has been electronically transmitted to the system, but the certificate has not been issued electronically. The information on the electronic service land field in the table is certificate data that has been published electronically.

In addition, in the table chart, there is a discrepancy in the number of numbers issued between the electronic ready data and the electronic service land field because the amount of data is quite high and the stages of the verification process are quite time-consuming, so that the data of analog certificates that are registered and have been recorded electronically cannot be published in their entirety in the same year. The electronic ready data that has not been issued by

electronic certificate will be transferred to the following year.

CONCLUSION

Land plays a fundamental role in human life, making legal certainty over land ownership essential through the possession of a valid land certificate. In Indonesia, the transition from analog to electronic land certificates is regulated under the Regulation of the Minister of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN) Number 3 of 2023, particularly Article 84, which provides the legal basis for electronic land registration. In line with this regulation, the National Land Agency (BPN) of Palopo City has implemented the issuance of electronic certificates to strengthen legal certainty, prevent duplicate certificates, and protect ownership records from physical damage caused by disasters such as fires or floods. Nevertheless, the implementation process continues to face several challenges, including limited public understanding of digital technology, concerns regarding data security, and the complexity of processing a large volume of registration applications. Although the Ministry of ATR/BPN has actively disseminated information regarding the benefits and security of electronic certificates through various media, these obstacles remain important issues in optimizing the transition to a fully digital land administration system.

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