



NATIONAL SECURITY STRATEGY IN THE FIELD OF CYBER AND CRYPTOGRAPHY THROUGH ELECTRONIC CERTIFICATION SERVICES

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ABSTRAK

Maraknya kejahatan di dunia maya menyebabkan masyarakat khawatir akan terjadinya tindak pidana pencurian dan pemalsuan data pribadi dalam bentuk elektronik. Oleh karena itu, pemerintah berkewajiban untuk memberikan perlindungan kepada masyarakat dari segala bentuk gangguan yang diakibatkan oleh penyalahgunaan teknologi informasi dan transaksi digital. Berdasarkan hal tersebut, penelitian ini bertujuan untuk mengetahui dan memahami apa saja yang menjadi kendala BSRE sebagai lembaga penyedia layanan pengurusan sertifikat elektronik yang tidak dapat memberikan layanan secara umum. Kemudian, apakah kewenangan BSRE dalam memberikan layanan sertifikat elektronik secara umum kepada masyarakat bertentangan dengan peraturan perundang-undangan? Metode yang digunakan dalam menyusun penelitian ini adalah metode penelitian Hukum Normatif dengan sumber data yaitu data sekunder yang dikumpulkan melalui studi kepustakaan. Hasil penelitian menunjukkan bahwa kendala BSRE sebagai lembaga yang memberikan layanan pengurusan sertifikat elektronik adalah tidak dapat memberikan layanan secara umum karena masih dipisahkan oleh ketentuan lembaga dan non lembaga yang membatasi ruang lingkup BSRE dalam memberikan layanan sertifikat elektronik kepada publik/masyarakat umum. Selain itu, BSRE sebagai Penyelenggara Sertifikasi elektronik hanya melayani masyarakat umum yang berstatus warga negara Indonesia yang berstatus sebagai pegawai pemerintah atau instansi.

Kata Kunci: Strategi Keamanan; Sertifikasi; Elektronika.

ABSTRACT

The rise of cybercrime has caused the public to worry about criminal acts of theft and falsification of personal data in electronic form. Therefore, the government is obliged to provide protection to the public from all forms of disturbances caused by misuse of information technology and digital transactions. Based on this, this research aims to find out and understand what are the obstacles for BSRE as an agency providing

electronic certificate management services which cannot provide services in general. Then, does BSRE's authority to provide general electronic certificate services to the public conflict with statutory regulations? The method used in preparing this research is the Normative Law research method with the data source, namely secondary data collected through literature study. The research results show that the obstacle for BSRE as an agency providing electronic certificate management services is that it cannot provide services in general because it is still separated by agency and non-agency provisions which limit the scope of BSRE in providing electronic certificate services to the public/general public. Furthermore, BSRE as an electronic Certification Organizer only serves the public as Indonesian citizens who have the status of government or agency employees.

Keywords: *Security Strategy; Certification; Electronics.*

I. BACKGROUND

Economic growth and technological developments in the digital era currently have a huge influence on every sector of people's lives in the world. The impact of changes based on globalization also forces changes and updates to the law so that it can adapt to all of society's needs. Of course this has also influenced the legal system in Indonesia. One of the legal systems that influences people's needs in technological development is the ease of obtaining electronic certificate services. An electronic certificate is a symbol or statement written by a party who has authority and is intended as

proof that someone has authority over ownership of a document or object.¹

The legal system related to electronic certificate services is contained in PP Number 71 of 2019 concerning Implementation of Electronic Systems and Transactions. As a juridical basis for providing benefits from information technology and providing electronic certificate services. The state has the main goal of protecting the public at large against disturbances from misuse of digital news and information and various

¹ Imam Taopik, Adelia Alvi Yana, Astrilyana, Tri Santoso, Resti Lia Andharsaputri, *Penerapan Aplikasi E-Sertifikat Di Pusat Pengembangan Kompetensi Medistra Indonesia (PPKMI)*. INNOVATIVE: Journal Of Social Science Research Volume 3 Nomor 6 Tahun 2023, E-ISSN2807-4238andP-ISSN2807-4246. hlm. 1.

types of transactions carried out using electronics, including digital signature security. The concept of a digital signature in this discussion is a process of attaching a signature whose authenticity is tested and then stored and scanned with a data system.²

In realizing the national goal of Indonesian citizens, namely protecting all of Indonesia's blood as stated in the fourth paragraph of the Preamble to the 1945 Constitution of the Republic of Indonesia. This is clarified in the provisions of Article 28g paragraph (1) of the 1945 Constitution of the Republic of Indonesia. which explains with the meaning "Every person has the right to protection of himself, his family, honor, dignity and property under his control, and has the right to a sense of security and protection from the threat of fear of doing or not doing something which is a human right."

That the form of protection for personal data and electronic certificates is part of human rights

where the state is obliged to guarantee that the data is safe from falsification or data theft, the Indonesian state has the National Cyber and Crypto Agency (BSSN) where there are institutions under the BSSN specifically carrying out certification electronic namely the Electronic Certification Center (BSrE).

The act of falsifying data is a form of action that has the potential to cause harm to certain people resulting from the actions of a third party with business goals or personal interests. "Therefore, technology is needed that can store information permanently and has a level of digital-based security, so that only authorized people can see the data and it is impossible to change it."³

This is because security issues are very vital, so many software companies such as Netscape and Microsoft have created software that is able to guarantee the security of electronic commerce transactions. Not only that.⁴

² E. A. Kriswanto and Fitriyadi, "Implementasi Digital Signature Untuk Validasi Disposisi Surat," J. Ilm. Tek. Inform. dan Sist. Inf., vol. 9, No. 1, 2020, hlm. 2.

³ S. Watini, Q. Aini, U. Rahardja, N. P. L. Santoso, and D. Apriliasari, "Class DojoLMS in the Interactive Learning of PAUD Educators in the Disruption Era 4.0," J. Innov. Educ. Cult. Res., vol. 3, no. 2, 2022, hlm. 1.

⁴ Abdul Halim Barkatullah, *Hukum Transaksi Elektronik Sebagai Panduan dalam*

As an effort to improve Electronic Certification Services nationally, which apart from being the responsibility of the government, in this case BSSN, also includes the involvement of BSrE as an organizer which was formed specifically to provide electronic certificate issuance services in general, BSrE, as well as private parties in carrying out a business, but not necessarily. -Just for economic purposes, the government must also be responsible for the security of personal data by providing services and managing electronic certification as a national cyber security strategy for all Indonesian people.

The use of electronic certificates is mandated by Law Number 19 of 2016 concerning Amendments to Law Number 11 of 2008 concerning Electronic Information and Transactions (ITE) and Government Regulation Number 82 of 2012 concerning the Implementation of Electronic Systems and Transactions which states "Every electronic transaction implementation in the public or private spheres that use

electronic systems for public service purposes are required to use reliability certificates and/or electronic certificates."⁵

"Basically, the application of digital signature technology began in 1976, pioneered by Martin Hellman and Whitfield Diffie,⁶ but the Indonesian people only became familiar with it in 2008. The function of cryptographic algorithms and keys for the public was also used as a digital signature in that year."⁷ As a form of protecting public interests from misuse of electronic information, the Indonesian State has a special institution, namely BSSN, based on Presidential Regulation of the Republic of Indonesia Number 28 of 2021 concerning the National Cyber and Crypto Agency. BSSN is a government

Menghadapi Era Digital Bisnis e-Commerce di Indonesia. Bandung: Nusa Media. 2017, hlm. 27.

⁵ Undang-Undang Nomor 19 Tahun 2016 Tentang Perubahan Atas Undang-Undang Nomor 11 Tahun 2008 tentang Informasi dan Transaksi Elektronik (ITE) dan Peraturan Pemerintah Nomor 82 Tahun 2012 Tentang Penyelenggaraan Sistem Dan Transaksi Elektronik.

⁶ W. Diffie and M.E. Hellman, "New Directions in Cryptography," IEEE Trans. Inf. Theory, vol. IT-22, 1976, doi: 10.1007/3-540-44709-1. hlm. 14.

⁷ R. Munir, Kriptografi 2nd Edition. Penerbit Informatika, 2019, hlm. 1.

agency that is under the leadership and direct responsibility of the President.⁸ which has formed a technical implementation unit through the National Cyber and Crypto Agency Regulation Number 2 of 2019 concerning the Organization and Work Procedures of the Electronic Certification Center, namely the National Cyber and Crypto Agency Electronic Certification Center (hereinafter referred to as BSRé) which has the task of carrying out the provision of publishing and management services Electronic certification is a provision made by the government to implement National Security security strategies in the cyber world, including building a cyber security culture.

As one of the Electronic Certification Organizers in Indonesia, BSRé has the main task of providing electronic certificate issuance and management services to guarantee security, especially in the aspects of integrity, authenticity and anti-

repudiation in electronic documents and/or electronic systems. It's just that BSRé as a government agency that implements electronic certification services has not been able to reach these services to the general public. Meanwhile, it is the right of the Indonesian people to obtain electronic data security services from all types of interference as a result of misuse of Electronic Information and Electronic Transactions. Thus, a special study in the form of research is needed to review a problem regarding electronic certificate services provided by BSRé for the general public.

In the framework of administering the State which has the responsibility to protect all Indonesian people and improve general welfare through the implementation, issuance and management of electronic certificates by BSRé in line with national ideals, namely to provide security guarantees, especially in the aspects of integrity, authenticity and anti-repudiation of documents. electronics for all Indonesian people. Based on the description above, we will then discuss

⁸ Peraturan Presiden Republik Indonesia Nomor 28 Tahun 2021 tentang Badan Siber dan Sandi Negara.

and analyze what are the obstacles for BSRé as an agency providing electronic certificate management services which cannot provide services in general. Then, does BSRE's authority to provide general electronic certificate services to the public conflict with statutory regulations?

II. RESEARCH METHODS

This research uses a preparation method that is based on a normative legal research approach. Preparation of the establishment of electronic certificate services to the public in general through the concept of electronic certification. This research was carried out by literature study through data analysis, both primary, secondary and complementary data, namely tertiary such as language dictionaries and articles and other regulations relating to cyber security involving all parties ranging from stakeholders, the community, and other related parties related to the Electronic Certification Services provided by the National Cyber and Crypto Agency (BSSN) by BSRé. Other

research materials are also obtained from normative analysis sources and input from academic circles, or data obtained from electronic media, then the data is adjusted to the research format in generally.

Review of the legal materials and data that have been obtained is then described using a descriptive analytical method, namely conducting detailed research on concepts, legal principles, legal norms and legal systems related to the preparation of research material or data, then described qualitatively in order to obtain a comprehensive understanding. This research was also then carried out by dogmatically analyzing facts related to aspects of jurisprudence, then explaining them based on existing legal materials, presenting an analysis of the applicable content, systematizing and interpreting the legal phenomena presented and analyzed.⁹

⁹ Meuwissen. D.H.M. Arief Sidharta (penerjemah), *Teori Hukum*. Dalam Pro justicia. Jurnal Hukum UNPAR. Tahun XII. Bandung. No.2. April 1994. hlm. 1.

III. DISCUSSION

1. Electronic Certificate.

A certificate is proof of something that can be utilized. to document a fact, such as proof of having completed or attended a seminar, training, or special education. Furthermore, electronics are tools that are made in terms of electronic principles, an object or entity that operates or is created based on an electronic system. An electronic system is a series of electronic devices and procedures that function to prepare, collect, process, analyze, store, display, announce, transmit, and/or disseminate Electronic Information. Document. Electronic is any Electronic Information that is created, forwarded, sent, received, or stored in analog, digital, electromagnetic, optical, or similar form, Something that can be presented, displayed, and/or heard via a computer or Electronic System, including but not limited to on text, sounds, images, maps, designs, photographs, or similar elements, including letters, signs, numbers, access codes, symbols, or perforations that have meaning or meaning, and can be

understood by individuals who have the ability to understand them. In general, electronic certificates are used for security reasons. which will provide many benefits for electronic certificate holders, including minimizing counterfeiting. This is also implemented in the concept that will be provided through regulations for the issuance of electronic certificates by BSR.E.

Actions against the law on the internet or cybercrime have become a very worrying phenomenon, considering that actions such as carding, hacking, fraud, terrorism and the dissemination of destructive information have become an integral part of criminal activity in the digital world. Actions against the law on the internet or cybercrime have become a very worrying phenomenon, considering that actions such as carding, hacking, fraud, terrorism and the dissemination of destructive information have become an integral part of criminal activity in the digital world. Actions that are against the law that occur in the online world can be

interpreted as having something to do with why someone carries out cyber actions. Because it is necessary to understand that the cyber crime carried out can definitely trigger losses for other parties.¹⁰

If you look carefully at Law no. 19 of 2016 Modifications to Law Number 11 of 2008 concerning Information and Electronic Transactions, it is explained that the definition of an electronic certificate is a digital document containing an electronic signature and identity information, which reflects the status of the relevant subject. Issued by the Electronic Certification Organizing Party, electronic certificates are also known as a public key certificate, which is generally referred to as a certificate in another sense, is the basis of a statement where the provisions are unified or bound by the user who has a private password. The individual, device, or service that uses the

certificate. Furthermore, according to the provisions in this Law article 1, Electronic Information refers to one or more collections of electronic data, involving various elements such as text, sound, images, maps, designs, photos, electronic data interchange (EDI), electronic mail (electronic mail), telegram, telex, telecopy, letters, signs, numbers, access codes, symbols, or perforations that have undergone processing. so that everyone can understand it.

2. Electronic Certificate Function.

Electronic certificates function for several purposes, including:

- a. Identity verification, used to ensure the authenticity of the user, be it particular individual or object.
- b. Privacy security, used to ensure that information only can be accessed by authorized parties.) Encryption, functions to secure information by
- c. disguise it, so that unauthorized parties cannot understand it.
- d. Digital signature, provides validity and prevents denial, so that the

¹⁰ Akbar Galih Hariyono, Frans Simangunsong. *"Perlindungan Hukum Korban Pencurian Data Pribadi (Phishing Cybercrime) Dalam Perspektif Kriminologi"*, Bureaucracy Journal: Indonesia Journal of Law and Social-Political Governacep-ISSN: 2797-9598 | e-ISSN: 2777-0621Vol. 3 No. 1 Januari -April 2023. hlm. 1.

party who has given the digital signature cannot dispute it, and ensures the integrity of the message that has been digitally signed.

3. Principles of Electronic Certification Services.

In the principles of electronic certification services, analyzing how BSRé can act as an institution that guarantees data security protection for the general public. BSRé is also an institution that has an important role in the implementation of security systems based on electronic data. The concept of public service can have an impact on the implementation of good governance. The United Nation Development Program (UNDP), explains the following characteristics:

- a. The principle of involving the community, namely considering the need for community involvement in determining decisions by means of deliberation or with representatives as mouthpieces for the community, this involvement is by providing the widest possible opportunity to express ideas or opinions that are solutions related to the need for electronic certification services.
- b. The principle of the rule of law,

the implementation of a legal system that is fair and applied without regard to certain parties. In this principle, the most important thing is to provide opportunities to every citizen. regarding electronic certificate services so that BSRé is not only present for certain groups, but must be present as a representative of the government in ensuring the security of electronic documents.

- c. The principle of openness which is based on freedom to obtain information regarding electronic certificate services by BSRé as a public right which must be implemented transparently.
- d. The fast-dating principle in providing services to the community through state institutions as organs established to serve the community.
- e. The principle of agreement which focuses on the general interests of society as a whole comprehensively on the basis of agreement.
- f. The principle of equality of opportunity. Every society has equal opportunity to obtain equality and justice.
- g. Principle of Effectiveness. Utilization of public resources is carried out efficiently and effectively.
- h. The principle of providing information to the public about every activity carried out.¹¹

¹¹ Sumarto Hetifa Sj, Inovasi, *Partisipasi dan Good Governance*, (Bandung: Yayasan Obor Indonesia, 2003), hlm. 1-2.

Definitions related to the principles of quality governance have been popularized by De Monchy in the Netherlands or another term, namely (Algemene Beginselen Van Behoorlijke Bestuur) which relates to efforts to increase legal protection for the people against the government.¹² This principle consists of the implementation of law, orderly, transparent, balanced, professional, state governance. and can be held accountable which has also been described in Law Number 28 of 1999 concerning the Administration of a State that is Clean and Free from Corruption, Collusion and Nepotism. The implementation of government is based on general principles of administration.

4. Study of the Practices of Providing Electronic Certification Services by the Electronic Certification Center (BSrE).

The demand for a government as a state administrator to run

democratically is the hope of all people wherever they are. For this reason, a democratic government must always emphasize the interests of development in the context of adoption. public decisions that are sensitive to what is voiced by a community. One of the community's hopes in order to fulfill development is to provide services in terms of issuing and managing electronic certification by BSrE.

Provision of electronic certification issuance and management services by BSrE, namely; Firstly, the public's need for electronic certificates is currently not only for government agencies, technological developments and their use are now being used by all levels of society in accordance with the state's objectives which are required to advance general welfare. Ultimately, society is also required to keep up with current developments, including the use of electronic certificates. for his personal interests. It's just that there are still problems with document security if they are made electronically, so this would be more appropriate for

¹² Amrah Muslimin, *Beberapa Asas-Asas Dan Pengertian-Pengertian Pokok Tentang Administrasi dan Hukum Administrasi*, Bandung, Alumni, 1982, hlm. 140.

providing services. Electronic certificates are managed by BSRE to ensure the security of electronic documents belonging to the general public.

Second, the provision of electronic certificate services managed by BSrE must be seen as part of a strategic step to realize National Resilience and Security and is addressed by the formation of BSrE not to make it a closed institution that runs and works only for government agencies but remains within the framework of government governance functions. the good one. BSrE Programs and Plans must be supported to provide electronic certificate services with security functions. electronic documents belonging to the public in general. And BSrE must function as a professional provider of electronic certificate services and always uphold the supremacy of law and human rights, maintain security and create a democratic national life and a prosperous society.

Third, technological developments and various media

advances Today's communications reflect the digital era in society so it is the state's duty to provide guarantees for security aspects, especially electronic-based documents, because based on the reality in society, there are still many forms of violations that occur, such as forgery of documents, misuse of personal data and even acts without the right to distribute data or personal documents belonging to other people. It is clear here that the institutions that organize or are obliged to ensure the confidentiality of electronic documents are still very weak, for this reason it is necessary to improve the security system for electronic documents and certificates.

To provide security for electronic document data, the government and all related devices must be able to provide maximum protection, this is a challenge in this digital era. Because technological development cannot be stopped, innovation is developing in such a way that it is revolutionizing the way humans live. Therefore, the increasingly widespread development of the internet requires regulation and

development of regulations, principles or guidelines that ensure the implementation of human rights guarantees.¹³

According to a report by Frank La Rue, UN Special Rapporteur on Freedom of Expression and Opinion, several problems that have arisen in the use of internet technology that tend to threaten freedom of expression include: leakage of users' personal data, due to the absence of adequate data protection mechanisms.¹⁴ The dynamics of society, which are always difficult to predict, have an impact on the implementation of electronic certification, because this implementation can only be carried out provided that it applies the principles of non-discrimination, has competence and pays attention to diversity.

Based on the latest data in August 2022, as many as 460 Central, Regional and BUMN Government Agencies have collaborated to implement electronic certificates with BSRé. This growth is

exponential, driven by the development of the digital era and technological advances as well as several regulations that mandate the public and private spheres to implement electronic certificates in electronic information exchange or electronic transactions. Related to the realization of the use of electronic certificates for information security needs in government agencies. The recorded number of government agencies that have used the certificate has reached 498 agencies. The benefits of implementing a certificate in a government agency include:

- a. Reduce bureaucratic time so that government governance becomes more effective and efficient;
- b. Prevent unauthorized party access, data falsification and denial;
- c. Signing can be done anywhere.

The reason or cause why BSRé has not been able to provide electronic certificate services in general is because the implementation of BSRé in the field of electronic certification has not been supported by the relevant ministries to

¹³ Sahrul Mauladi, *Awas Hoax! Cerdas Menghadapi Pencemaran Nama Baik, Ujaran Kebencian & Hoax*, PT.Elex Media Komputindo, Jakarta, 2018, hlm. 73.

¹⁴ *Ibid*, hlm. 74.

be able to realize the use of services that can contribute to non-tax state revenues. Then related to legality, BSRE should obtain legality as an electronic system organizing institution.

If the relevant ministry has legality, then all actions taken will definitely have a basis in legal certainty. This is the basis for the legitimacy of an action carried out by the government. By implementing the principle of legality, in the future there will be equal treatment for every human being or community, from the lowest to the upper middle class. With methods like this, the realization of the protection of human rights will be created. In its nature, human rights are rights that are owned and obtained and brought with birth into a society. He is attached to humans as God's creatures and for this reason he must be respected and held in high esteem.¹⁵

5. Study of the Implications of Implementing an Electronic Certification Service System on Aspects of Community Life.

That today's public need for electronic certificates is not only for government agencies, technological developments and their use are now being used by all levels of society in accordance with the state's objectives which are required to advance general welfare. In the end, society is also required to keep up with current developments, including the use of electronic certificates for personal interests. It's just that there are still problems with the security of documents if they are made electronically, so it would be more appropriate if the implementation of electronic certificate services is managed by BSrE to ensure the security of electronic documents belonging to the general public. Apart from that, BSrE can only provide services for applicants from institutions, applicants from non-institutions can only submit to a private electronic certificate provider. One of the uses of Electronic Certification is to reduce risks in the storage process, to ensure authenticity, confidentiality, and to provide convenience in bureaucratic processes.

¹⁵ Dasril Radjab, *Hukum Tata Negara Indonesia*, Jakarta, Rineka Cipta, Jakarta, 2005 hlm. 176.

The implementation of the electronic certification service system has various implications for aspects of people's lives, including ease of access and efficiency. People can easily access electronic certification services from any location with an internet connection, eliminating the need to be physically present at certain offices or institutions. The use of electronic certification can speed up administrative processes, minimize bureaucracy, and reduce the time required to obtain or renew certification. People do not need to spend money on traveling to certain places just to get certification or similar documents, so using electronic certification can reduce administrative costs related to printing, sending and storing physical documents.

The most important thing is a strategy regarding data protection. that a good electronic certification system must guarantee data security. personal information and adopt digital security measures to protect the public's sensitive information such as documents issued through electronic

certification services must have guaranteed integrity, so that the public can trust the validity and authenticity of the document. Implementation of an electronic certification system can encourage innovation in information and communication technology, both in the development of certification platforms and digital authentication methods.

The need to support electronic certification can stimulate the development of applications and systems that can provide added value to society. The public can be more actively involved in the certification process, monitor the status of their applications, and get information more quickly through digital platforms. However, this requires improvement. public understanding of technology and cyber security to ensure the use of electronic certification runs well.

This implication can also minimize paper use, that the adoption of electronic certification services can reduce paper use and the environmental impacts associated with printing documents. Digital processes

have the potential to reduce the carbon footprint resulting from the transportation and use of physical materials. Apart from that, electronic certification also opens up new business opportunities. The emergence of electronic certification services can create business opportunities, especially in the technology and digital services sectors. The implementation of the electronic certification service system has a positive impact on people's lives by increasing efficiency, accessibility and the use of more sophisticated technology. However, it is also necessary to pay attention to aspects of data security and public education to ensure that the use of this technology runs well. The implication of the existence of certificate services by BSRé is to serve only certain groups of people or certain agencies, but rather to society in general based on the principle of equal rights.

It will be very important in the future to do various things in order to support BSRé with all the facilities it must have in terms of administering electronic certification. Loading of

systems to manage registration information for electronic certificate owners, management and creation of electronic signatures, protection systems in terms of ensuring the security of facilities and equipment in administering electronic certification and others.

6. Analyze.

a. Obstacles for BSRé in Providing Electronic Certificate Services.

In achieving the national security strategy from cyber threats, falsification of data and signatures, guaranteeing the authenticity of electronically signed certificates, it is appropriate for the state to provide guarantees through BSSN which has an institution under it, namely BSRé, to provide electronic certificate services for the general public, only BSRé is limited in providing these services only for employees of government agencies, while for the general public who need data security guarantees this cannot be implemented by BSRé, this is certainly an obstacle because it does not have legal certainty based on the authority of the laws and regulations currently in

force, for That is, if the national security strategy in the cyber sector is to be achieved, the state needs to provide legal certainty by granting regulatory authority to BSrE to be able to provide services. in general.

b. BSrE's Authority to Provide Electronic Certificate Services in General.

That so far there are no regulations that expressly state the prohibition on BSrE providing electronic certificates for the general public, only separating the services that BSrE can provide only for government agencies, but for non-government agencies using electronic certificate services from private parties, so it is not there is a guarantee of data security for the general public. The authority to provide full electronic certificate services should be given to BSrE if data security for every citizen is to be fully guaranteed as a form of national strategy considering that the need for future data developments will be based on electronic data, but legal instruments have not yet prepared a

data security strategy in place. artificial intelligence.

IV. CLOSING

1. Conclusion.

That is an obstacle for BSrE as the agency providing electronic certificate management services, which is not being able to provide services in general because it is still separated by agency and non-agency provisions which limit the scope of BSrE in providing certificate services electronics for the public/general public. Based on Article 27 paragraph 2 which limits the scope of BSrE in providing electronic certificate services to the public/general public. Based on Article 27 paragraph 2 of the Regulation of the Minister of Communication and Information of the Republic of Indonesia Number 11 of 2022 concerning Governance for the Implementation of Electronic Certification, it is stated that the Application as intended in paragraph (1) is submitted to PSrE Indonesia with the following conditions: a. Indonesian citizen applicants who are employees

of agencies and/or agencies submit applications to the PSrE of the Agency; or b. applicants other than those referred to in letter a submit an application to a non-Agency PSrE.

BSrE's plan to provide electronic certificate services in general does not conflict with Law number 19 of 2016 concerning Amendments to Law Number 11 of 2008 concerning Electronic Information and Transactions as well as Republic Government Regulation no. Number 71 of 2019 concerning Implementation of Electronic Systems and Transactions. It's just that in the regulation of the Minister of Communication and Information of the Republic of Indonesia Number 11 of 2022 concerning the Implementation of Electronic Certification, it limits BSrE to providing services to the public/general public. Meanwhile, electronic certificate services based on the security of personal data and documents are the right of every citizen. These restrictions separate agencies from non-agencies. In law there is a principle that states equality

before the law. The principle of Equality Before the Law is found in almost all state constitutions. This is a norm that protects the human rights of citizens. Equality before the law means that every citizen must be treated fairly by law enforcement officials and the government. So every law enforcement officer is constitutionally bound by the value of justice which must be realized in the practice of electronic certificate services based on the security of personal data and documents in line with technological advances.

Regulatory problems or challenges in new technological advances have several aspects as follows:

- a. Incompatibility of existing regulations: New technologies often emerge at a rate that far exceeds the government's ability to regulate them. Existing regulations may not take into account the unique aspects of the new technology, and this can create confusing legal loopholes and limit technological progress.
- b. Data protection and privacy: New technologies, such as artificial intelligence (AI),. Adequate regulations are needed to protect personal data and maintain user privacy. Challenges that arise include establishing data security

- standards, user consent, data deletion, and limitations on unauthorized use of data.
- c. Cyber security: New technological advances also bring increasingly complex cyber security threats. The government needs to regulate this sector by developing a regulatory framework that promotes it. strong cyber security and address ever-evolving cyber attacks.
- d. Cross-border regulation: New technologies are often not bound by geographic boundaries and operate at a global level. Regulatory challenges arise when new technology companies and services must comply with laws across different jurisdictions. Coordination between countries and harmonization of international regulations are important to overcome this challenge.
- e. Liability and ethics: The development of new technologies such as AI and robotics brings questions about responsibility and ethics of use. Regulations need to consider these aspects, including fair use of data, accountable decisions by automated systems, and questions around artificial intelligence that can go beyond human control.
- f. Speed of regulation: Often, regulation fails to keep up with the pace of new technological innovation. A slow regulatory process can limit industry growth and hinder progress. Governments need to adopt a

responsive and flexible approach to regulating the new technology sector.

2. Suggestions

In this case, the state should be more alert and review the document security aspect of every citizen, especially civil society, who need guarantees of the security of electronic documents and certificates because electronic certificate services by BSrE are a public right that must be administered fairly and in a balanced manner, especially electronic certification services organized by BSrE, not only the State Civil Apparatus, the Indonesian National Army, and the National Police of the Republic of Indonesia can apply for services from Institutional Electronic Certification Organizers (BSrE).

The need for harmonization of regulations related to the implementation of electronic certificate services between Law number 19 of 2016 concerning Amendments to Law Number 11 of 2008 concerning Electronic Information and Transactions and Republic of Indonesia Government

Regulation no. Number 71 of 2019 concerning Implementation of Electronic Systems and Transactions regarding the Regulation of the Minister of Communication and Information of the Republic of Indonesia No. 11 of 2022 concerning Implementation of Electronic Certification. Based on the results of the analysis, there are provisions that give BSRé authority to organize electronic systems and transactions, but in article 27 of the Regulation of the Minister of Communication and Information of the Republic of Indonesia Number 11 of 2022 concerning the Implementation of Electronic Certification. Separating services for applicants from agencies and non-institutions, which are served by BSRé as PSrE Agencies so that non-institution applicants cannot apply for electronic certificate services to BSRé. On this basis, it is necessary to study BSRé's authority as the organizer of electronic certificates for the public sphere, both agency and non-agency applicants, so that BSSN's strategic target of providing reliable,

professional and trustworthy cyber security can be felt by all Indonesian people.

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