

# Optimization of Technology Use in the New Normal Parole Program: A Comparative Study of Indonesia, the United States and the United Kingdom

Argo Suhartono<sup>1,\*</sup> Dannissa Rahmadiyanti<sup>1</sup> Olivia Sarayar<sup>1</sup>

<sup>1</sup>Class I West Jakarta Probation and Parole Office, DKI Jakarta

\*Corresponding author. Email: [argo.suhartono@kemenkumham.go.id](mailto:argo.suhartono@kemenkumham.go.id)

## ABSTRACT

The Law and Human Rights Ministerial Regulation Number 32 of 2020, which was issued as an emergency policy, has encouraged the optimal use of technology in the parole programs during the Covid-19 pandemic. Optimizing the use of technology, in fact, has made services in the correctional field, especially the parole program, more effective. Furthermore, this can also be an anticipatory measure in carrying out the corrective function in the event of a pandemic or any other emergency situation in the future. These demonstrated the importance of maintaining technology optimization in the New Normal era. Indonesia, on the other hand, still lacks a clear legal foundation and guidelines for the use of technology in the parole program. Therefore, this research aimed to compare the use of technology in Indonesia, the United States and the United Kingdom in order to determine how prepared Indonesia was in optimizing the use of technology in the parole program. This study used a qualitative approach with a normative legal method. The obtained data is then analyzed descriptively and comparatively. The result of this study indicated that Indonesia still had shortcomings in terms of the legal basis, operating standards, and the availability of technology. In conclusion, Indonesia still had to prepare regulations, standards and technologies needed in order to perform the correctional function more effectively and efficiently, both during and after the pandemic.

**Keywords:** emergency policy; technology; corrections; parole program, corrections management.

## 1. INTRODUCTION

The pandemic crisis has forced the government to devise new methods of administering public services, including the corrections service. This is demonstrated by the issuance of The Law and Human Rights Ministerial Regulation Number 32 of 2020, an emergency strategy that encourages the optimal use of technology in reintegration programs during a pandemic crisis. Article 7 paragraph (1) states that "assimilation is carried out through the correctional information system," and Article 23 paragraph (1) states that "the granting of parole, leave nearing free, and conditional leave is carried out through the correctional information system."

Not only in the process of proposing reintegration, demands for optimizing the use of technology are also contained in the implementation of the parole program that was carried out by the

probation and parole officer in the probation and parole office. This is mentioned in the Directorate General of Corrections Circular Number PAS-20.PR.01.01, dated March 26, 2020, on Progressive Steps in Combating the Spread of the Corona Disease Virus (Covid-19) in the Correctional Technical Implementation Unit. Number 5 letter f of the rule instructs the probation and parole office's head to: conduct supervision and guidance by optimizing information technology-based facilities (video calls); create a special spot outside the main office area (front desk) for registering new clients; coordinate with the police, prosecutors, and courts regarding the creation of a social inquiry report, as well as to assist, guide, and supervise juveniles via teleconferences; create a social inquiry report by applying the principle of social / physical distancing (minimizing physical contact) or by studying documents and reports. It can be seen from the preceding that, in order to avoid the spread of the Covid-19 virus, the

probation and parole office's duties and responsibilities should be carried out by using the concepts of social/physical distance and optimizing the use of information technology.

According to the findings of an interview with one of the Probation and Parole Officers (PPO) from the Class I West Jakarta Probation and Parole Office, the implementation of technology optimization that has been ongoing for more than a year has increased the effectiveness and efficiency of task implementation in a variety of ways. One of them is in terms of time management. By maximizing the use of technology in the form of video chats and teleconferences, PPO travel activities such as making social inquiry reports, coordination, and supervision do not need to be carried out, resulting in less time spent on duties.

Furthermore, technological advancements make it easier and less expensive for clients to report and engage in parole program activities. Clients may use their cell phones to report and engage in parole activities which save time and money. Not only is it simple and inexpensive, but the use of technology for mandatory reporting and parole program activities is more time-efficient, allowing the Client's working hours to be adjusted.

Optimizing the use of technology is also a preventative measure in the event of a pandemic, disaster, or other emergency crisis, which includes correctional services. According to research that was conducted by Asadzadeh et al. [1], the usage of information technology in emergency situations is extremely beneficial in crisis management. In the case of the Covid-19 epidemic, for example, the application of information technology improves diagnosis accuracy, early detection, decreases workload, and saves time and money.

Some of the advantages of adopting information technology in the correctional environment underline the need for technology optimization during the New Normal period and beyond. On the other hand, Indonesia still lacks consistent guidelines for using technology, particularly in reintegration programs. As a result, the optimization of technology use is limited.

In this regard, this study aims to determine the extent of technology optimization in the field of correctional facilities compared to the USA and UK. In addition, this study also aims to determine what can be improved to optimize the use of technology.

## 2. RESEARCH METHOD

This is qualitative research that used normative legal approach. All the data was gathered through a literature review. The information gathered from secondary sources such as books, online journal publications, laws and regulations, official government documents, and official news on the internet.

The information gathered was evaluated descriptively and comparatively. To compare the situation in Indonesia, we chose the United States and the United Kingdom. This is due to the fact that the two countries have introduced a variety of technological applications that have proven to be quite excellent and optimal for enhancing the correctional system, particularly in the supervision of reintegration programs. In this case, the Demographic Condition, the Regulation on the Use of Technology in the Parole and Probation Program, and the Parole and Probation Technology will be compared.

## 3. FINDINGS AND DISCUSSION

### 3.1. Demographic Condition

In this aspect, we derived two indicators which affect the technology use of the countries. The first indicator was socio-economic status (SES). Previous studies [2]–[4] demonstrated a significant relationship between SES and the use of Information Technology (IT). These studies suggested that people with higher SES were likely easier in accessing IT than individuals with lower SES. The second indicator was education level. The education level of individuals also plays important role in technology use. Some studies found that education levels in elderly groups influence willingness to learn new technology [5]–[7].

#### 3.1.1. Economic Condition

The state of the economy was described using GDP per capita data from the World Bank website in 2019[8] and poverty rates from the national statistics bureau in Indonesia[9] and the United States[10], and the House of Commons in the United Kingdom[11].

According to World Bank data, GDP per capita in Indonesia was US\$4,135.6, US was US \$65,297.5 and UK was US \$42,330.1. Meanwhile, global GDP per capita was US\$11,433.2. Comparing all the data above, Indonesia had the lowest GDP per capita than the US and UK. Moreover, compared to global GDP per capita, Indonesia was still lower. This means that

Indonesia's economic condition based on GDP per capita was performing below par.

**Table 1.** Economic Condition of Indonesia, United States and United Kingdom based on GDP and Poverty Rate

Country	GDP Per Capita	Poverty Rate
Indonesia	US\$4,135.6	9,78%
United States	US\$65,297.5	10,5%
United Kingdom	US\$42,330.1	18%

However, the economic conditions of the countries were in contrast when we compared the poverty rate of each country. Based on the Central Bureau of Statistic of the Republic of Indonesia, Indonesia's poverty rate was 9.78%. Meanwhile, the US's poverty rate was 10,5% and the UK's was 18%. This contradictory data could be attributed to differences in economic welfare standards between countries.

### 3.1.2. Education Condition

The education situation in each country was described using the highest educational attainment data from the Central Bureau of Statistics Republic of Indonesia (BPS)[12] and the Organization for Economic Co-Operation and Development (OECD)[13].

According to BPS data in 2019, the majority of the population aged 15 years and over in Indonesia (26.69%) already completed the Senior High School level. Meanwhile, 3.96% of the population had never completed formal education, 12.66% had never completed elementary school, 25.13% had completed elementary school, 22.31% had completed junior high school, and 9.26% had completed a degree or higher. We then summarized the data into three categories: 9.26% of the population attained upper secondary education, 26.69% of the population attained secondary education, and 64.05% of the population were below secondary education graduates.

From OECD data, we collected the highest educational attainment data for the US and UK populations aged 25-64 years old. According to this statistic, 48.3% of the US population is upper secondary graduates, 42.5% is secondary education graduates, and 9.2% is below secondary graduates. Meanwhile, the highest educational attainment data in the UK revealed that 47.2% of the UK population is upper secondary education graduates, 32.9% is secondary education graduates, and 19.9% is below secondary graduates.

**Table 2.** The education systems of Indonesia, the United States, and the United Kingdom are ranked according to educational attainment

Country	Upper Secondary Education Graduates	Secondary Education Graduates	Below Secondary Graduates
Indonesia	9.26%	26.69%	64.05%
United States	48.3%	42.5%	9.2%
United Kingdom	47.2%	32.9%	19.9%

As we can see on the table, in Indonesia, the majority of people have less than secondary education, followed by secondary education, and the least have an upper secondary education. This condition contrasted with the educational conditions in the United Kingdom and the United States, where the majority of people completed upper secondary education, followed by secondary education, and then below secondary education. Based on this comparison, we conclude that education in Indonesia still needs to be improved.

### 3.2. Regulation on the Use of Technology in Parole and Probation Program

In general, Indonesia has regulations that encourage the development of science and technology in the pursuit of national development and the fulfilment of human rights. This is specified in Law Number 11 of 2019 concerning the National System of Science and Technology. In correctional fields, Indonesia's government had only regulated the use of technology for correctional use, namely for the use of the Correctional Database System (SDP) through The Law and Human Rights Ministerial Regulation Number 39 of 2016 which was later revised a year later with The Law and Human Rights Ministerial Regulation Number 28 of 2017 before the pandemic. This regulation regulates the administration, management, supervision, recovery, cooperation in exchanging data and information, and other general rules of The Correctional Database System. Then when the pandemic broke out, Indonesia's government started regulating the use of technology for correctional purposes through several circulars, laws and regulations. However, the use of video conferencing technology is still limited and has not been regulated in a detailed and comprehensive manner. On the other hand, the United States and the United Kingdom have regulated the use of various technologies in the form of electronic monitoring technology, risk-need responsivity assessments, integrated database systems, and video conferencing guidelines even before the pandemic. This shows that

despite having general regulations that promote the use of technology, Indonesia still needs to add clear regulations governing the use of technology in the prison system.

### 3.2.1. *Indonesia's Regulation*

To reduce the transmission of Covid-19 in the implementation of the correctional functions, the Ministry of Law and Human Rights has issued Regulation of the Minister of Law and Human Rights Number 32 of 2020 Terms and Procedures for Providing Assimilation, Parole, Leaving Towards Free, and Conditional Leave for Prisoners and Children in the Context of Prevention and Control The spread of Covid-19. To support the implementation of that regulation, it is necessary to optimize the use of technology in supervising and mentoring clients undergoing assimilation and integration programs. Several Circular Letters and guidelines have addressed the use of technology in client monitoring and guidance, including:

#### 3.2.1.1. Circular of the Director-General of Corrections Number: PAS-20.PR.01.01 Year 2020 concerning Progressive Steps in the prevention of the spread of the Corona Disease Virus (Covid-19) in the Correctional Technical Implementation Unit

In point f of this Circular, it is stated that the head of Parole and Probation Office is instructed to "Supervise by optimizing information technology-based facilities (video calls)" and "To coordinate with the Police, the Attorney General's Office and the court regarding the implementation of community research, mentoring, guidance and supervision of children through teleconference media.

#### 3.2.1.2. Circular of the Director-General of Corrections Number: PAS-516.PK.01.04.06 of 2020 concerning the Mechanism of Implementing Regulation of the Minister of Law and Human Rights Number 10 of 2020 concerning Conditions for Providing Assimilation and Integration Rights for Prisoners and Children in the Context of Preventing and Combating the Spread of Covid-19

The contents of a circular instructing the Head of Parole and Probation Office to implement a mechanism for guiding and supervising prisoners and children who are assimilated and integrated by

appointing a probation officer to carry out online guidance and supervision with the following stages:

1. Arrange a schedule for the implementation of guidance and supervision at least once a week for assimilation and 1 (one) month for integration;
2. Contact clients via media telephone calls, text, Whatsapp or video conference according to the arranged schedule to deliver guidance material as well as to supervise"
3. Fill in the records of client guidance results, client guidance attendance list and client supervision reports.

#### 3.2.1.3. Letter of Implementation of the Law and Human Rights Ministerial Regulation Number 32 of 2020 Concerning Terms and Procedures for Providing Assimilation, Parole, Leave to Freedom, and Conditional Leave for Prisoners and Children in the Context of Preventing and Combating the Spread of Covid-19

In point 7 of this regulation, it is stated that "Prisoners or children who receive assimilation, parole, leave before release and conditional leave are handed over to the Parole and Probation office who will carry out guidance and supervision in the city/district where assimilation, parole, leave before release and conditional leave are carried out via teleconference, and can also be done in person while still complying with the Covid-19 health protocol."

#### 3.2.1.4. Guidelines for the Implementation of Community Research and Online Assistance as well as Guidance and Supervision of Assimilation and Integration Clients in the Context of Covid-19 Spread Prevention & Control, drafted by the Directorate of Community Guidance and Child Alleviation in collaboration with the Center for Detention Studies

### 3.2.2. *The United States of America's Regulation*

In the United States of America, the use of technology in the supervision and mentoring of clients undergoing integration programs have been regulated in the US Code [14], including:

### 3.2.2.1 18 U.S. Code SUBCHAPTER B— PROBATION Code § 3117 concerning Mobile tracking devices which stated

In general, if a court is empowered to issue a warrant or other order for the installation of a mobile tracking device, such order may authorize the use of that device within the jurisdiction of the court, and outside that jurisdiction if the device is installed in that jurisdiction.

Definition. — As used in this section, the term “tracking device” means an electronic or mechanical device which permits the tracking of the movement of a person or object.

### 3.2.2.3. 34 U.S. Code § 20981 - Pilot program for monitoring sexual offenders

### 3.2.2.4. 49 U.S. Code § 31137 - Electronic logging devices and brake maintenance regulations

### 3.2.2.5. Pennsylvania Code (Rules and Regulations) Part VIII Criminal Sentencing § 305.3 - Sentence Risk Assessment Instrument standards

### 3.2.2.6. 34 U.S. Code Chapter 413 concerning Crime Reports and Statistics

### 3.2.2.7. Maine Code of Rules 03 - Corrections (03 201 and 03 208) Section IVa - Community Corrections: Home Release and Electronic Monitoring

## **3.2.3. The United Kingdom’s Regulation**

The United Kingdom as a more technologically advanced country has regulated the use of technology in the guidance and supervision system for clients undergoing reintegration programs even before the Covid-19 pandemic. These regulations include:

### 3.2.3.1. “The Compulsory Electronic Monitoring Licence Condition Order 2021” [15]

This regulation establishes the criteria of a client according to their offence and sentence that must be monitored using electronic monitoring, as well as the monitoring region, monitoring period, and the monitoring method. This regulation demonstrates the government’s determination to make the best use of this valuable technology, to reduce crime and protect the public by bearing down on repeat criminals who pose threats to the community.

### 3.2.3.2. The Parole Board Rules 2019 [16]

The Parole Board Rules 2019 went into effect on Monday, July 22nd, with the most significant change being the opportunity to request that a Parole Board decision be revisited. This rule allows a direct appeal to the parole board after a decision has been issued on the condition that there is evidence that the decision is procedurally unfair or irrational. This regulation also regulates the Implementation of Oral Hearing through video links, telephone conferences or other electronic means.

### 3.2.3.3. Code of Practice Electronic Monitoring Data [17]

Code of practice relating to the processing of personal data gathered in the course of electronic monitoring of a person serving community order or suspended sentence with an electronic monitoring requirement or as a part of a license on release from prison or youth detention accommodation. The issuing of this Code of Practice clarifies the expectations, safeguards and broad responsibilities for the collection, retention, processing and sharing of electronic monitoring data where it concerns personal data.

### 3.2.3.4. Standard and Ethic in Electronic Monitoring [18]

This handbook is intended as a policy guide and a management tool for those in charge of the establishment and the use of electronic monitoring. The text highlights important ethical standards in accordance with the Committee of Ministers of the Council of Europe’s Recommendation CM/Rec (2014) 4 on electronic monitoring and other Recommendations in the field of correction.

### 3.2.3.5. nDelius (National Delius) as regulated in Management of Offender Records[19]

This regulation which first came into effect on October 24th 2014, contains nDelius’ Operating Instruction along with its Policy and Strategic Context for action by National Probation Service (NPS) and Community Rehabilitation Companies (CRCs) both as the United Kingdom’s parole and probation agencies.

## **3.3. Parole and Probation Technologies**

Technology advancement has transformed the way we approach most of our daily tasks and activities, especially during this Covid-19 pandemic.

For instance, it affects how we apply for jobs, interactions with family and friends, access to government and other services, manage our finances and also our learning process is now supported by technology. In the correction field, to tackle the challenges posed by the Covid-19 pandemic some countries have integrated the use of advanced technologies that might help officers to better supervise individuals on parole or probation and enable those under supervision to better access services and programs.

Technology can greatly affect the intractable problem of recidivism in countless ways. The benefit of technology is that it can be customized to fit countless situations. Research in Florida funded by the National Institute of Justice discovered that a parole technology in the form of electronic monitoring decreases the risk of a parolee's failure under community supervision dramatically. The quantitative analysis showed that electronic monitoring reduces parolee's risk of failure by 31 percent across all types of offences and age ranges. The electronic monitoring program's primary objectives are to ensure that offenders follow the terms of their probation, track offenders, prevent recidivism, and protect the public. Other than monitoring devices, many parole probation agencies both in the USA and UK have employed the help of risk assessment software like LSI-R (Level of Service Inventory-Revised) to guide intervention and management plans. This risk assessment software developed by Multi-Health Systems crunches data to estimate the likelihood of a prisoner's re-offending and appears to reduce parolee recidivism by about 15% [20].

The use of technology in the correction field is seen as a more effective and less expensive alternative as the cost is significantly lower than that of imprisonment. The United States is a country with one of the highest incarceration rates in the world. Nearly one out of every 100 adults is in prison or jail, and one out of every 50 adults is on probation or parole [21]. In response to that, there has been an increase in the amount of improvement to the existing technologies and the development of new technology specifically created parole and probation in the United States of America. For instance, states now use technology in the form of electronic monitoring in a wide variety of settings, including Pre-Trial supervision as an alternative to detention, as an alternative to imprisonment and mandatory supervision as a requirement for parole programs [22]. So it is the case in the United Kingdom. Offenders newly released from prison were given a

choice between electronic monitoring through GPS tracking and intrusive police supervision.

When the Covid-19 pandemic broke out, technologies such as telephones and video conferencing calls became the safest way for Probation Officers to conduct contact with their clients. Now that mobile applications such as Skype, Zoom, or Whatsapp Video Calls have been developed, it is much easier for probation officers to communicate with clients, both for mandated self-report or for consultation sessions with clients. In the United States and the United Kingdom, telephone calls and video conferencing in Parole and Probation have been in practice even before the pandemic. Courts and government agencies in the United States have implemented the use of videoconferencing technology in post-conviction proceedings, including probation, parole and supervised release revocation hearings [23]. In response to the pandemic, some states have issued a video conference plan to coordinate scheduling, to give advance notice to the local facilities and to ensure video conferencing resource availability, all to ensure the best practice of parole and probation [24].

As for Indonesia, in response to the Covid-19 pandemic, The Directorate General of Corrections has issued a circular Number: PAS-20.PR.01.01, dated March 26, 2020, concerning the Progressive Steps in Combating the Spread of the Corona Disease Virus (Covid-19) in the Correctional Technical Implementation Unit. The Directorate General of Corrections in that Circular gave orders to the Parole and Probation office to optimize the use of video conferencing technologies in doing supervision and guidance and also to carry out community research activities and Parole Board hearings by applying the principle of social / physical distancing (minimizing physical contact).

In regards to that Circular, probation officers in West Jakarta's Class I Probation and Parole Office now primarily communicate with their clients via mobile apps like Whatsapp. In numerous ways, maximizing the use of technology through video conferencing, which has been done for more than a year, has improved the efficacy and efficiency of work execution. One of them is time efficiency. By using video conference calls, probation officers no longer need to travel for home visits to collect data for community research. Coordination and supervision can be done remotely, reducing the amount of time required to complete tasks.

Compared to other countries, the amount of technology being used in probation and parole

programs in Indonesia is still little. The existing technologies to ensure proper guidance and monitoring in Indonesia rely too much on the parolee's ability to operate a mobile phone or computer. It is also dependent on the parolee's awareness to comply with the parole and probation conditions. Mobile apps, web-based software and video conference calls may be the safest and most convenient option in this pandemic situation, but these methods are not enough. With just these methods without the tools to properly enforce the parolee's compliance, it is easy to lose track of how the parolee's doing after being released back into society, their whereabouts, or if they have relapsed back into their criminality.

Technology innovation is not always about the development of new technology. It can also involve improving existing technology, adapting technology from other sectors, or even simply adopting existing technology more broadly or using it more effectively [21]. This is also the case for Indonesia's correctional system. In this research, apart from the technologies mentioned above we have compiled the list of technologies being used in parole and probation services in each country as comparisons.

### *3.3.1. Parole and Probation Technologies in Indonesia*

#### *3.3.1.1. The Correctional Database System*

The Correctional Database System (SDP) is a monitoring and data management system for inmates that serves as a work aid for the Correctional Technical Implementation Unit, the Correctional Division, and the Directorate General of Corrections. The Correctional Database System is an information technology solution that encompasses all correctional business processes. The entire information system involves the processing, filtering, management, presentation, and communication of correctional information. SDP management is a cross-functional, administrative, organizational, and special implementation activity that ensures the SDP operates smoothly under the supervision of the Directorate General of Corrections. The Correctional Database System stores all information about inmates to aid decision-making in the exercise of their rights and to enhance service.

#### *3.3.1.2. Mobile apps, Web-based softwares developed by each correctional units under the Directorate General of Corrections*

There are various inventions developed by correctional units under the Directorate General of Corrections in the form of mobile apps or web-based software. One of them is SIMONAS (Monitoring System for Prisoners of Assimilation and Integration). SIMONAS is an application developed by the D.I. Yogyakarta Regional Office of the Ministry of Law and Human Rights and is designed to monitor clients from the time they are registered at The Parole and Probation Office until the end of their supervision period. This system is expected to make it easier for probation officers to carry out their responsibilities and activities in the sphere of the parolee's supervision [25].

Many of these mobile applications and web-based software made by each correctional unit are still in the early development stages and some are still hindered by the limited resources. In addition, the utilization has not been applied in all correctional units in a coordinated manner. However, there have been various efforts to conduct trials of the invention in other correctional units, as well as to disseminate these inventions as an effort to coordinate and integrate systems between units.

### *3.3.2. Parole and Probation Technologies in United States*

#### *3.3.2.1. Federal Bureau of Prisons' Inmate Database*

All inmates' data for those detained in federal prisons in the United States are managed by the Federal Bureau of Prisons (BOP). Anyone who breaks federal law and is sentenced to prison has a criminal record that reflects everything that has happened to them since their arrest. These records include the inmate's name and any aliases they use, as well as their age, race, gender, release date, and where they are being held, whether the inmate is on parole and all information regarding the inmate's convictions. The records are updated daily and under the Freedom of Information Act are open to the public, which means it allows the public to acquire additional information about the inmate's convictions [26].

### 3.3.2.2. Integration of Crime Data and GPS Location Data

The amount of data generated by GPS-based offender tracking is enormous. Until recently, community corrections departments were the sole users of this data to decide if prisoners were abiding by their probation conditions. In terms of the amount of useful knowledge provided about the offender, GPS-based monitoring represented an exponential improvement over radio-frequency-based monitoring. Technology developers have developed the ability to merge and compare recorded crime incident data with offender location data in order to make better use of the latest and efficient information access.

Obtained data about the offender's location and crime is then transmitted to a central server daily, where the time and location data points are analyzed. Regularly, data about the offender's position and crime is sent to a central server, where the time and location data points are analyzed. When it's determined that an offender was in the vicinity of a recorded crime at the time the crime was committed, automated warnings are sent out. This type of system aims to achieve two main objectives. According to the theory, the first is to deter violence by making criminals more accountable. Offenders are less likely to commit a crime if they know they will be immediately put at the scene of the crime. The second goal is to give law enforcement and corrections agencies a powerful investigative method in which to control their resources [27].

### 3.3.2.3. Risk Assessment Software

The United States of America, in the practice of Parole and Probation, has employed the help of a risk assessment software which crunches data to estimate the likelihood a prisoner will re-offend. LSI-R and LS-CMI, programs developed by a Canadian company called Multi-Health System, appear to have reduced parolee recidivism by about 15%. They were used to assess 775.000 parole applicants in the United States in 2012.

The assessment requires information such as the prisoner's age at the time of his arrest, his education, the nature of his crime, his behavior in prison, his friends' criminal records, the results of a psychometric test, and even his mother's sobriety while he was in the womb. By comparing the inmate's profile to that of several others, the programs estimate the likelihood of a relapse [20].

### 3.3.2.4. Indoor Location Tracking

The use of the global positioning system (GPS) to track criminals was first introduced in 1997 and has since gotten a lot of coverage. Since the murder of 9 years old Jessica Lunsford by a convicted sex offender who lived nearby in March 2005, at least 17 states have enacted legislation requiring sex offenders to use GPS-based tracking technology. Some states, such as Florida, Oklahoma and Ohio are using this technology to keep track of certain offenders for the rest of their lives.

GPS-based monitoring is effective in tracking offenders' movement in open areas. Moreover, exclusion zones may be set around certain places such as schools, public pools, and the victim's residence [27].

### 3.3.2.5. Near Infrared Spectroscopy

A diffuse reflectance near-infrared (NIR) spectrometer was evaluated as a non-invasive alternative to breath and blood measurements for in vivo alcohol testing. This technology analyzes the chemical composition of the tissue and measures alcohol levels using a light source, an optical detector, and a spectrometer. The results will be available in one minute and will be equivalent to more traditional alcohol monitoring methods such as breathalyzer and blood tests [28].

### 3.3.2.6. Biometric Kiosks

As inmates are released from prison in order to alleviate the public health and humanitarian threat posed by the coronavirus to a confined population, some cities in the USA, such as Minneapolis, are employing biometric technology kiosks with electronic check-in systems to replace riskier face-to-face meetings. Newly-released inmates and those on probation can use these kiosks to arrange meetings and trigger reminder text and emails. This technology uses fingerprint recognition to verify a user's identity and capture photos, video footage. It is also equipped with a built-in breathalyzer to ensure inmates' compliance with court-mandated alcohol restrictions [29].

### 3.3.2.7. Monitoring Sex Offenders' Computer

The management and monitoring of sex offenders' computer use is important for many reasons, including the three mentioned below:

1. To notify authorities of a new crime, such as the possession of children's pornography



2. To ensure adequate monitoring and confinement of offenders, both by reinforcing care prohibitions against access to sexual content and by lowering community risk by increasing the offender's understanding of confinement.
3. To better the treatment agency's understanding of the offender

### 3.3.2.8. Driver Monitoring System

The License Sanction Enforcement System is essentially a monitoring device that senses and records a subject's body movements or data signatures, then compares them to data signatures that are compatible with those involved in driving a vehicle. This system requires ankle bracelets with accelerometers and rate gyros worn on each leg. The development of this system is motivated by recent studies revealing that up to 75% of all drivers with suspended or revoked licenses continue to drive.

This technology represents a pragmatic solution to a prolonged problem in the criminal justice system, because instead of only the human, the system now actively monitors the vehicle.

### 3.3.2.9. Sleep Pattern Analysis

Information related to sleep patterns is also used as supporting data to determine the inmate's general well-being. Although the connection between sleep patterns and drug abuse may not be apparent at first, but if looked at closely drug abuse can cause sleep problems in a variety of ways. It can, for example, interrupt the sequence and duration of sleep states, alter total sleep time and lengthen the time it takes to fall asleep.

Data is obtained from a small actigraphy device that is secured around the offender's wrist with a tamper-evident band. The actigraphy system records gross motor activity to determine the sleep quality. With this device, it is possible to track and assess a person's sleep/wake cycles and sleep disturbances, which may be caused by drug abuse. When the offender reports to his or her probation office or the court, the device is inserted into a reader, and the offender's activity data is downloaded and analyzed by advanced Web-based software that is designed to search for patterns that differ from those of abstinent subjects [27].

## *3.3.3. Parole and Probation Technologies in United Kingdom*

### 3.3.3.1. nDelius (National Delius)

nDelius is a browser-based, national probation service case management system, designed to include the required probation business logic and appropriate security. It contains all adult offender-related information, pre-sentence, community orders, custodial sentences pre and post-release, offenders in approved premises and some young offenders with UPW requirements.

### 3.3.3.2. Risk Assessment Technology

The probation and prison services across the country use a system called the Offender Assessment System (OASys) for assessing the risks and needs of an offender. As an integral part of the work probation officers do in assessing offenders, OASys is designed to help practitioners make sound and defensible decisions in determining the risk offenders pose and how to tackle their offending behaviour effectively. OASys is designed to assess two types of risk:

1. The likelihood of future re-offending and re-conviction within two years
2. The probability that if an offender is reconvicted, the offence will be one of serious harm

Probation and prison services in the United Kingdom view assessment as a process that must be continually carried out throughout the sentence. OASys plays a part as a tool to re-assess offenders at various points during their sentence and to measure how they have changed [30].

### 3.3.3.3. Electronic Monitoring

The UK currently uses Electronic Monitoring in two ways; the Curfew Order, which is a sentence to be used on its own or in conjunction with other community penalties, and the Home Detention Curfew (HDC), which enables eligible prisoners to be released early under license. EM comprises a radio transmitter worn by the prisoner, which transmits a signal to a base unit within the home. If the signal is broken a central computer is alerted and relevant authorities are informed [31].

Evidence suggested that EM was being used as an additional sentence rather than merely as an alternative to custody. Berg stated that monitoring should be combined with other sentences and that the

punishment aspect of monitoring should not be overlooked. He concluded 'It can and should, in my view, become an integral part of the sentencing menu.

#### 3.3.3.4. Biometric Kiosks

Biometrics-based offender supervision is currently in operation in many jurisdictions around the world, one of which is in the United Kingdom. Supervised prisoners who have implied with the early stages of their parole or probation are given the option of reporting to an electronic kiosk instead of seeing a probation officer. When an offender checks in, they must first undergo a fingerprint recognition scan to ensure that no one else is checking in on their behalf. They may then provide any necessary details, receive instructions, or arrange a face-to-face meeting with an officer.

## 4. CONCLUSION

Based on the research, it can be concluded that compared to the United States of America and the United Kingdom, Indonesia still lacks the technology to support parole and probation programs, especially in this pandemic situation where due to the lockdowns, physical contact is limited. In addition, the existing technologies currently used in Indonesia are still insufficient to support the program. For one, Video Conference calls (Whatsapp Video Call) for the mandated regular check-ins with the probation officer are carried out without clear guidelines for Probation Officers on how to provide proper guidance and monitoring for parolees through video conference calls. Secondly, The Correctional Database system is still not efficient because of the absence of an integrated criminal record to determine the recidivism rate in Indonesia. Other than that, most Web-based software and mobile apps made by each correctional unit under the Directorate General of Corrections are still in the early development stages and some are still hindered by the limited resources. The utilization has also not been applied in all correctional units in a coordinated manner.

Moreover, the use of technology in Indonesia, particularly in the correctional sector, has yet to be regulated in more detailed regulations. Despite the fact that Indonesia has passed Law Number 11 of 2019 concerning the National System of Science and Technology, regulations on the use of technology in the correctional sector are still very limited.

To increase digital literacy in Indonesia, improvements need improvement needs to be done in

the field of education and economy to increase digital literacy in Indonesia. The government also needs to issue clear legal foundations that contain guidelines, especially for probation officers in providing guidance and monitoring to parolees through the use of technology. Last but not least, the government of Indonesia needs to make provision of adequate facilities and infrastructure to support the parole and probation program and to also improve the existing technology.

To anticipate the future emergency situation, Indonesia needs to optimize the use of technology by enhancing demographic quality, establishing clear legal foundations and providing adequate facilities to optimize technology use in probation and parole practice. As for future research, it would be appropriate to study the most suitable Parole and Probation technology to be implemented in Indonesia in regards to the socio-economic and cultural background.

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