

Electronic Criminal Justice in Indonesia: Challenges and the Future Measures

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Article Info

Submitted: Oct 7, 2024

Revised: Jan 17, 2025

Accepted: Jan 31, 2025

Keywords:

E-Court;
Criminal Justice;
Access to Justice.

How to cite [Chicago Manual of Style 17th edition (full note)]:

Aristo Evandy A. Barlian, Atip Latipulhayat, Elis Rusmiati, Widati Wulandari, and Ahmad Novindri Aji Sukma, "Electronic Criminal Justice in Indonesia: Challenges and the Future Measures" *Jambura Law Review* 7, no. 1 (2025): 243–274.

Abstract

Electronic trials represent a radical innovation within the judicial system, viewed as a means to simplify and facilitate access to justice for those seeking it. However, electronic criminal trials continue to present both legal and technical challenges. This writing aims to explore the development of electronic criminal trials in Indonesia and compare them with several other countries. It also outlines the issues and challenges involved, while proposing future measures to ensure electronic trials function as intended. The approach used in this paper is based on statutory and comparative methods. The findings indicate that radical innovations, particularly in electronic trials, highlight the need for sustainability, but also reveal legal and technical challenges. The legal aspect concerns the level of regulation within the Supreme Court Regulations, which ideally should be elevated to the level of the Criminal Procedure Code. There is also ambiguity regarding the criteria for implementing electronic criminal trials. Compared to the United States, where clear criteria are established, Indonesia lacks such clarity. On the technical aspect, challenges such as unequal access to the internet, network disparities, and limited human resources need to be addressed. For the future success of electronic criminal trials, it is necessary to establish clear regulations at the level of the Criminal Procedure Code; provide equal network access to ensure electronic trials can be conducted in all courts across Indonesia; improve the quality of electronic trial services, especially for vulnerable groups (such as the elderly and people with disabilities); and enhance data security systems to protect personal information, as demonstrated by Kyrgyzstan.

1. Introduction

Modernization in the legal field through the use of information technology advancements has become a popular choice for many countries.¹ In civil² and criminal law, the adoption of electronic trials has also been widely practiced in countries such as Australia,³ the United Kingdom,⁴ Nigeria,⁵ Malaysia,⁶ and many others. The application of technology within judicial settings is not a new development, though in many countries, its widespread adoption in the judiciary surged during the Covid-19 pandemic.⁷ Initially, technology was mainly applied for administrative purposes, particularly for electronic filing in courts.⁸

However, over time, the digital transformation within the judiciary has seen significant innovations. The Covid-19 era shook the world, causing stagnation in the judiciary, with trial delays becoming inevitable—a situation that greatly impacted access to justice. In this context, rapid and radical transformation was necessary to keep judicial activities running, leading to the shift from conventional (physical) courtrooms to

¹ Sarah Moore, “Digital Government, Public Participation and Service Transformation: The Impact of Virtual Courts,” *Policy & Politics* 47, no. 3 (July 2019): 495–509, <https://doi.org/10.1332/030557319X15586039367509>.

² Cut Sarah Dwindahany and Subagio Efendi, “Should Excessive Marketing Expenses Be Remunerated? Lessons from Indonesia’s Tax Court Decisions,” *Jurisdictie: Jurnal Hukum Dan Syariah* 15, no. 1 (July 9, 2024): 1–33, <https://doi.org/10.18860/j.v15i1.26915>.

³ Divashna Govender, *Covid-19 and Fair Trial Principles in Australia Criminal Proceedings* (Jakarta: Institute For Criminal Justice Reform, 2021).

⁴ Felicity Gerry, Julia Muraszekiewicz, and Olivia Iannelli, “The Drive for Virtual (Online) Courts and the Failure to Consider Obligations to Combat Human Trafficking – a Short Note of Concern on Identification, Protection and Privacy of Victims,” *Computer Law & Security Review* 34, no. 4 (August 2018): 912–19, <https://doi.org/10.1016/j.clsr.2018.06.002>.

⁵ Abimbola Davies, Olubukola Olugasa, and Dorcas A. Odunaike, “Experimental Trials of the Virtual Court Proceedings in Nigeria: An Empirical Perspective,” *International Journal for Court Administration* 15, no. 2 (August 20, 2024): 4, <https://doi.org/10.36745/ijca.550>.

⁶ Manique Cooray, Rebecca Mathan, and Tay Soon Yeh, “Exploring the Potential Use of Holographic Technology Through Remote Communication Technology in the Malaysian Courts: A Legal Perspective?,” *International Journal for Court Administration* 14, no. 3 (December 11, 2023): 1, <https://doi.org/10.36745/ijca.521>.

⁷ Olexander P. Svitlychnyy et al., “Electronic Justice as a Mechanism for Ensuring the Right of Access to Justice in a Pandemic: The Experience of Ukraine and the Eu,” *International Review of Law, Computers & Technology* 37, no. 3 (September 2, 2023): 325–40, <https://doi.org/10.1080/13600869.2023.2221820>.

⁸ Nurul Aiqa Mohamad Zain et al., “Developing Legal Framework for E-Court in Judicial Delivery,” *International Journal of Engineering & Technology* 7, no. 3.7 (July 4, 2018): 202, <https://doi.org/10.14419/ijet.v7i3.7.16351>.

virtual spaces.⁹

The application of technology in judicial settings did not only emerge during the COVID-19 pandemic but has been present for some time. However, courts had previously focused primarily on administrative services.¹⁰ In his research, Reiling Dory noted that the adoption of technology or digitalization in the judiciary aimed to address three key issues, particularly in Europe and the United States: case delays, lack of access, and corruption.¹¹ Kenneth further highlighted various forms of electronic court services designed to tackle these issues and complaints, including electronic case filing, payment of fines and court fees, and providing case information and documents to the public.¹²

In the context of Indonesia, the radical transformation in the use of technology within the judiciary also occurred during the COVID-19 pandemic, which initially caused a complete "shutdown" of court activities when the virus first entered the country.¹³ This paralysis led to delays in court hearings, further increasing the backlog of cases in the judicial system.¹⁴ In response to this situation, all judicial institutions transitioned their court proceedings from conventional physical courtrooms to virtual spaces.

After the COVID-19 pandemic, the use of virtual court hearings has continued as a viable option in judicial institutions, including for criminal cases. The issuance of

⁹ Meredith Rossner, David Tait, and Martha McCurdy, "Justice Reimagined: Challenges and Opportunities with Implementing Virtual Courts," *Current Issues in Criminal Justice* 33, no. 1 (January 2, 2021): 94–110, <https://doi.org/10.1080/10345329.2020.1859968>.

¹⁰ Rahdian Ade Putra Bone and Chami Yassine, "Judicial and Administrative Approaches to Civil Service Dispute Resolution: A Comparative Study between Indonesia, India, and Egypt," *International Journal of Constitutional and Administrative Law*, no. 1 (2025): 21–41.

¹¹ Dory Reiling, *Technology for Justice: How Information Technology Can Support Judicial Reform, Law, Governance, and Development*. Dissertations (Amsterdam: Leiden University Press, 2009).

¹² Kenneth J. Peak and Tamara Madensen, *Introduction to Criminal Justice: Practice and Process*, Third edition (Thousand Oaks, California: SAGE Publications, Inc., 2019).

¹³ Arief Hidayat, "Persidangan Daring Mahkamah Konstitusi," in *Transformasi Hukum Dan Teknologi Dalam Penguatan Ketahanan Negara Di Era New Normal* (National Seminar and Call for Paper, Collaboration between the Faculty of Law, East Java Veteran Development University and the Faculty of Law, Trunojoyo University, East Java: Faculty of Law, East Java Veteran Development University and the Faculty of Law, Trunojoyo University, 2020).

¹⁴ Mahkamah Agung, "Bagaimana Pengadilan Menghadapi Pandemi Covid19? Virtual Discussion by the Directorate General of Badilag and the Family Court of Australia," April 17, 2020, <https://badilag.mahkamahagung.go.id/seputar-ditjen-badilag/seputar-ditjen-badilag/bagaimana-pengadilan-menghadapi-pandemi-covid19-diskusi-virtual-ditjen-badilag-dan-family-court-of-australia>.

Supreme Court Regulation No. 4 of 2020 on the Administration and Electronic Trials of Criminal Cases was not merely a response to the challenging situation brought by the pandemic, which forced courts to innovate rapidly by conducting virtual trials. Over time, the choice to continue implementing electronic trials after the pandemic has led the Supreme Court to refine its regulations further. This is reflected in the issuance of Supreme Court Regulation No. 8 of 2022 on amendment to Supreme Court Regulation No. 4 of 2020 on the Administration and Electronic Trials of Criminal Cases.

The design for electronic trials in the regulation outlines four scenarios: 1) The Judge/Panel of Judges, Registrar/Deputy Registrar, and Prosecutor hold the trial in the courtroom, while the Defendant participates remotely from the detention center, either accompanied or unaccompanied by legal counsel; 2) The Judge/Panel of Judges and Deputy Registrar hold the trial in the courtroom, while the Prosecutor participates from the Prosecutor's office, and the Defendant participates from the detention center, with or without legal counsel; 3) If the detention center lacks the necessary facilities for electronic participation, the Defendant, with or without legal counsel, participates in the trial from the Prosecutor's office; 4) A Defendant who is not in custody can participate in the trial either in the courtroom or from the Prosecutor's office, with or without legal counsel, or from another location inside or outside the court's jurisdiction as approved by the Judge/Panel of Judges through an official decision.¹⁵

Although the Supreme Court has issued regulations on electronic criminal trials as a tool for providing access to justice,¹⁶ this method still faces several challenges, both legal and technical. One major issue is that the regulations, which are set at the level of Supreme Court rulings, have weaker legal standing compared to laws. Additionally, concerns regarding personal data protection, supporting infrastructure, and other technical issues continue to affect the implementation of electronic trials in Indonesia.¹⁷

¹⁵ Article 3, Peraturan Mahkamah Agung Nomor 4 Tahun 2020 Tentang Administrasi Dan Persidangan Perkara Pidana Di Pengadilan Secara Elektronik.

¹⁶ William Sibarani, "Modern Justice: Indonesia's Supreme Court's Challenges to Uphold Fair Trial Principles Through Digitalization," *Brawijaya Law Journal* 10, no. 1 (April 30, 2023): 106–21, <https://doi.org/10.21776/ub.blj.2023.010.01.07>.

¹⁷ Nurjihad Nurjihad and Ariyanto Ariyanto, "Electronic Trial At The Supreme Court: Needs, Challenges And Arrangement," *Jurnal Jurisprudence* 11, no. 2 (March 18, 2022): 170–86, <https://doi.org/10.23917/jurisprudence.v11i2.16348>.

These challenges must be effectively managed, especially given the future outlook, where the judiciary's operations will increasingly depend on technology, including electronic trials. Susskind has noted that in many countries, judicial systems are already heavily influenced by Artificial Intelligence and virtual reality.¹⁸ Addressing these issues is crucial to ensuring that electronic tools in the judiciary bridge the gap between seekers of justice and the courts. Otherwise, these tools could inadvertently create new forms of injustice, turning what was intended to provide efficient access to justice into a source of further inequality.¹⁹

2. Problem Statement

This article aims to explore the implementation of electronic trials in Indonesia, along with the challenges faced and suggestions for improvements in the future.

3. Methods

This study employs a normative juridical approach with a comparative legal method.²⁰ The normative juridical approach is applied through a statutory approach, focusing specifically on the legal aspects of electronic criminal trials. Meanwhile, the comparative approach is used to examine how electronic criminal trials are regulated and implemented in other jurisdictions.

The legal materials utilized in this research consist of primary legal sources and secondary legal sources.²¹ The primary legal sources include statutory regulations governing electronic criminal procedures, court decisions, and relevant legal doctrines from various jurisdictions. Meanwhile, the secondary legal sources comprise academic articles, books, research reports, and other scholarly analyses that provide interpretative insights into the primary legal materials.

The data obtained from these legal materials are systematically processed and analyzed using a qualitative legal analysis method. The analysis involves interpretation

¹⁸ Richard E. Susskind, *Online Courts and the Future of Justice*, First Edition (Oxford: Oxford University Press, 2019).

¹⁹ David Cowan, "Richard Susskind, *Online Courts and the Future of Justice* (Oxford: Oxford University Press, 2019)," *Canadian Journal of Law and Technology* 18, no. 2 (2020): 303–8.

²⁰ Suratman and H. Philips Dillah, *Metode Penelitian Hukum* (Bandung: Alfabeta, 2013).

²¹ Nurul Qamar Farah Syah Rezah, *Metode Penelitian Hukum Doktrinal Dan Non-Doktrinal* (Makassar: Social Politik Genius, 2020).

and synthesis of legal norms, doctrines, and case law to construct a coherent understanding of electronic criminal trials. Furthermore, in the comparative analysis, similarities and differences between the legal frameworks of different jurisdictions are identified, with a focus on best practices and challenges in implementing electronic criminal trials. The results are then presented in a prescriptive manner, offering recommendations for legal development in this field.²²

4. Challenges, and Future Prospects of Electronic Criminal Trials in Indonesia

4.1. Paradigm of Electronic Trials in Indonesia

As a judicial authority, the Supreme Court of Indonesia is committed to modernizing the judiciary, keeping pace with countries that have successfully implemented technological advancements at an exponential and radical rate.²³ The Supreme Court's 2010-2035 Blueprint outlines a judicial reform project, one of which focuses on modernizing the court system.²⁴

In the second Supreme Court Blueprint (2010-2035), the vision is expressed as “Establishing a Noble Indonesian Judiciary.” This vision is ideally embodied through efforts outlined in the blueprint, including the creation of a modern judicial body based on integrated information technology. The Supreme Court has already begun taking steps toward building a more modern judiciary, steering it toward electronic and technology-based solutions.²⁵

The efforts to reform the judiciary aim to provide professional, high-quality, effective, and efficient services to seekers of justice. This initiative is marked by the introduction of e-litigation or electronic trials, signaling a new era of modern judiciary in Indonesia. Through this service, the public and legal representatives no longer need to physically attend court to file their cases and can even participate in trials virtually.

²² Suratman and Dillah, *Metode Penelitian Hukum*.

²³ Marcelo Corrales Compagnucci, Mark Fenwick, and Nikolaus Forgó, eds., *Robotics, AI and the Future of Law*, Perspectives in Law, Business and Innovation (Singapore: Springer, 2018).

²⁴ Mahkamah Agung, *Cetak Biru Pembaruan Peradilan* (Jakarta: Mahkamah Agung Republik Indonesia, 2010); Dewi Asimah, “Electronic Litigation as a Mean of Effort to Modernized Litigation in the New Normal Era,” *Jurnal Hukum Peratun* 4, no. 1 (March 26, 2022): 31-44, <https://doi.org/10.25216/peratun.412021.31-44>.

²⁵ *Cetak Biru Pembaruan Peradilan*.

To legitimize the implementation of modernization of the judiciary, the Supreme Court issued Regulation No. 3 of 2018 on Electronic Case Administration in Court. This regulation has undergone periodic updates, as evidenced by the issuance of Regulation No. 1 of 2019 on Electronic Court Administration. Shortly after the publication of these regulations in 2019, COVID-19 began to spread in Indonesia in early 2020, making the option of conducting court activities electronically the only viable choice for judicial institutions to continue their operations.²⁶ At that time, the paradigm of court administration shifted from merely facilitating access to justice for seekers to also considering the safety of the public and law enforcement officials while striving to provide professional, high-quality, effective, and efficient services.²⁷

The continued implementation of electronic criminal trials has become a necessity, highlighting the urgency for its sustainability.²⁸ Electronic trials serve as a convergence point that has proven effective in bridging unprecedented situations. This method allows courts to conduct hearings during disasters, pandemics, and other circumstances where traditional trials are not feasible.

The lawmakers of Law No. 8 of 1981 on Criminal Procedure only provided for conventional trial mechanisms,²⁹ requiring the physical presence of defendants and witnesses in the courtroom, as stipulated in Articles 154 and 160, Paragraph (1), Letter a. This interpretation mandates physical attendance in the courthouse. The regulations do not acknowledge electronic trials at all. However, in situations faced during the pandemic and other circumstances that prevent in-person attendance in the courtroom, the Supreme Court has expanded the interpretation of conducting virtual

²⁶ Mulyani Zulaeha, "E-Courts in Indonesia: Exploring the Opportunities and Challenges for Justice and Advancement to Judicial Efficiency," *International Journal of Criminal Justice Sciences* 18, no. 2 (2023): 183–94; Haris Dwi Saputro and Syamsul Fatoni, "Persidangan Perkara Pidana Secara Elektronik Dalam Sistem Peradilan Pidana Di Indonesia Di Masa Pandemi Covid-19," *INICIO LEGIS* 3, no. 2 (November 6, 2022): 142–61, <https://doi.org/10.21107/il.v3i2.16902>.

²⁷ Sibarani, "Modern Justice"; N. A. S Yusuf, "Implementation of the E-Litigation System in Civil Cases in the COVID-19 Pandemic Situation," *Disruption Law Review* 1, no. 1 (2023): 64–77.

²⁸ Fira Mubayyinah Mubayyinah, "Sustainability of Virtual Criminal Court in the Perspective of Ius Constituendum," *Al Hakam The Journal of Islamic Family Law and Gender Issues* 1, no. 1 (April 25, 2021): 88–103, <https://doi.org/10.35896/alhakam.v1i1.194>.

²⁹ Neisa Angrum Adisti, Nashriana, and Isma Nurillah, "Persidangan Perkara Pidana Di Pengadilan Secara Elektronik Pada Masa Pandemi Covid-19 Ditinjau Dari Asas Peradilan Pidana," *Simbur Cahaya* 28, no. 1 (2021).

trials.

The transformation of this paradigm, particularly concerning the provisions of the Criminal Procedure Code that emphasize the necessity of physical presence in the courtroom, has been reinterpreted by the Supreme Court through various regulations it has issued, leading to debate. However, despite the surfaced discussions, the ongoing implementation of electronic trials in criminal cases—aimed at facilitating access to justice for seekers and striving to provide a criminal justice process that is simple, swift, and cost-effective—remains an undeniable fact.

4.2. Electronic Trials in Criminal Cases and Their Comparison with Several Countries

Empirically, long before the issuance of Supreme Court Regulations legitimizing electronic trials in criminal cases, the use of technology in the criminal trial process had already been attempted in Indonesia. A notable example is Supreme Court Decision Number 112 PK/Pid/2006, which acknowledged the use of teleconferencing for witness testimony in several cases. However, in the civil law system adopted by Indonesia, jurisprudence is merely persuasive and not binding, which means judges are not obligated to follow precedents. Furthermore, evidence obtained through teleconference has not been explicitly recognized as valid under Article 184 of the Criminal Procedure Code (KUHAP), making its legal standing uncertain despite its increasing application in judicial practice.

Several other cases that utilized teleconferencing during their trial processes prior to the issuance of the Supreme Court Regulation on electronic trials are as follows:

Table 1. *Electronic Evidence of Criminal Trials*

No	Adjudicate	Key Witness	Teleconference	Type of Case
1	Corruption case of misappropriation of non-budgetary Bulog funds in the name of defendant Akbar Tandjung at the South Jakarta District Court.	B.J. Habibie	Via Conference from Hamburg, Germany	Criminal

2	The case of the alleged Bali Bombing terrorism involving the defendant Abu Bakar Baasyir at the South Jakarta District Court.	<ol style="list-style-type: none"> 1. Faiz Abu Bakar Bafana 2. Hasyim bin Abbas alias Osman alias Rudi 3. Ja'far bin Mistoki alias Saad alias Badar 4. Ahmad Sajuli bin Abd Rahman alias Fadlul Rahman alias Fadlul alias Uyong alias Mat 5. Agung Biyadi alias Husain 6. Muhammad Faiq bin Hafidh, dan 7. Ferial Muchlis bin Abdul Halim. 	Via Conference from Malaysia and Singapura	Criminal
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The first case involved a dispute regarding the misappropriation of non-budgetary funds at Bulog on June 2, 2002. Two ministers from the Habibie era, Akbar Tandjung, the former State Secretary, and Rahardi Rammelan, the former Minister of Trade, who also served as the (Temporary Acting Head of Logistics Bureau (Bulog), were defendants in this corruption case. During this trial, B.J. Habibie provided testimony as a witness from Germany via teleconference. The judges deemed the use of teleconference crucial, as Habibie was a key witness regarding the misuse of Bulog funds during his administration. The judges overseeing and adjudicating the case, as stated in their ruling numbered 354/Pid.B/2002/PN. Jakarta Selatan, emphasized the necessity of examining B.J. Habibie to uncover the material truth. However, due to issues concerning the witness's presence in Hamburg, Germany, where he was accompanying his wife for medical treatment, the solution was to utilize teleconference for his testimony.³⁰

The second case involved allegations of terrorism against defendant Abu Bakar Baasyir, as outlined in the Supreme Court's Decree No. 008/KMA/SK/I/2011. In this instance, the prosecution presented 32 witnesses, of whom 7 provided testimony via teleconference. The witnesses included Faiz Abu Bakar Bafana, Hasyim bin Abbas (also known as Osman or Rudi), Ja'far bin Mistoki (alias Saad or Badar), Ahmad Sajuli bin Abd Rahman (alias Fadlul Rahman, Fadlul, Uyong, or Mat), Agung Biyadi (alias Husain), Muhammad Faiq bin Hafidh, and Ferial Muchlis bin Abdul Halim. Among the seven

³⁰ Liputan 6, "Besok Habibie Bersaksi Lewat <i>Video Teleconference," *Liputan6.Com*, 2002.

witnesses who testified via teleconference, only Faiz Abu Bakar Bafana had not been previously questioned during the investigation.³¹

In this case, the request for the seven witnesses to provide their testimony via teleconference was made by the Public Prosecutor. This was necessary because, at the start of the trial, difficulties arose as the witnesses were detained by the governments of Malaysia and Singapore, preventing them from appearing in court. The testimonies of the seven witnesses were conducted from locations in Malaysia and Singapore. Consequently, their statements were delivered through teleconference with the assistance of the Indonesian Embassy (KBRI), making it clear that the locations were not within the jurisdiction of Indonesia.

In both cases, the judge in his legal considerations stated that the court decision stated that:³²

- 1) First, the use of teleconferencing technology as a solution for court proceedings, particularly for examining witnesses who cannot appear in court, is crucial for obtaining material truth. Therefore, its existence does not contradict the Criminal Procedure Code (KUHAP).
- 2) Second, the utilization of advancements in electronic communication technology for providing testimony via teleconference is intended to meet the demands of legal proceedings when obstacles arise, as experienced by B.J. Habibie as witness at that time. It is expected that this approach by the judges will receive positive responses from both the executive and legislative branches in the context of refining criminal procedural law in the future.
- 3) Third, the examination of witnesses via teleconference aligns with the role and responsibilities of judges in uncovering and discovering the law (*rechtsvinding*).³³ At the same time, it serves as a breakthrough in procedural law by facilitating the ability to hear witness testimony even when they are

³¹ Institute for Criminal Justice Reform, *Pemberian Keterangan Saksi Lewat Videoconference Dalam Rancangan KUHAP* (Jakarta: Institute for Criminal Justice Reform, 2015), 3–4.

³² *Pemberian Keterangan Saksi Lewat Videoconference Dalam Rancangan KUHAP*.

³³ Achmad Rifai, *Penemuan Hukum Oleh Hakim: Dalam Perspektif Hukum Progresif*, Cet. 1 (Jakarta: Sinar Grafika, 2010), 26.

located in Europe, allowing it to be heard and followed directly and transparently by the public in Indonesia. Therefore, the use of teleconferencing technology is deemed valid and possesses evidentiary value.

- 4) Fourth, even though during the examination the witness was in Hamburg, precisely at the Consulate General of the Republic of Indonesia, while the trial took place at the South Jakarta District Court, this arrangement still constitutes a unified part of the trial itself, as the witness took an oath guided by the presiding judge during the proceedings.
- 5) Fifth, the trial records demonstrate that the process of examining witnesses via video teleconference was conducted effectively, with interactions occurring between the panel of judges and the witnesses, as well as between the public prosecutor, legal counsel, and the defendant with the witnesses, as thoroughly documented in the trial minutes and the teleconference recording itself.

It can be viewed from the two cases above that this procedure has been carried out in accordance with specific criminal regulations (*lex specialis*). Even before the pandemic and the era of modernization, witness testimonies in criminal cases had been conducted electronically; therefore, electronic trials for administration and evidentiary purposes should also be established in future procedural regulations under the law or the Criminal Procedure Code (KUHP).³⁴

Indeed, Article 160, paragraph (1), letter (a) of the Criminal Procedure Code (KUHP) states that “witnesses are called into the courtroom one by one in the order deemed most appropriate by the presiding judge after hearing the opinions of the public prosecutor, the defendant, or legal counsel.” This clearly contradicts the current practice of electronic criminal trials. However, to uncover evidence and achieve the fairest justice possible, this provision can still be applied in accordance with the jurisprudence of the Supreme Court. For comparison, the Constitutional Court has issued Regulation Number 18 of 2009 on Guidelines for Electronic Filings and Remote Trial Examinations (Video Conference) Article 16. It states that “the Court conducts

³⁴ Lilik Mulyadi, *Hukum Acara Pidana: Suatu Tinjauan Khusus Terhadap Surat Dakwaan, Eksepsi, Dan Putusan Peradilan*, Cet. 1 (Bandung: Citra Aditya Bakti, 1996).

hearings via remote trials based on requests from the petitioner and/or the respondent or their representatives.”³⁵

Globally, several countries have successfully implemented electronic judicial systems in criminal trials. Kyrgyzstan stands out as a country that has developed a comprehensive e-justice system.³⁶ The E-Sud (E-Court) system in Kyrgyzstan facilitates digitalized judicial processes, including case registration, document exchanges, and electronic hearings. This system was introduced as part of judicial reforms to enhance transparency, efficiency, and accessibility. It has been particularly effective in cases where defendants are located abroad or placed under house arrest. To ensure the authenticity of electronic participation, Kyrgyzstan employs facial recognition technology and digital signatures for defendants, witnesses, and legal representatives. The success of this system demonstrates how a well-structured electronic judicial framework can improve the administration of justice while maintaining procedural integrity.³⁷

In addition to Kyrgyzstan, Singapore and the United Kingdom have also adopted structured electronic criminal trial systems. In Singapore, the Evidence Act (Section 97) explicitly recognizes the validity of electronic evidence, including audio and video recordings. Singapore’s judiciary operates through systems such as e-Litigation and the Integrated Case Management System (ICMS), allowing for the digital filing of cases, submission of documents, and virtual hearings. Furthermore, the SingPass national authentication system verifies the identities of court participants, ensuring secure and credible electronic proceedings. By integrating these technological advancements, Singapore has successfully established an efficient and legally sound framework for electronic criminal trials.³⁸

³⁵ Hidayat, “Persidangan Daring Mahkamah Konstitusi.”

³⁶ Anis Widyawati et al., “Supervision in Integrated Justice: Legal Reform and Constructive Enforcement in the Criminal Justice System,” *Journal of Law and Legal Reform* 5, no. 2 (2024): 433–58; Muh. Firmansyah Isa, “Causes and Efforts to Counter a Crime,” *Estudiante Law Journal* 4, no. 2 (October 15, 2022): 788–800, <https://doi.org/10.33756/eslaj.v4i2.18273>.

³⁷ Aliia Maralbaeva, “Evolution of E-Justice Platforms: From ICT in Courts Towards ‘Digital Justice’ Portal in Kyrgyzstan,” *International Journal for Court Administration* 15, no. 1 (June 10, 2024): 6, <https://doi.org/10.36745/ijca.582>.

³⁸ Mahkamah Agung, “Majalah Mahkamah Agung, Media Komunikasi Mahkamah Agung Republik Indonesia,” *Majalah Mahkamah Agung*, 2018, 33–34.

The United Kingdom has established a legal framework supporting the implementation of electronic trials in criminal cases, primarily through the Criminal Justice Act 1988 (Section 32) and the Rome Statute (Article 68(2)). These provisions facilitate remote witness testimony, enabling witnesses residing outside the UK to provide evidence via video link. Additionally, the admissibility of electronic records, such as digital recordings and computer-generated evidence, further reinforces the legal validity of electronically conducted proceedings. Importantly, teleconferencing in the UK also serves a protective function, particularly for vulnerable witnesses, including children and victims of crime, by allowing them to provide testimony remotely without direct confrontation. These regulatory advancements demonstrate that electronic trials can be integrated into the legal system while maintaining fundamental principles of fairness, transparency, and the protection of defendants' rights.³⁹

The Rome Statute further substantiates the legal basis for video conferencing as a means of providing evidence in criminal proceedings. Article 68(2) emphasizes the protection of individuals involved in criminal cases, including witnesses and victims, by permitting exceptions to the principle of public hearings. Specifically, it allows for certain proceedings to be held in camera or for evidence to be submitted through electronic means to ensure the security and well-being of those involved. Additionally, Article 69(2) stipulates that oral testimonies (*viva voce*) or recorded witness statements may be presented via video or audio technology, provided they adhere to the procedural and evidentiary standards set forth in the Rome Statute. These provisions underscore the growing recognition of digital tools in legal proceedings, reflecting a shift toward greater judicial flexibility in response to contemporary challenges.⁴⁰

Despite these developments, neither the UK nor Singapore has enacted specific legislation governing electronic criminal trials comprehensively. Instead, the UK continues to rely on the Criminal Justice Act 1987, supplemented by the Guidance on

³⁹ Gerry, Muraszkievicz, and Iannelli, "The Drive for Virtual (Online) Courts and the Failure to Consider Obligations to Combat Human Trafficking – a Short Note of Concern on Identification, Protection and Privacy of Victims."

⁴⁰ Reform, "Delivering Digital Courts" (London: Reform, 2019), 6.

Article 6 of the European Convention on Human Rights, which indirectly influences the procedural aspects of electronic trials. In contrast, Singapore has adopted a more structured approach by integrating electronic trial provisions into the COVID-19 Act 2020, which formalizes the use of virtual proceedings within the framework of global health protocols. This comparison illustrates that, while both jurisdictions rely on general procedural laws (*lex generalis*) for electronic trials, Singapore has taken a more progressive step by enacting a dedicated statutory framework that aligns electronic trial regulations with broader legislative mandates, thus providing stronger legal certainty.⁴¹

From a sociological perspective, the crime rates in both the UK and Singapore remain significantly lower than in Indonesia. The UK records approximately 10,000 criminal cases annually, while Singapore reports around 7,470 cases. However, both countries have experienced fluctuations in crime rates, particularly during periods of social and economic instability. In comparison, Indonesia reported a considerably higher crime rate, with approximately 269,300 cases recorded in 2022.⁴² Although these statistics highlight disparities in crime prevalence, they also underscore a shared objective across these jurisdictions: the utilization of electronic proceedings to expedite judicial processes and mitigate trial delays. The implementation of electronic criminal trials is therefore not solely a matter of legal adaptation but also a response to the broader need for judicial efficiency and accessibility.

Both Singapore and the UK leverage teleconferencing technology to facilitate the examination of witnesses while ensuring their protection, particularly in cases where direct confrontation may pose risks.⁴³ Beyond these jurisdictions, electronic criminal trials have gained traction across Europe, with several EU member states—most notably Italy and Poland—integrating video conferencing as a legally recognized medium for witness testimony. This demonstrates a broader regional commitment to

⁴¹ Aaron Yoong, “Zooming into a New Age of Court Proceedings: Perspectives from the Court, Counsel and Witnesses,” *Singapore Academy of Law Practitioner*, 2020, 3.

⁴² Mahkamah Agung, *Laporan Tahunan Mahkamah Agung Tahun 2022 Optimalisasi Peradilan Modern Berkelanjutan* (Jakarta: Mahkamah Agung Republik Indonesia, 2022).

⁴³ Efa Laela Fakhriah, *Bukti Elektronik Dalam Pembuktian Perdata*, Ed. 1., cet. 1 (Bandung: Alumni, 2009), 56.

enhancing procedural efficiency while preserving the integrity of criminal justice systems. The increasing adoption of electronic trials across various legal systems reflects a fundamental transformation in judicial practices, driven by advancements in technology and the evolving demands of contemporary legal proceedings.⁴⁴

The Indonesian Supreme Court’s Blueprint for Judicial Reform 2010–2035 envisions the modernization of the judiciary through the integration of information technology, positioning digital transformation as a key indicator of an ideal judicial system. The term "integrated" within this blueprint signifies the recognition of a long-standing gap in judicial information management, necessitating the development of a unified and technology-driven court system. The introduction of e-court systems aims to address this gap by digitalizing court services and enabling electronic case management. Drawing from international best practices, the Supreme Court of Indonesia aspires to establish an electronic court infrastructure akin to those implemented in jurisdictions such as the United States Supreme Court, the UK Supreme Court, the Supreme Court of Singapore, Malaysia’s E-Syariah, the PACER system in the United States, Singapore and India’s E-Filing platforms, Canada’s digital legal services, and Australia’s E-Case administration. These comparative insights provide a roadmap for Indonesia’s judicial modernization efforts, emphasizing the importance of aligning national policies with global advancements in electronic judicial administration.⁴⁵

Several countries have already adopted electronic criminal trial systems, including:

Table 2. Comparison of Electronic Criminal Trial Laws Between Countries

No	Country	Regulation	Electronic Trial
1	Australia	High Court Bulletins 1996	Electronic
2	America	Public Act 262 of 2001 America	Electronic
3	Netherlands	Criminal Procedure Act 78a and 131a <i>Straafvoerding</i>	Electronic
4	Korea	The 1987 Korean Constitution and the Criminal Procedure Act of South Korea.	Electronic

⁴⁴ Arijaya, “Teknologi Informasi Dan Pengembangan Administrasi Peradilan,” *Mahkamah Peradilan Agama*, 2018, 10–12.

⁴⁵ *Cetak Biru Pembaruan Peradilan*.

In her article titled “E-Justice: An Australian Perspective,”⁴⁶ Anne Wallace notes several breakthroughs that the Australian courts implemented, such as Case Management, Judgment Publication and Distribution, Litigation Support, Evidence Presentation, Electronic Courtrooms, Knowledge Management, Video Conferencing, Transcripts, Electronic Filing, Electronic Search, and E-courts. For comparison, Australia has also previously implemented online dispute resolution, allowing parties involved in legal disputes to resolve their issues electronically.

One notable aspect of Australia's experience is the website <http://www.austlii.org>. This site is the most well-known provider of free legal materials and information in Australia, offering primary public legal information such as legislation and court decisions, as well as secondary materials like journals and legal studies. The High Court of Australia has officially published its decisions on this site since 1903 to this date.⁴⁷ Additionally, it provides Special Leave Dispositions since 2008, court transcripts since 1994, and High Court Bulletins since 1996.

To support the establishment of an electronic justice system, several countries have developed judicial information systems.⁴⁸ In the United States, since 1999, there has been an electronic court information system called Public Access to Electronic Records (PACER), along with Case Management and Electronic Case Files (CM/ECF), and various applications of information technology to assist judicial functions. Long before entering the Era of the 4.0 Industrial Revolution, the United States was already familiar with Virtual Civil Courts since 1998 in which court proceedings utilized video conferencing and electronic filing, along with case management software. Thus, electronic court processes have become a familiar practice in the United States.

⁴⁶ Marco Fabri, *E-JUSTICE, Using Information Communication Technologies in the Court System, Information Science Reference* (New York: Hershey, 2009), 15.

⁴⁷ Paul D. Carrington, “Virtual Civil Litigation: A Visit to John Bunyan’s Celestial City,” *Columbia Law Review* 98 (n.d.): 1516–37.

⁴⁸ Sofyan Rauf, “The Ideal Model for Returning Criminal Case Files Based on the Integrated Criminal Justice System Approach,” *Philosophia Law Review* 4, no. 1 (2024): 21–42; Gustab Mustofa Botutihe, “Restorative Justice Approach in the Termination of Prosecution: A Conceptual Study and Practical Implementation,” *Philosophia Law Review* 4, no. 1 (2024): 1–20.

The first U.S. state to trial a cyber court was Michigan. Based on House Bill 4140, which was approved in November 2001 and enacted as Public Act 262 of 2001 on January 9, 2002, the cyber court was designated for cases related to technology and high-tech businesses. In these cases, it was found to be more effective to conduct trials and examinations via computer rather than in a courtroom setting. Participants, including jurors, defendants, attorneys, and judges, do not need to be physically present in the courtroom but can use video conferencing as a communication medium during court proceedings.

Since the outbreak of the pandemic, on March 27, 2020, the United States implemented The Coronavirus Aid, Relief, and Economic Security Act (CARES Act) as a result of the 116th Congress of The United States of America, which convened on January 3, 2020, in Washington, D.C. The CARES Act is a public law instrument that implements fiscal stimulus policies and permits the use of video conferencing for certain cases in court during the declared emergency period, which began when the President of the United States declared a National Emergency through the National Emergencies Act and lasted for 30 days after the National Emergency Declaration was revoked. The U.S. government also prepared a website, Judiciary Preparedness for Coronavirus, accessible at <https://www.uscourts.gov>, which provides information for legal service users to continue accessing legal services electronically during the pandemic. The application of video conferencing or telephone conferencing has since been developed and utilized for specific criminal cases and juvenile delinquency matters.⁴⁹

In the United States, before using video conferencing for oral arguments, parties must fill out agreements that specify which media or platform they intend to use. Similar to Indonesia, the platform most commonly used for oral arguments (hearings) at this time is the Zoom application. Many criminal courts across various states in the United States have already adopted Zoom to conduct electronic hearings, a practice that was traditionally held in the courtroom.⁵⁰

In the Netherlands, an electronic court system is also employed for criminal trials,

⁴⁹ <https://www.uscourts.gov>, accessed on 20 Juni 2022

⁵⁰ Lucille M. Ponte, "Michigan Cyber Court: A Bold Experiment in the Development of the First Public Virtual Courthouse," *North Carolina Journal of Law and Technology* 4, no. 1 (2002).

referred to as Remote Justice. The Netherlands has a system called *Seponeren*, which acts as a filter for cases during the pandemic threat. In this context, the Netherlands prioritizes prosecutions related to the pandemic, focusing on serious cases, significant matters, and violations of lockdown regulations, all approved by the court's commissioner. The model for electronic trials in the Netherlands requires the consent of the defendant, legal counsel, and the prosecutor, in accordance with Articles 78a and 131a of the Dutch Criminal Procedure Act (*Wetboek van Strafvordering*).⁵¹

In South Korea, an electronic system is also utilized for criminal trials. Similar to the Netherlands, South Korea has chosen to postpone hearings due to the impact of the pandemic and prioritizes cases deemed important, such as corruption cases involving former presidents and corporate crimes related to Samsung. Additionally, electronic criminal courts in South Korea pay special attention to investigations regarding hoaxes related to the coronavirus, mask hoarding, and quarantine violations that occurred during the country's lockdown. Despite using an electronic court system for criminal cases, South Korea remains committed to upholding the guarantee of due process, ensuring that legal proceedings are fair and impartial, as explicitly stated in the 1987 Constitution of South Korea and the South Korean Criminal Procedure Act.⁵²

In Canada, video conference technology has been used to receive witness testimonies in civil trials for over a decade. The Ontario Rules of Civil Procedure, which govern one of the provinces in Canada, allow witnesses in civil trials to testify remotely using video conferencing technology. Article 1, paragraph (8) of the Ontario Rules of Civil Procedure states that a witness's oral evidence in court may be accepted via video conference if approved by the disputing parties; in the absence of such approval, video conference evidence can still be accepted at the court's own initiative. The acceptance of evidence through video conferencing is subject to the court's discretion.

In addition to these countries, there have been similar technological breakthroughs in Indonesia, such as those implemented by the judiciary in China. For example, the

⁵¹ Anthony Garofano, "Avoiding Virtual Justice: Video-Teleconference Testimony in Federal Criminal Trials," *Catholic University Law Review* 56 (2007).

⁵² Paul Stothard and Clinton Slogrove, "COVID-19: Approach to Court Proceedings," *Norton Rose Fulbright LLP International Law Office*, 2020.

Beijing First Intermediate People's Court has utilized Virtual Reality (VR) technology for witnesses to present their testimonies in a visual format. Witnesses are equipped with VR headsets to simulate what they saw and did during the legal event. A large screen projector installed in the courtroom displays simulated images, conditions, and movements surrounding the occurrence of the legal event based on what the witness observed and experienced.⁵³

Regulations regarding witness testimony electronically via teleconference as evidence in criminal cases in Indonesia should ideally be established through both formulative legal policies and material legal policies. The ideal legal policy would take the form of legislation. Therefore, it is crucial to amend the Criminal Procedure Code (KUHAP) as the legal foundation for proceedings in court. However, as long as the KUHAP has not been enacted, the Supreme Court can issue a Supreme Court Regulation (PERMA) to provide a legal framework for the implementation of the witness' testimony via teleconference. With this regulation, it is expected that the legal gap will be addressed, making the legality of testimony through teleconference clearer.

4.3. Challenges of Electronic Criminal Trials in Indonesia

As a legal policy, electronic trials represent the judiciary's efforts to modernize the legal system based on innovation and technological advancements. However, this policy undoubtedly sparks debate. This debate should be viewed as a challenge that must be managed, anticipated, and resolved moving forward.

Several issues that arise and are contested are as follows:

- 1) Weaknesses of the Substantive Aspects of the Supreme Court Regulation No. 8 of 2022 on Administration and Electronic Criminal Trials

The regulation regarding electronic trials in Indonesia, as outlined in Supreme Court Regulation No. 8 of 2022 on Administration and Electronic Criminal Trials, is deemed insufficient in providing guarantees for the protection of

⁵³ Liu Yanwen, "The First Intermediate People's Court of Beijing: Case 3. Administrative Ruling," *Chinese Education & Society* 39, no. 3 (May 2006): 90–92, <https://doi.org/10.2753/CED1061-1932390305>.

defendants' rights in the electronic trial process.⁵⁴ The provisions in this regulation grant full authority to the Panel of Judges to determine the trial model to be applied, without allowing defendants to choose their preferred model of trial, even though defendants have a direct interest in the case being heard. This provision contrasts with the rules for electronic civil trials, as stipulated in Supreme Court Regulation No. 7 of 2022 on Electronic Civil Trials, where the defendant is given the option to participate in electronic or in-person hearings. The lack of choice for defendants in electronic criminal trials violates their rights, undermining the principles of Human Rights.⁵⁵ This infringement of the defendants' rights can be seen in the cases of Jerink and Rizieq,⁵⁶ who refused electronic trials as they had no choice and were unaware of the considerations that led the judges to decide on the electronic trial model.

Additionally, the substantive weaknesses in the Supreme Court Regulation for conducting electronic criminal trials include the absence of criteria that judges can consider when deciding on the trial model to be used, whether it be in-person or electronic. This creates uncertainty and indicates that the choice of the electronic trial model will be highly subjective based on the judges' discretion. In criminal law principles, considerations regarding the choice of trial model should also be based on legal certainty, such as having clear criteria regarding when and how judges can conduct trials electronically or in person. Not only does the determination of the trial model—whether in-person or electronic—raise debates, but the provisions in the Supreme Court Regulation regarding electronic criminal trials also do not require defendants to be accompanied by legal counsel. This is contrary to Article 56 of Law No. 8 of 1981

⁵⁴ Anggita Doramia Lumbanraja, "Perkembangan Regulasi Dan Pelaksanaan Persidangan Online Di Indonesia Dan Amerika Serikat Selama Pandemi Covid-19," *CREPIDO* 2, no. 1 (May 26, 2020): 46–58, <https://doi.org/10.14710/crepido.2.1.46-58>.

⁵⁵ M Anwar Nawawi et al., "Harmonization of Islam and Human Rights: Judges' Legal Arguments in Rejecting Child Marriage Dispensation in Sukadana, Indonesia," *Ijtihad : Jurnal Wacana Hukum Islam Dan Kemanusiaan* 22, no. 1 (September 1, 2022): 117–34, <https://doi.org/10.18326/ijtihad.v22i1.117-134>; Dian Ekawaty Ismail et al., "Collocation of Restorative Justice with Human Rights in Indonesia," *Legality : Jurnal Ilmiah Hukum* 32, no. 2 (September 20, 2024): 394–417, <https://doi.org/10.22219/ljih.v32i2.35374>.

⁵⁶ Ihsanuddin, "Cara Rizieq Tolak Sidang Virtual: Marah-Marah Hingga Abaikan Hakim," *Kompas.Com*, 2021.

on Criminal Procedure Law, which emphasizes the defendant's right to be accompanied by legal counsel. The provision that does not mandate defendants to be accompanied by legal counsel poses a potential violation of the defendant's basic rights.

2) Reduction of the Principle of Open Trials to the Public

One of the essential principles in criminal justice is the principle of openness to the public, which requires transparency in the trial process from beginning to end, unless otherwise stipulated by law, such as in cases involving obscenity or offenses involving minors, which are indeed designed to be closed to the public. In general cases, the principle of public openness should be fully applied. The limitations placed on the public's access to each trial conducted electronically are regarded as diminishing the essential meaning of the principle of open trials to the public.⁵⁷ Although in this context, Susskind argues against these concerns and tries to reassure that electronic trials can actually facilitate the optimization of the essence of the principle of open trials.⁵⁸ However, in practice, in the context of Indonesia, this principle of open trials to the public is still far from the ideal condition argued by Susskind.

3) Guarantees for Personal Data Protection

In the development of electronic trials, the aspect of personal data has raised concerns among various parties.⁵⁹ While electronic trials are viewed as a way to enhance access to justice and the right to a fair trial, they simultaneously raise worries about personal data protection.⁶⁰ A recent incident involving the Indonesian National Data Center being hacked by the hacker resulted in national data, including personal information of Indonesian citizens, potentially

⁵⁷ Rian Saputra, Josef Purwadi Setiodjati, and Jaco Barkhuizen, "Under-Legislation in Electronic Trials and Renewing Criminal Law Enforcement in Indonesia (Comparison with United States)," *Journal of Indonesian Legal Studies* 8, no. 1 (May 31, 2023): 243–88, <https://doi.org/10.15294/jils.v8i1.67632>.

⁵⁸ Susskind, *Online Courts and the Future of Justice*; Colin Rule, "Review of Online Courts and the Future of Justice by Richard Susskind (Oxford University Press, 2019)," *International Journal for Court Administration* 11, no. 2 (August 10, 2020): 10, <https://doi.org/10.36745/ijca.346>; Cowan, "Richard Susskind, *Online Courts and the Future of Justice* (Oxford: Oxford University Press, 2019)."

⁵⁹ M. Ilham Tanzilulloh and Khoirun Nisa Aprilian Agmar, "Virality, Justice and the Principle of 'Blocking the Means to Evil,'" *De Jure: Jurnal Hukum Dan Syar'iah* 16, no. 2 (2024): 317–35; Hari Sutra Disemadi, "Data Ownership in Regulating Big Data in Indonesia Through the Perspective of Intellectual Property," *JURISDICTIONE* 13, no. 2 (January 30, 2023): 188–209, <https://doi.org/10.18860/j.v13i2.17384>.

⁶⁰ Maralbaeva, "Evolution of E-Justice Platforms."

being misused.⁶¹ The issue of personal data protection in electronic trials in Indonesia has not yet become a serious topic of discussion.⁶² However, in the context of electronic trials in various countries, the issue of guarantees for personal data protection has received significant attention from judicial institutions implementing this electronic trial method. This should also be a concern for the Supreme Court as the executor of judicial power, and it is necessary to take measures in order to prevent leaks of personal data arising from the electronic trial system.

4) Limitations of Supporting Infrastructure for Electronic Trials and Human Resources.

Electronic criminal trials also face challenges due to the uneven access to internet networks. Indonesia's vast territory and diverse geography are key factors contributing to the disparity and lack of internet access across the country. The Ministry of Communication and Information Technology of the Republic of Indonesia notes that approximately 40% of the country remains unconnected to the internet.⁶³ Additionally, the National Information and Communication Technology Council reports that 12,000 villages are still in blank spots with no telecommunication signals.⁶⁴ This presents a significant challenge in building internet networks that can reach these areas.

The evaluation results of the implementation of electronic trials also highlighted the lack of facilities in courtrooms to support electronic trials as a significant concern. In 2020, only 25 out of 677 courts across Indonesia were capable of conducting electronic trials.⁶⁵ Efforts to improve the infrastructure for electronic trials have certainly been enhanced in subsequent years.

⁶¹ Aditya Priyatna Darmawan, "PDN Dibobol Hacker, Bagaimana Nasib Data Pribadi Warga? Ini Yang Perlu Diketahui," *Kompas.Com*, June 29, 2024.

⁶² Artur Gordienko et al., "Legal Regulation of E-Courts in Ukraine as an Element of Access to Justice for the Protection of Individual Rights," *Jurnal IUS Kajian Hukum Dan Keadilan* 12, no. 1 (April 26, 2024): 17–30, <https://doi.org/10.29303/ius.v12i1.1316>.

⁶³ Josua Sihombing, "Kemenkominfo Catat Sejumlah Wilayah Indonesia Belum Terkoneksi Internet," *Rri.Co.Id*, 2024.

⁶⁴ Miqdad Miqdad, "Literature Review: Buzzer Politik Dan Pengembangan Opini Di Media Sosial Di Indonesia," *NeoRespublica : Jurnal Ilmu Pemerintahan* 5, no. 2 (2024).

⁶⁵ Abdul Rachmat Ariwijaya and Palupi Lindiasari Samputra, "Evaluasi Kebijakan Peradilan Elektronik (e-Court) Mahkamah Agung Republik Indonesia," *Jurnal Hukum & Pembangunan* 51, no. 4 (2021): 1104–22.

However, regions without internet access remain a major obstacle in the implementation of these trials. Additionally, the lack of qualified IT personnel also poses a challenge to the execution of electronic trials.⁶⁶

4.4. The Future Electronic Criminal Trials

As predicted by Susskin regarding the future use of information technology in judicial activities, particularly electronic trials, and considering the interest of the Indonesian public in using these facilities to facilitate their access to justice in judicial institutions, electronic criminal trials in Indonesia indeed become a model that needs to be considered for continued implementation in the future. This is especially relevant as 169,480 criminal cases have already been handled through electronic trials.⁶⁷ Despite the need for electronic trial models, the weaknesses and challenges that arise must be anticipated, managed, and addressed.

Several necessary measures to strengthen electronic criminal trial services and ensure they continue to facilitate public access to justice in judicial institutions include:

- 1) There is a need to reform the Criminal Procedure Code, which currently only regulates physical trials, requiring the presence of both the defendant and witnesses in the courtroom. This regulation is understandable, as when the law was created, the development of electronic trials was not yet envisioned by the lawmakers. Amending the law will serve as an opportunity to respond to the current developments, addressing new situations that have arisen with the rapid progress in technology and society, especially radical innovations in the judiciary, including electronic trials.

Incorporating electronic trials into the Criminal Procedure Code will provide legal certainty and a strong legal foundation for the implementation of trials that are fundamentally aimed at uncovering material truth. This regulation is

⁶⁶ Ida Bagus Gde Subawa, "Problems with Online Criminal Justice in Criminal Procedure Law Due to the Covid-19 Pandemic," *International Journal of Social Science and Business* 5, no. 3 (August 4, 2021): 436, <https://doi.org/10.23887/ijssb.v5i3.37952>; Heni Rosida, Nadiyah Meyliana Putri, and Ayu Putri Rainah Petung Banjaransari, "The Effectiveness of The Implementation of The E-Court Justice System and The Impact on Administrative Court in Indonesia," *Ikatan Penulis Mahasiswa Hukum Indonesia Law Journal* 2, no. 2 (2022): 258–72.

⁶⁷ *Laporan Tahunan Mahkamah Agung Tahun 2022 Optimalisasi Peradilan Modern Berkelanjutan*, 91.

also expected to establish clear and firm standards and mechanisms for the conduct of electronic criminal trials.⁶⁸

The regulation of standardization and mechanisms for conducting electronic trials can take into account the standards and mechanisms set in the United States, where electronic trials can be conducted as long as the following criteria are met: a) the presence of an officially declared emergency, b) the court chair's decision for the implementation of the electronic trial, and c) the defendant's consent must be obtained.⁶⁹

The above provision demonstrates clear criteria with objective measures regarding the implementation of electronic trials, which differs from the legal provisions for electronic criminal trials in Indonesia, where the decision to hold an electronic trial is subjectively determined by the presiding judges.

In addition, it is also necessary to emphasize the defendant's right to be accompanied by legal counsel in electronic trials, because in the current provisions regulated in the Supreme Court Regulation, the assistance of the defendant by legal counsel in electronic trials is optional. In fact, without direct legal counsel, the defendant's human rights are violated and the defendant's dignity and honor as a human being are clearly reduced only because of technical internet constraints and the prohibition of physical meetings.

2) Provision of adequate infrastructure and human resources.

As a service utilizing technology, this service will undoubtedly rely on the extent to which the infrastructure supports electronic services. The network is one of the key factors determining whether this service can operate smoothly. Network support is not only necessary for the courts but also for related institutions such as the prosecutor's office, and providing network access for all regions, especially those currently without coverage, must be a priority for the relevant authorities. After all, the availability of a network is intended not only

⁶⁸ Saputra, Setiodjati, and Barkhuizen, "Under-Legislation in Electronic Trials and Renewing Criminal Law Enforcement in Indonesia (Comparison with United States)."

⁶⁹ Panji Purnama and Febby Mutiara Nelson, "Penerapan E-Court Perkara Pidana Sebagai Salah Satu Upaya Terwujudnya Integrated Judiciary Dalam Sistem Peradilan Pidana Di Indonesia," *Jurnal Rechts Vinding: Media Pembinaan Hukum Nasional* 10, no. 1 (April 29, 2021): 97, <https://doi.org/10.33331/rechtsvinding.v10i1.661>.

to optimize electronic trial services but also other services that have also transitioned to electronic-based systems.

Additionally, to optimize electronic services in the future, it will require human resources, specifically IT personnel, to serve as operators in each court that provides access to electronic trials, including related institutions such as the prosecutor's office and correctional facilities, where defendants participate in trials electronically.⁷⁰ Moreover, the limited understanding of certain vulnerable groups in Indonesia, such as the elderly, people with disabilities, and other at-risk populations, should be considered when enhancing services to be more accessible and inclusive. This way, access to justice can be extended to these vulnerable groups as well.⁷¹ To further assist the public in utilizing electronic services, including electronic trials, beyond the need for accessible written information in the application, providing short and easy-to-understand video tutorials placed within the application would be highly valuable. This would greatly assist the public in understanding how to use these electronic services effectively.

3) Development of a personal data protection system.

One of the issues currently being highlighted in the implementation of electronic trials is the protection of personal data of the parties,⁷² particularly that of the defendant. Reflecting on the case of the hacking of Indonesia's national data center, which resulted in the leakage of citizens' personal data, this is a concern that must be anticipated by the Supreme Court as the institution providing electronic trial services.

Guarantees for the protection of personal data in the implementation of electronic services, especially electronic trials, involve the provision of specialized tools that can ensure personal data protection. For comparison, in Kyrgyzstan, the electronic trials are conducted using a system called Remote

⁷⁰ "Evaluasi Kebijakan Peradilan Elektronik (e-Court) Mahkamah Agung Republik Indonesia."

⁷¹ Alexander Hudson, "When Does Public Participation Make a Difference? Evidence From Iceland's Crowdsourced Constitution," *Policy & Internet* 10, no. 2 (June 2018): 185-217, <https://doi.org/10.1002/poi3.167>.

⁷² Taylor Benninger, Courtney Colwell, and Leah Plachinski, *Virtual Justice? A National Study Analyzing the Transition to Remote Criminal Court* (California: Stanford Law School, 2021), 90.

Hearings via Videoconferencing (HRVC), which is designed to depersonalize the data of the parties involved in electronic trials.⁷³ This is intended to ensure confidentiality and protect personal data, so that the judiciary, which seeks to create access to justice for those seeking it, does not neglect the protection of personal data, ultimately leading to a new form of injustice.

There is a need for a specific system that can protect encrypted data, which must be met to provide assurance to the parties regarding the protection of personal data. This way, the parties can participate in electronic trials with peace of mind and security.

5. Conclusion

Radical innovations, particularly in electronic trials, highlight the need for sustainability, but they also come with technical and substantive challenges. The substantive aspect relates to the regulatory level, where the current Supreme Court Regulation should ideally be elevated to the level of the Criminal Procedure Code. There is also a lack of clarity regarding the criteria for conducting criminal trials electronically, especially when compared to the United States, where clear criteria are established. On the technical aspect, issues such as unequal internet access, network availability, and limited human resources present challenges that need to be addressed. For the success of electronic criminal trials in the future, it is essential to establish clear regulations at the level of the Criminal Procedure Code; ensure equal access to network infrastructure so that electronic trials can be implemented in all courts across Indonesia; improve the quality of electronic trial services, particularly for vulnerable groups (such as the elderly and people with disabilities); and enhance data security systems to protect personal information, as developed in Kyrgyzstan.

Acknowledgments

The author extends sincere gratitude to the Indonesia Endowment Fund for Education (LPDP) and the Higher Education Funding Agency of the Ministry of Education, Culture, Research, and Technology for their support and funding of the research and publication of this article.

⁷³ Maralbaeva, "Evolution of E-Justice Platforms."

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