

## "The Use of Drones: From the Perspective of Regulation and National Defense and Security"

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**Abstract:** Aerospace technology is developing very rapidly, especially in the field of drone technology. The term drone usually refers to an unmanned aircraft, or in other words referred to an Unmanned Aerial Vehicle (UAV). Nowadays, drones can perform an impressive range of tasks, from military operations to helping human life, and as of size, drone can be as big as an airplane or even as small as the palm of your hand. This growing use of drones requires an arrangement for their operation. It is also necessary to have clarity about the Ministries or Government Institutions given the clear authority in granting permits and supervision for drone operations so that there is no ambiguity and overlapping of authority. For this reason, regulations or statutory regulations are needed to ensure the interests of aviation safety and national defense and security. This paper will review the drone arrangements for the interest of both civilian and military purposes. The method used is mapping regulation, namely by studying the regulations related to drones and literature study for the theory and expert opinion published in books, journals, and other sources; and a resume of the results of the implementation of a focus group discussion involving experts in the field of drone technology. The existing statutory regulations to the subject of drones seems not to have accommodated the public interest as well as the interests of defense and security. Drone settings are still limited to flight safety aspects with the aim of drone flights not endangering the safety of civil aviation. The substance that needs to be considered in drone settings is that the use of drones must also consider aspects of welfare and aspects of national defense and security

**Keywords:** History of Drone, Operational of Drone, Regulation of Drone, National Defense and Security

### 1. Introduction

The development of aerospace technology is growing very rapidly with the emergence of various types and forms, especially in the field of drone technology. The use of drone is both for peaceful purposes and to support military operations.[1] A UAV is an unmanned or unmanned aircraft that can fly using remotely controlled aerodynamic power or programmed to reach a specific target and is equipped with cameras, sensors, communication devices, and other devices. The current utilization of UAVs is very diverse such as for surveying, shooting, weather monitoring and various other interests, both for military and non-military interests even for commercial purposes. [2]

In accordance with the understanding stated in Government Regulation No. 4 of 2018 on Airspace Security, it is defined that An Unmanned Aircraft is an aircraft that functions with remote control by an aviator or can control itself using aerodynamic laws. [3] It is known for naming drones with various terms such as UAV, Remotely Piloted Aircraft (RPA), Remotely Piloted Vehicle (RPV), Remotely Operated Aircraft (ROA) and UAS.[4] Drone utilization to become a public discussion because it was widely used both for military and non-military purposes including for commercial or business purposes. [5] The use of drones is very prevalent and very potential to be a threat to the defense of the country because drones can be used to carry out attacks on various target objects on the surface.[6] To prevent unintended impacts in both aspects of state defense and aviation safety, it is necessary to decide for the use of drones.

Various problems that caused by using of drones in Indonesian airspace include:

1. **Violation of Indonesian airspace by foreign drones.** On March 31, 2016, a captain of the Ocean-9 Bypass Ship, Captain Lambok Tampubolon, found the drone on position just about 1 mile from Batam Center's International Ferry Port. After an investigation, the drone was apparently equipped with antennas and cameras and was a British-made drone that began production in 1983. This drone has a speed of 35-185 Kts with a cruising power of between 1-3 hours. The flight control is using a long-distance remote. In its operation the drone can also be equipped with enhancements such as radar, flares or husks or target arm. Based on these incidents, it is feared that in the future there will be more violations of airspace by foreign drones because there is a tendency to increase the use of drones for military and non-military purposes.

2. **Threats to VVIP and vital objects.** Drones can also be a threat to the defense of the country, especially against the implementation of VVIP and can also be used to destroy vital objects. The drone incident that was revealed during the Visit of the President of the Republic of Indonesia in Ponorogo on January 4, 2019. On June 20, 2019, a drone flying over the Constitutional Court building and 1st Ring Area of the State Palace was shot

down, a drone also crashed in the Borobudur Temple area, Magelang Regency, Central Java on October 20, 2020, as well as a drone that crashed on July 21, 2015 at BCA tower in Jakarta with the contents of several vital objects in Jakarta. There are many more drone disturbances to VVIP and vital objects occurring in Indonesia. Therefore, it is necessary to prevent and adjust efforts so that the task of securing VVIP and securing vital objects can be carried out safely.

3. **Drone regulations in Indonesia.** Until now, drone regulations in Indonesia are still limited to aspects of aviation safety only with the aim that drone flights do not endanger aviation safety and have not touched on the substance to be considered in drone settings i.e., the use of drones must also consider aspects of welfare and aspects of National Defense and Security. Aspects of national defense and security are certainly related to the occurrence of various potential violations of airspace both in the form of hostile intent and hostile act carried out using aerial vehicles in the form of drones.

Regarding the increasingly prevalent use of drones in various countries until now it has not a specific arrangement. Therefore, there needs to be a thought of how the arrangement of drone operations that can be enabled to prosper the people although on the other hand can potentially be a threat to the national defense and security. This encourages researchers to conduct research on the provisions of aviation regulation and collect relevant provisions to be used as a legal basis in the operation of unmanned aircraft. Thus, the author chose the research under the title "*The Use of Drones: From the Perspective of Regulation and National Defense and Security*".

A. Formulation of the Problem. Problem formulation is important in a because problem formulation will help researchers to identify issues to be researched and will direct research in accordance with research objectives. From the explanation above, the researchers formulated the problems that will be examined, namely:

1 How drone regulations are viewed from international conventions and national legislation?

2 How to set up drones that accommodate the public interest as well as the interests of the national defense and security.

B. Research Objectives. The objectives of this research are:

1 To find out how the regulation of drone operation in accordance with international conventions and Indonesia national legislation.

2 To identify how to set up a useful drone that can guarantee the public and military interests that is in terms of national defense and security.

## 2. Research method.

The research method used is empirical research that examines the provisions of the applicable regulation and then conducts regulation mapping related to drones by conducting literature studies that study the theories and expert opinions contained in books, journals, and other sources; as well as the results of the implementation of focus group discussions involving experts in the field of regulation and drone technology.

## 3. The Results Of The Research

A. **Legal understanding of drones.** According to Annex 2 of the Chicago Convention 1944 established the definition of an aircraft is any engine that has lift to the atmosphere from an aerial reaction and not from an air friction reaction with the earth's surface.[7] The same is stated in Constitution No. 1 of 2009 which states that an aircraft is any engine or device that can fly in the atmosphere due to the lifting force of the air reaction, but not because of the air reaction to the earth's surface used for flight.[8] From this definition, drones are legally aircraft, so the arrangements are subject to the 1944 Chicago Convention on civilian drones and for state (military) drones subject to national aviation legislation that must consider civil aviation safety.

### B. Regulation of drone operation.

1. **The arrangements for drones under international regulation are:**

a. **Under Section 8 of the Chicago Convention 1944**, pilotless aircraft are not permitted to fly over or land on the territory of any other country without the special permission of the country to pass or land.[7] Unmanned aircraft flights in areas open to civil aviation should be monitored, so as not to jeopardize the navigational safety of civilian aircraft.

b. **Circular of ICAO Number Cir 328 AN/190 of 2011** concerning UAS which regulates unmanned aircraft flight to ensure flight safety.[9]

c. **ICAO Doc. 10019 Remotely Piloted Aircraft system (RPAS).** This document provides the procedures and guidance to facilitate safe, secure, and efficient integration of remotely piloted aircraft (RPA) into non-segregated airspace and aerodromes. Also, to maintain the existing level of safety for manned aviation priority is instrument flight rules (IFR) operation in controlled airspace.[10]

d. **ICAO APUAS Task Force Recommendation.** Asia/Pacific Unmanned Aircraft System Task Force. This task force provides background information, principles, and regulatory considerations for the development of State regulations for the operation of UAS within national airspace systems.[11]

e. **JARUS Recommendation.** Joint Authorities for Rulemaking on Unmanned Systems that organizational for safety management, security, and training.[12] JARUS propose technical requirements and administrative procedures for civil use of Unmanned Aircraft covering three processes:

1) Registration and identification of UAS intended for civil use, having a mass of 250 grams or more.

2) Rules for operation of UAS not in the scope of ICAO SARPs, in two categories:

a) Category A - Operations of UA of less than 25 kg maximum take-off mass (MTOM), subject to proportionate operational limitations and requirements, in which the NAA is involved only for registration process.

b) Category B - Operations of UA (autonomous or remotely piloted) subject to a process of declaration or authorization, based on a risk assessment (SORA), or in accordance with UOC (UAS Operator Certificate).

3) Rules for Unmanned Aircraft to access airspace.[12]

## 2. Arrangements for drones under regulation in Indonesia are:

**Constitution No. 1 of 2009** about Aviation. Violation of the provision is threatened with criminal sanctions in Constitution No. 1 of 2009 on Aviation.[8] The Indonesia National Armed Forces, sanctions for unmanned aircraft systems operated in restricted airspace and prohibited airspace.

b. **The Government Regulations No.4 of 2018 Airspace Security in Republic of Indonesia.** Article 27 states that unmanned foreign aircraft are violating the sovereign territory of the Republic of Indonesia carried out the act of using weapons.[3] Unmanned Aircraft in violation of the provision prohibited air areas and areas restricted air (restricted area) the final action in accordance with the provisions of the regulation's legislation.[13]

**The Regulation of the Minister of Transportation No. 37 of 2020.** This regulation concerning control of the operation of unmanned aircraft in airspace served by Indonesia issued on June 2, 2020.[14] Where the material of the Ministerial Regulation focuses on operation of unmanned aircraft in airspace which are served in the form of:

1) Controlled Airspace must have approval Directorate General of Civil Aviation.

2) Uncontrolled Airspace, with the following conditions: Operation at altitudes starting from ground level up to an altitude of 400 feet (120 m) without the approval of the Directorate General of Civil Aviation. Operation at altitudes above 400 feet (120 m) must have approval from Directorate General of Civil Aviation.

c. **Regulation of the Minister of Transportation No. 163 of 2015** about Civil Aviation Safety Regulation Section 107 concerning Small Unmanned Aircraft System, regulates small drones.[15]

3. **Drone arrangements against national defense and security**, are briefly regulated in:

a. Article 27 paragraph (4) of Government Regulation No. 4 of 2018 concerning Airspace Security determines that unmanned Foreign Aircraft that violate the sovereignty of the Republic of Indonesia are carried out acts of use of weapons.[3]

b. The decision of Commander of National Air Defense Command Number KEP/108/XI/2015 concerning Fixed Procedures for Air Defense Operations the National Air Defense Command mentions the threat of sovereignty in the air is all unknown vehicles that use air media as its trajectory and can be manned or UAV that threaten national sovereignty.

c. In the Rule of Engagement (RoE) National Air Defense Command as operational strata RoE which is an attachment of the Operation Plan/Operations Order determines against unmanned aircraft that commit violations can be justified the use of weapons.

**Implementation of drone arrangements by Indonesian Air Navigation.** Currently operational drone licensing is submitted to Indonesian Airnav for operational drones with an altitude below 400 feet (120 m).[14] Online licensing is addressed to Airnav and the Indonesia Drone Pilots Association, including to National Air Defense Command to accommodate air defense interests.

#### 4. The discussion.

Based on the explanation above can be conveyed the discussion as follows:

##### **ARegulation of the Operation of drones is reviewed from the International Convention.**

1. **Chicago Convention The 1944.** Legal Aspects of Operation of Unmanned Aircraft (Drones) based on the International Convention where the 1944 Chicago Convention as the primary legal material, which is the reference in this study, does not specifically regulate drone operation. The 1944 Chicago Convention only stipulates the classification of aircraft into civil aircraft and state aircraft and here there are no drones. This convention also only regulates the use of air space by civil aircraft which does not apply to state aircraft and drones. So that the operation of state aircraft and drones is subject to the national regulation of each country participating in the convention if they continue to pay attention to the safety of civil aircraft. Consequently, all participating countries must make regulation that coordinate the operations of civil aircraft and state aircraft as well as drones to ensure flight safety.

Another important requirement to fulfill in drone operation is the airworthiness of the drone. Article 31 of the 1944 Chicago Convention provides as follows: "Every aircraft engaged in international navigation shall be provided with a certificate of airworthiness issued or rendered valid by the State in which it is registered." Considering that drones are aircraft with special characteristics, the regulations regarding airworthiness in drone operation can be determined based on the national regulation of each country participating in the convention.

2. **Circular of ICAO Number Cir 328 AN/190 of 2011** concerning UAS which regulates unmanned aircraft flight to ensure flight safety. UAS will operate in accordance with ICAO Standards that exist for manned aircraft as well as any special and specific standards that address the operational, legal and safety differences between manned and unmanned aircraft operations. For UAS to integrate into non-segregated airspace and at non-segregated aerodromes, there shall be a pilot responsible for the UAS operation. Pilots may utilize equipment such as an autopilot to assist in the performance of their duties; however, under no circumstances will the pilot responsibility be replaced by technologies in the foreseeable future. Aircraft operating without a pilot on board present a wide array of hazards to the civil aviation system. These hazards must be identified, and the safety risks mitigated, just as with introduction of an airspace redesign, new equipment, or procedures. UAS will be required to comply with existing regulations; however, there will be aspects which must be addressed differently because of not having a pilot on board the aircraft. For these cases, the authority will have to determine if an alternate means of compliance is possible to achieve the same safety level. In this document, it does not mention the existence of UAVs that have the potential to threaten national security and focus more on aviation safety.

3. **ICAO Doc. 10019 Remotely Piloted Aircraft system.** This document provides the procedures and guidance to facilitate safe, secure, and efficient integration of remotely piloted aircraft (RPA) into non-segregated airspace and aerodromes. Also, to maintain the existing level of safety for manned aviation priority is instrument flight rules (IFR) operation in controlled airspace. Develop Standards and Recommended Practices (SARPs), procedures and guidance to facilitate safe, secure, and efficient integration of remotely piloted aircraft (RPA) into non-segregated airspace and aerodromes. Maintain the existing level of safety for manned aviation. Priority is instrument flight rules (IFR) operation in controlled airspace. In this document, it does not mention the existence of UAVs that have the potential to threaten national security and focus more on aviation safety.

4. **ICAO APUAS Task Force Recommendation.** Asia/Pacific Unmanned Aircraft System Task Force. This task force provides background information, principles, and regulatory considerations for the development of State regulations for the operation of UAS within national airspace systems. The document does not provide guidance or information on non-Air Traffic Management (ATM)-related aspects of the regulation of UAS, such privacy, public safety and security, or commercial considerations, which fall outside the scope of the APUAS/TF Terms of Reference. States should take their own internal action to coordinate such matters with the relevant authorities. In this document, it does not mention the existence of UAVs that have the potential to threaten national security and focus more on aviation safety.

5 **JARUS Recommendation.** Joint Authorities for Rulemaking on Unmanned Systems that organizational for safety management, security, and training. JARUS propose technical requirements and administrative procedures for civil use of Unmanned Aircraft. The rules for Unmanned Aircraft to access airspace. States shall ensure that each UAS placed on the market is accompanied by an 'awareness leaflet', or equivalent electronic means, to raise the attention of the consumer about the risks related to UAS Operations and provide information about the applicable legislation on aviation safety, security, privacy and data protection, liability, and insurance. In this regulation applicable in state of the operation, those related to safety, privacy, data protection, liability, insurance, security, and environmental protection. This document mention security only with out any explanation and do not have the potential to threaten national security and focus more on aviation safety.

**B. Legal Aspects of Drone Operation under National Legislation.**

1. **Constitution No. 1 of 2009 about Aviation.** Violation of the provision is threatened with criminal sanctions in Constitution No. 1 of 2009 on Aviation. The Indonesia National Armed Forces, sanctions for unmanned aircraft systems operated in restricted airspace and prohibited airspace. 2. **The Government Regulations No.4 of 2018 Airspace Security in Republic of Indonesia.** Article 27 states that unmanned foreign aircraft are violating the sovereign territory of the Republic of Indonesia carried out the act of using weapons. Unmanned Aircraft in violation of the provision prohibited air areas and areas restricted air (restricted area) the final action in accordance with the provisions of the regulation's legislation.

3. **Regulation of the Minister of Transportation No. 37 of 2020.** On June 2, 2020, the Minister of Transportation No. 37 of 2020 concerning Control of The Operation of Unmanned Aircraft in airspace Served by Indonesia. In general, the Ministerial Regulation regulates the requirements, limitations, and licensing for the operation of unmanned aircraft. Regulation of the Minister of Transportation No. 37 of 2020 is the implementation of the mandate of Constitution No. 1 of 2009 on Aviation clearly stipulates that unmanned aircraft may not be operated in a prohibited air area, a restricted air area, and an airport flight operation safety area. This provision is an implementation of the provisions of Article 3 of the 1944 Chicago Convention. Referring to Article 3, basically the 1944 Chicago Convention only regulates civil aircraft and if a country participating in the convention makes regulations regarding the operation of state aircraft, it must pay attention to the safety of civil aircraft. In accordance with the definition that is included in the category of aircraft, drone management is subject to the provisions governing aircraft, namely for civil aircraft subject to the Chicago Convention and the regulation of flight traffic in Indonesian airspace is carried out by Indonesian Airnav. Meanwhile, the arrangements for state drones are subject to the provisions of national legislation, to date in Indonesia there is no explicit provision that regulates drones from the aspect of national defense. Currently, various existing arrangements are only based on aviation safety aspects issued by the Ministry of Transportation.

4. **The Regulation of the Minister of Transportation No. 163 of 2015** concerning Civil Aviation Safety Regulation Section 107 concerning Small Unmanned Aircraft System, regulates small drones. This regulation focus on registration, certification, and civil small, unmanned aircraft system airworthiness directives. This regulation does not explain in detail the operation of the drone.

C. **Drone arrangements are in the public interest.** The implementation of drone arrangements is carried out by Indonesian Airnav. Currently operational drone licensing is submitted to Indonesian Airnav for operational drones with an altitude below 400 feet (120 m). Online licensing to Airnav and the Indonesia Drone Pilots Association includes to National Air Defense Command to accommodate air defense interests.

D. **Setting up drones for the benefit of the national defense and security.** Briefly it is regulated in: Article 27 paragraph (4) Government Regulation Number 4 of 2018 concerning Airspace Security determines that unmanned Foreign State Aircraft violating the sovereign territory of the Republic of Indonesia is subject to the use of weapons. The Commander of National Air Defense Command Decree Number KEP/108/XI/2015 concerning Fixed Procedures for Air Defense Operations of the National Air Defense Command mentions air threats are all unknown vehicles that use air media as its trajectory and can be manned or unmanned aerial vehicles that threaten national sovereignty. In the Rule of Engagement (RoE) National Air Defense Command as RoE operational strata which is an attachment of the Operation Plan/Operations Order determines against drones that commit violations can be justified the use of weapons.

E. **Drones can potentially be a threat to the national defense and security.** The use of drones is growing rapidly with very far cruising power with altitudes that exceed the capabilities of aircraft and across various regions of the country. With the development of such technology, causing potential air violations by foreign drones is very large and endangers the defense of the country. The development of the use of drones can also be used to destroy the target of national vital objects as well as a means of committing various criminal acts to replace the role of humans. Therefore, it is necessary to implement drone regulations associated with air defense and public safety so as not to cause more complex problems. The arrangement includes the authority and responsibility of an agency in carrying out the crackdown on drones.

F. **Regulations issued by the Ministry of Transportation and determine the Indonesia National Arm Forces** is authorized to take coercion to exit the area or airspace or up to the dropping of unmanned aircraft, is not appropriate because the Ministry of Transportation does not have the authority to give such authority, should the appropriate arrangement be a Government Regulation. In addition, there are no arrangements in the Indonesia National Arm Forces environment about which unit is authorized to carry out such actions, as well as the type of weaponry will be used whether using an aircraft or other weapon. In this case there is a legal void in the regulation of actions against drones flying in restricted airspace and prohibited airspace.

G. **Arrangements on air threats** that can be made by air vehicles in the form of drones are still regulated briefly in the legislation, for example in Government Regulation on Airspace Security which determines the authority to use weapons for foreign drones that commit airspace violations. There needs to be a provision as a follow-up to the Government Regulation on Airspace Security by giving destruction authority to National Air Defense Command in accordance with its main task in carrying out air defense operations.

H. **The arrangement of drones in relation to air defense** is limited in Government Regulation on Airspace Security for the suppression of foreign drones and in Fix Procedure of Air Defense as well as the Rules of Engagement of National Air Defense Command but has not set out in detail which drones are the responsibility of National Air Defense Command and the enforcement procedures have not been clearly regulated. It is necessary to implement restrictions on the classification of drones that are the responsibility of monitoring National Air Defense Command associated with air defense and which are the responsibility of other agencies related to the potential use of drones to commit criminal acts and other illegal activities.

## 5. Conclusion.

**From the explanation above, it can be concluded as follows:**

Reviewed from the International Convention, the regulation of drone operations is based on the Chicago Convention 1944 as the primary legal material, but not specifically regulate drone operation. Circular of ICAO Number Cir 328 AN/190 of 2011 concerning UAS which regulates unmanned aircraft flight to ensure flight safety. ICAO Doc. 10019 Remotely Piloted Aircraft system. This document provides the procedures and guidance to facilitate safe, secure, and efficient integration of remotely piloted aircraft into non-segregated airspace and aerodromes. It does not mention the existence of RPA that have the potential to threaten security and focus more on aviation safety. ICAO APUAS TF Recommendation an Asia/Pacific Unmanned Aircraft System Task Force. This task force provides background information, principles, and regulatory considerations for the development of State regulations for the operation of UAS within national airspace systems. The document does not provide guidance or information related aspects of the regulation of UAS, such privacy, public safety and security, or commercial considerations. JARUS Recommendation is Joint Authorities for Rulemaking on Unmanned Systems that organizational for safety management, security, and training. In this regulation applicable in state of the operation, those related to safety, privacy, data protection, liability, insurance, security, and environmental protection. All the regulation is focus on aviation safety only and have not touched on the substance of welfare and National Defense and Security aspects.

B. Based on national legislation aspects for drone operation the Constitution No. 1 of 2009 about Aviation. Violation of the provision is threatened with criminal sanctions and the Indonesia National Armed Forces, sanctions for unmanned aircraft systems operated in restricted airspace and prohibited airspace. The Government Regulations No.4 of 2018 Airspace Security in Republic of Indonesia that unmanned foreign aircraft are violating the sovereign territory of the Republic of Indonesia carried out the act of using weapons and unmanned Aircraft in violation of the provision prohibited air areas and areas restricted air (restricted area) the final action in accordance with the provisions of the regulation's legislation. Regulation of the Minister of Transportation No. 37 of 2020 concerning control of the operation of unmanned aircraft in airspace served by Indonesia and the Regulation of the Minister of Transportation No. 163 of 2015 concerning Civil Aviation Safety Regulation Section 107 concerning Small Unmanned Aircraft System, regulates small drones. All these regulations focus on registration, certification, and civil small, unmanned aircraft system airworthiness directives. The regulation concerns the requirements, limitations, and licensing for the operation of unmanned aircraft. Unmanned aircraft may not be operated in a prohibited air area, a restricted air area, and an airport flight operation safety area.

C. The implementation of drone arrangements in the public interest is carried out by Indonesian Airnav. The licensing is submitted to Indonesian Airnav for operational drones, the Indonesia Drone Pilots Association and National Air Defense Command to accommodate air defense interests.

D. To regulate unmanned aircraft related to the national defense and security based on the Government Regulation Number 4 of 2018 that unmanned Foreign State Aircraft violating the sovereign territory of the Republic of Indonesia is subject to the use of weapons, and for air defense operations of the National Air Defense Command mentions air threats are all unknown vehicles that use air media as its trajectory and can be manned or UAV that threaten national sovereignty. This rule based on the Commander of National Air Defense Command Decree Number KEP/108/XI/2015 concerning Fixed Procedures for Air Defense and application with RoE.

E. The development of the use of drones can also be used to destroy the target of national vital objects as well as a means of committing various criminal acts to replace the role of humans. So, the drones can potentially be a threat to the national defense and security. Therefore, it is necessary to implement drone regulations

associated with air defense and public safety so as not to cause more complex problems. The arrangement includes the authority and responsibility of an agency in carrying out the crackdown on drones.

It is not appropriate the Ministry of Transportation to give such authority to the Indonesia National Arm Forces to take coercion to exit the area or airspace or up to the dropping of unmanned aircraft. It should the appropriate arrangement be a Government Regulation include the Indonesia National Arm Forces authorized to carry out such actions, as well as the type of weaponry will be used whether using an aircraft or other weapon.

G. There needs to be a provision as a follow-up to the Government Regulation on Airspace Security by giving destruction authority to National Air Defense Command in accordance with its main task in carrying out air defense operations and the classification of drones that are the responsibility of monitored by National Air Defense Command associated with air defense and which are the responsibility of other agencies related to the potential use of drones to commit criminal acts and other illegal activities. The National Air Defense Command uses only the internal fix procedure and RoE which are made by the Indonesia National Arm Forces internally. This could result in a violation of the regulation for it to be required a strong legal basis at the level of Government Regulation.

## **6. Recommendations.**

From the results of this research, recommendations can be submitted as follows:

A. It is necessary to establish The National Air Defense Command authority in drone surveillance with restrictions which include what if a foreign drone overflying Indonesia's national airspace, how to protect VVIP and secure national vital objects from attacks using drone, how to monitor drones for altitude above 400 feet where the licensing procedure is carried out by Directorate General of Civil Aviation and below 400 feet where licensing by Indonesian Airnav.

B. There needs to be a provision governing drones used for business/commercial purposes and if misused to commit crimes, the supervisory authority is carried out by the territorial apparatus and the National Police, especially in relation to the use of drones to commit various criminal acts.

C. It is necessary to implement the revision of the Fixed Air Defense Procedure by including provisions on the authority of drone surveillance accompanied by suppression procedures. This arrangement is a first step before the existence of drone regulation in the national defense and security and as a basis for acting in carrying out air defense operations.

D. There needs to be efforts from the relevant Ministry to immediately prepare legislation related to drones in terms of national defense and security and make the regulation a priority to be realized

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