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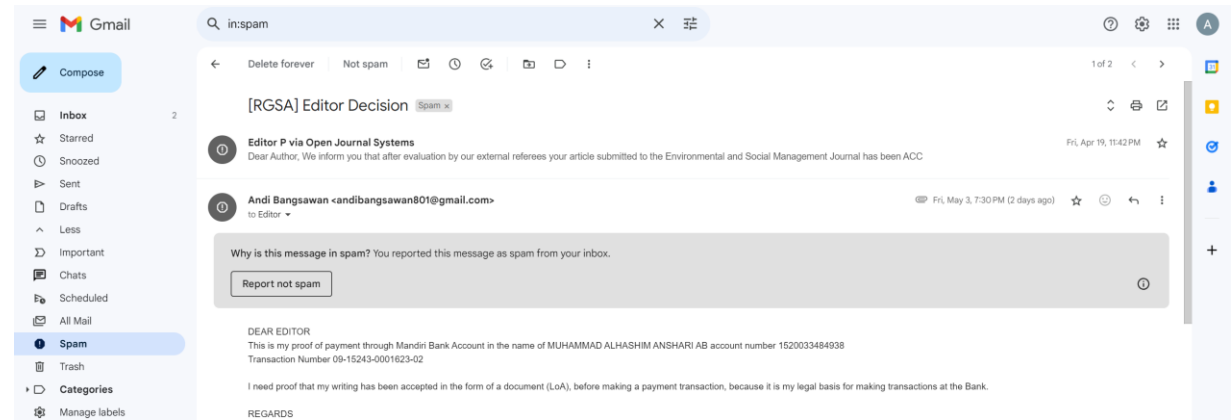
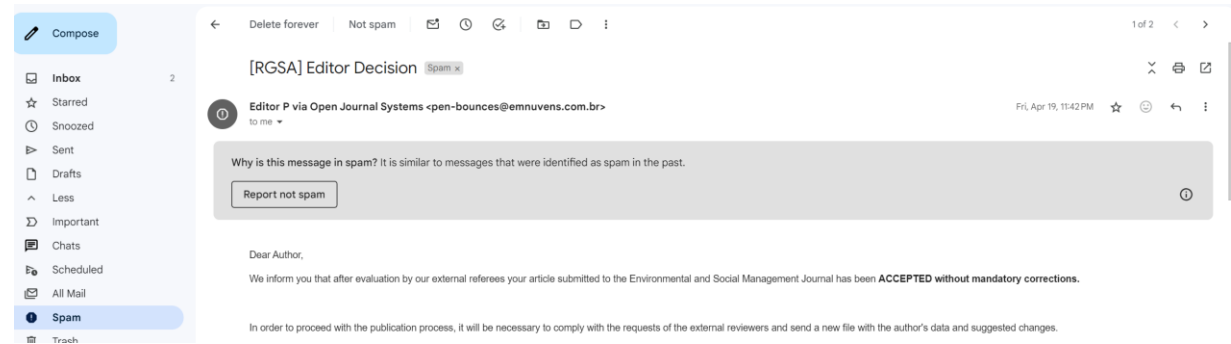
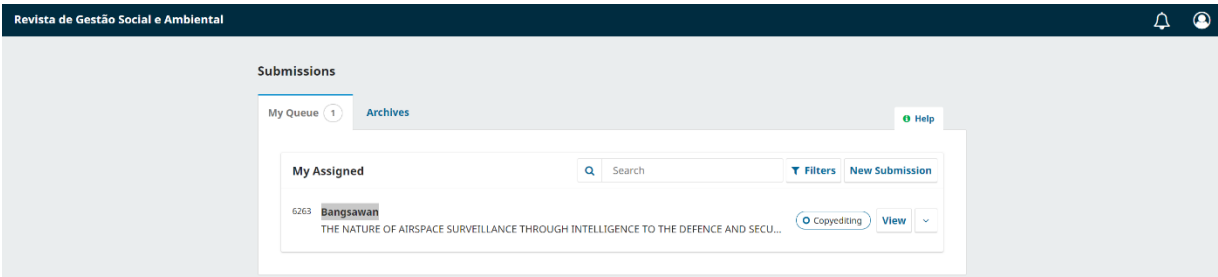
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We are pleased to announce that, after review by our Editorial Board, the paper **“The Nature of Airspace Surveillance Through Intelligence to The Defence And Security of The Territory of The Republic of Indonesia”** written by **Ilham Abbas, Andi Bangsawan, Sufirman Rahman and La Ode Husen** has been accepted for publication in the Environmental and Social Management Journal (Revista de Gestão Social e Ambiental e-ISSN: 1981-982X Qualis 2017-2020: A3). After publication, your article will be available on our website (<https://rgsa.emnuvens.com.br/rgsa>).

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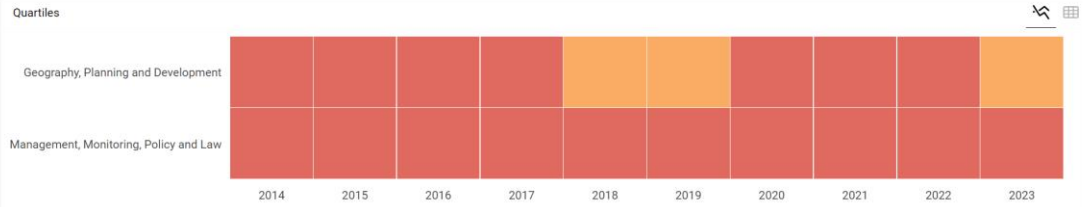
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THE NATURE OF AIRSPACE SURVEILLANCE THROUGH INTELLIGENCE TO THE DEFENCE AND SECURITY OF THE TERRITORY OF THE REPUBLIC OF INDONESIA

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ABSTRACT

Objective: This research aims to analyze, criticize, and determine the nature of airspace surveillance through intelligence concerning the Defense and Security of the Territory of the Republic of Indonesia. It further seeks to assess the effectiveness of such surveillance and identify the factors influencing its success.

Theoretical framework: In line with its objectives, this research adopts a descriptive approach with a normative legal research methodology, supplemented by sociological legal research. By employing this framework, the study endeavors to provide a comprehensive understanding of airspace surveillance within the Indonesian context.

Method: To achieve its objectives, this study utilizes descriptive research methods, drawing upon normative legal research complemented by sociological legal research. Through this methodological approach, the

research aims to gather empirical data and analyze legal frameworks to shed light on airspace surveillance practices.

Results and conclusion: The findings of this research indicate several key insights. Firstly, the nature of airspace surveillance through intelligence is primarily framed within the context of preventive measures within the Air Defense Identification Zone (ADIZ). Secondly, while efforts are made, the effectiveness of airspace surveillance concerning the Defense and Security of the State Territory of the Republic of Indonesia is deemed inadequate. Thirdly, factors impacting effectiveness range from legal limitations to challenges in human resources coordination, infrastructure issues, community dynamics, and cultural attitudes.

Implications of the research: The implications of this study are multifaceted. Firstly, it highlights the urgent need to optimize airspace surveillance conducted by the Indonesian Air Force, supporting the enhancement of air defense capabilities through equipment reinforcement. Secondly, it underscores the necessity of drafting legislation on Airspace Management to strengthen law enforcement against airspace violations. Finally, it emphasizes the importance of community involvement in airspace regulation, including participation in spatial development planning processes.

Originality/value: This research contributes original insights into the nature and effectiveness of airspace surveillance through intelligence within the Indonesian context. By offering recommendations for improving airspace management strategies, the study provides valuable guidance for policymakers and stakeholders involved in national defense and security initiatives.

Keywords: Nature, Intelligence, Security, Surveillance, Defense, Airspace, Territory of the Republic of Indonesia

A NATUREZA DA VIGILÂNCIA DO ESPAÇO AÉREO POR MEIO DE INTELIGÊNCIA PARA A DEFESA E SEGURANÇA DO TERRITÓRIO DA REPÚBLICA DA INDONÉSIA

RESUMO

Objetivo: Esta pesquisa tem como objetivo analisar, criticar e determinar a natureza da vigilância do espaço aéreo por meio da inteligência relativa à Defesa e Segurança do Território da República da Indonésia. Além disso, busca avaliar a eficácia dessa vigilância e identificar os fatores que influenciam seu sucesso.

Estrutura teórica: De acordo com seus objetivos, esta pesquisa adota uma abordagem descritiva com uma metodologia de pesquisa jurídica normativa, complementada por uma pesquisa jurídica sociológica. Ao empregar essa estrutura, o estudo se esforça para fornecer uma compreensão abrangente da vigilância do espaço aéreo no contexto da Indonésia.

Método: Para atingir seus objetivos, este estudo utiliza métodos de pesquisa descritiva, com base na pesquisa jurídica normativa complementada pela pesquisa jurídica sociológica. Por meio dessa abordagem metodológica, a pesquisa visa reunir dados empíricos e analisar estruturas jurídicas para esclarecer as práticas de vigilância do espaço aéreo.

Resultados e conclusões: Os resultados desta pesquisa indicam várias percepções importantes. Em primeiro lugar, a natureza da vigilância do espaço aéreo por meio da inteligência é enquadrada principalmente no contexto de medidas preventivas dentro da Zona de Identificação de Defesa Aérea (ADIZ). Em segundo lugar, embora sejam feitos esforços, a eficácia da vigilância do espaço aéreo com relação à Defesa e Segurança do Território do Estado da República da Indonésia é considerada inadequada. Em terceiro lugar, os fatores que afetam a eficácia variam de limitações legais a desafios na coordenação de recursos humanos, problemas de infraestrutura, dinâmica da comunidade e atitudes culturais.

Implicações da pesquisa: As implicações deste estudo são multifacetadas. Em primeiro lugar, ele destaca a necessidade urgente de otimizar a vigilância do espaço aéreo realizada pela Força Aérea da Indonésia, apoiando o aprimoramento das capacidades de defesa aérea por meio do reforço de equipamentos. Em segundo lugar, ressalta a necessidade de elaborar uma legislação sobre gerenciamento do espaço aéreo para fortalecer a aplicação da lei contra violações do espaço aéreo. Por fim, enfatiza a importância do envolvimento da comunidade na regulamentação do espaço aéreo, incluindo a participação nos processos de planejamento do desenvolvimento espacial.

Originalidade/valor: Esta pesquisa contribui com percepções originais sobre a natureza e a eficácia da vigilância do espaço aéreo por meio da inteligência no contexto da Indonésia. Ao oferecer recomendações para aprimorar as estratégias de gerenciamento do espaço aéreo, o estudo fornece uma orientação valiosa para a vigilância do espaço aéreo.

Palavras-chave: Natureza, inteligência, segurança, vigilância, defesa, espaço aéreo, território da República da Indonésia

LA NATURALEZA DE LA VIGILANCIA DEL ESPACIO AÉREO MEDIANTE LA INTELIGENCIA PARA LA DEFENSA Y LA SEGURIDAD DEL TERRITORIO DE LA REPÚBLICA DE INDONESIA

Objetivo: Esta investigación pretende analizar, criticar y determinar la naturaleza de la vigilancia del espacio aéreo a través de la inteligencia relativa a la Defensa y Seguridad del Territorio de la República de Indonesia. Además, pretende evaluar la eficacia de dicha vigilancia e identificar los factores que influyen en su éxito.

Marco teórico: En consonancia con sus objetivos, esta investigación adopta un enfoque descriptivo con una metodología de investigación jurídica normativa, complementada por la investigación jurídica sociológica. Mediante el empleo de este marco, el estudio pretende proporcionar una comprensión global de la vigilancia del espacio aéreo en el contexto indonesio.

Método: Para lograr sus objetivos, este estudio utiliza métodos de investigación descriptivos, basándose en la investigación jurídica normativa complementada por la investigación jurídica sociológica. Mediante este enfoque metodológico, la investigación pretende recopilar datos empíricos y analizar los marcos jurídicos para arrojar luz sobre las prácticas de vigilancia del espacio aéreo.

Resultados y conclusiones: Los resultados de esta investigación indican varias ideas clave. En primer lugar, la naturaleza de la vigilancia del espacio aéreo a través de la inteligencia se enmarca principalmente en el contexto de las medidas preventivas dentro de la Zona de Identificación de Defensa Aérea (ADIZ). En segundo lugar, aunque se realizan esfuerzos, la eficacia de la vigilancia del espacio aéreo en relación con la defensa y la seguridad del territorio estatal de la República de Indonesia se considera insuficiente. En tercer lugar, los factores que influyen en la eficacia van desde las limitaciones legales hasta los retos en la coordinación de los recursos humanos, los problemas de infraestructura, la dinámica comunitaria y las actitudes culturales.

Implicaciones de la investigación: Las implicaciones de este estudio son múltiples. En primer lugar, pone de relieve la urgente necesidad de optimizar la vigilancia del espacio aéreo llevada a cabo por las Fuerzas Aéreas indonesias, apoyando la mejora de las capacidades de defensa aérea mediante el refuerzo de los equipos. En segundo lugar, subraya la necesidad de elaborar una legislación sobre la gestión del espacio aéreo para reforzar la aplicación de la ley contra las violaciones del espacio aéreo. Por último, subraya la importancia de la implicación de la comunidad en la regulación del espacio aéreo, incluida la participación en los procesos de planificación del desarrollo espacial.

Originalidad/valor: Esta investigación aporta ideas originales sobre la naturaleza y la eficacia de la vigilancia del espacio aéreo a través de la inteligencia en el contexto indonesio. Al ofrecer recomendaciones para mejorar las estrategias de gestión del espacio aéreo, el estudio proporciona una valiosa orientación para los responsables políticos y las partes interesadas implicadas en las iniciativas nacionales de defensa y seguridad.

Palabras clave: Naturaleza, Inteligencia, Seguridad, Vigilancia, Defensa, Espacio aéreo, Territorio de la República de Indonesia.

1. Introduction

The Unitary State of the Republic of Indonesia (NKRI), is an archipelago state, consisting of large and small islands quoted from the book *Social Knowledge* by Tri Nur Hadiyati, according to the latest calculations totalling 17,499 islands, with sea waters reaching $\pm 5,900,000$ km² and a coastline of $\pm 81,000$ km². So vast is the sovereign territory of the Republic of Indonesia, that the State of Indonesia has a very large air space to be used by air vehicles for the benefit of civil and military aviation. For a country, airspace is very important because it is related to sovereignty and the economy, especially aviation traffic, both domestic and international flights. Aviation as a unified system consisting of the utilisation of airspace, such as aircraft, airports, air transport, flight navigation, safety and security, the environment as well as supporting facilities and other public facilities.¹

Article 2 of Law of the Republic of Indonesia Number 34 of 2004 concerning the Indonesian National Army² affirms that one of the identities of the Indonesian National Army is a professional army, namely an army that is well trained, educated, equipped, not in practical politics, not in business, and guaranteed welfare, and follows state political policies that adhere to the principles of civil supremacy democracy, human rights, provisions of national law, and ratified international law. Air Force intelligence personnel as part of TNI personnel must have the ability to carry out tasks, especially in the implementation of an air operation. To realise the ability of intelligence personnel, each intelligence personnel must be properly educated and trained.

¹ Kholifah, S. (2020). The discourse of NKRI (The Unitary State Republic of Indonesia) and caliphate in the Indonesian context. *Masyarakat, Kebudayaan Dan Politik*, 33(3), 299–308. <https://doi.org/10.20473/mkp.V33I32020.299-308>

² Timang, Y., Widayati, W., & Darmadi, N. S. (2022). The Criminal Policy in Efforts to Overcome Crimes Perpetrated by the Indonesian National Army. *Law Development Journal*, 4(3), 480. <https://doi.org/10.30659/ldj.4.3.480-494>

The Air Force as an integral part of the Indonesian National Army as the People's Army, Fighting Army, National Army and Professional Army in charge of upholding the sovereignty of the state, maintaining the territorial integrity of the Unitary State of the Republic of Indonesia based on Pancasila and the 1945 Constitution of the Republic of Indonesia, and protecting the entire nation and all Indonesian spilled blood from threats and disturbances to the integrity of the Unitary State of the Republic of Indonesia.

The Indonesian National Army Air Force (TNI AU) in ensuring the sovereignty and territorial integrity of the Unitary Republic of Indonesia carries out the development and development of air matra power. The implementation of the task is realised in the activities of War Military Operations (OMP) and Military Operations Other than War (OMSP). The development of air matra power to support air operations requires directed, sustainable and integrated development of strength and capabilities so that the ideal TNI AU posture.³

For a country, airspace is very important because it is related to sovereignty and the economy, especially aviation traffic, both domestic and international flights. Aviation is a unified system consisting of the utilisation of airspace, such as aircraft, airports, air transport, flight navigation, safety and security, the environment as well as supporting facilities and other public facilities. The Indonesian National Army Air Force strives to build and develop air power, especially in supporting air operations, in maintaining the sovereignty and territorial integrity of the Unitary State of the Republic of Indonesia.⁴

2. Theoretical Framework

In line with its objectives, this research adopts a descriptive approach with a normative legal research methodology, supplemented by sociological legal research. By employing this framework, the study endeavors to provide a comprehensive understanding of airspace surveillance within the Indonesian context.

3. The Nature of Airspace Surveillance Through Intelligence for the Defence and Security of the Territory of the Republic of Indonesia

³ Ruslana, R. R., Dwiyanto, H., & Mansyah, A. (2022). 52 INTEROPERABILITY OF COMMAND TROOPS WITH COMBAT AIRCRAFT AND HELICOPTER PERSONNEL IN SUPPORTING COMBAT SEARCH AND RESCUE OPERATIONS. *Strategi Pertahanan Udara*, 8(1). <https://doi.org/10.33172/jspu.v8i1.1049>

⁴ Ximenes, J. F. L., Darmawan, W. B., & Akim. (2019). The role of the Indonesian Air Force in safeguarding the border area of the Republic of Indonesia in East Nusa Tenggara (Ntt). *Central European Journal of International and Security Studies*, 13(4), 79–90. <https://www.mendeley.com/catalogue/14dd2948-f822-320a-9e00-bc4341f8b637/>

A country's air power has an important role in defence. Control of airspace and its utilisation for the Air Force is very useful and is one of the key factors in the success of an operational mission in the form of Military Operations of War (OMP) or Military Operations Other than War (OMSP). The advantages of air power which are the hallmark of the Air Force are fast movement, reachability at all points and all regions of the country with high flexibility. These advantages greatly support the implementation of air operations tasks.

TNI Air Force in conducting air defence divides the area into several parts. Based on the Decree of the Commander of the National Air Operations Command Number Kep/97/ VII /2023 concerning Air Defence Operation Standing Procedures, the Air Defence Area is divided into several air defence sectors on the basis of control capabilities and geographical conditions of the Republic of Indonesia.⁵

In order to achieve layered defence in an air defence sector, the air defence area is divided into three air defence areas based on the capabilities of the Air Defence Weapon System Main Equipment owned, namely; Outer Air Defence Area, Main Air Defence Area, Inner Air Defence Area. Air intelligence activities include aerial observation, aerial surveying and mapping, special intelligence, and aerial reconnaissance. The sources of information for the implementation of air intelligence consist of four sources, two of which are Geospatial Intelligence consisting of Imagery, Imagery data, and geospatial information; and Signal Intelligence consisting of Communication Intelligence, Electronic Intelligence, and Signal Intelligence of foreign instrumentation through remote sensing using manned or unmanned aircraft and remote sensing or satellite technology.⁶

Air intelligence is responsible for collecting, analysing and disseminating information on relevant air activities, including airspace surveillance. Their role includes:

1. Threat Detection: Air intelligence collects data on adversary air activities, including combat aircraft, drones, and missiles, to detect potential threats to national security.
2. Operational Monitoring: They monitor own and enemy air operations, ensure compliance with international regulations and bilateral agreements, and track suspicious activities.

⁵ Fadhiil, Muhammad Dzaki (2022) "PELAKSANAAN AIR DEFENCE IDENTIFICATION ZONE (ADIZ) SEBAGAI UPAYA PENEGAKAN HUKUM WILAYAH UDARA NEGARA MENURUT HUKUM INTERNASIONAL," "Dharmasisya" Jurnal Program Magister Hukum FHUI: Vol. 2, Article 21. Available at: <https://scholarhub.ui.ac.id/dharmasisya/vol2/iss1/21>

⁶ Didi Rahmat Sabaruddin, Lembaga Penerbangan Dan Antariksa Nasional Untuk Mendukung Tugas Intelijen Udara, *Jurnal Strategi Pertahanan Udara*, Vol. 8, No 2, 2022, hlm. 33

3. Tactical Support: Air intelligence provides real-time information to military commanders to support decision-making in air operations, including targeting and manoeuvres.

Air intelligence tasks are operational tasks carried out in an integrated manner in which the Air Force as the main component is assisted by reserve components and supporting components. In order to support the task of the Air Force in the task of air intelligence, cooperation is carried out with ministerial and non-ministerial institutions that have the ability to support the presentation of air intelligence data, one of which is cooperation with the National Institute of Aviation and Space (LAPAN).

Cooperation between LAPAN and the Indonesian Air Force in order to support air intelligence tasks, carried out by the Remote Sensing Data Technology Center (Pustekdata Inderaja) and the Indonesian Air Force Security and Coding Service (Dispamsanau) regarding the use of remote sensing technology and data. This cooperation aims to carry out supervision and security of the entire national territory in a fast, precise, accurate and integrated manner; Increase the capacity of Human Resources in the field of aerospace science and technology; Utilize aerospace science and technology for the benefit of image intelligence and signal intelligence; Obtain and present the latest strategic data on earth images related to national defense and security. as for the objects of this cooperation include the provision of remote sensing data to support Dispamsanau tasks, and education and training in remote sensing data processing to support Dispamsanau tasks.⁷

The implementation of Air Force intelligence is always related to technological development and is guided by the intelligence cycle and the implementation of air intelligence investigations. The explanation of the intelligence process is as follows:

- a. Planning Stage This stage is an initial activity carried out with the aim of providing understanding and understanding for the collecting agency in carrying out the task, so that it can be carried out in a directed manner and get maximum results. Activities carried out at this stage include the formation of the collecting agency, user briefing to the collecting agency concerning intelligence needs, namely the main elements of information (UUK) and Other Intelligence Needs (KIL), Information Collection Plan, and Target Operations (TO).
- b. Collection Stage Collection is an activity carried out by the collecting agency to search for, collect information material from

⁷ Haryanto, H. I., Hidayat, T., Bainus, A., & Sudirman, A. (2022). Indonesian Air Defence: The Role Of Stakeholders And The Development Of Indonesia's Air Defence Supporting Industry. Journal of Vytautas Magnus University, 15(1), 587–600. <https://www.mendeley.com/catalogue/3a76c985-78e1-30da-a22d-5ea6463f9e18/>

various sources of information by means, properties, techniques, and other methods as well as making intelligence reports, as for the activities are as follows:

1. The nature is carried out openly and closed.
2. Tactics used through human approach (Human Intelligence), technological intelligence, Imagery, and Signal intelligence and combined.
3. Techniques used through observation, reconnaissance, interview/elicitation, and intelligence research.

In order to obtain information that is effective and timely, appropriate tactics and techniques are needed in collecting information that is tailored to the target situation and access to the target. These tactics include matbar, interview, interrogation, tracking, infiltration, reconnaissance and wiretapping. Sources of information can come from the unit itself or outside which is guided by the value of trust consisting of individuals, organizations, manuscripts, goods and activities.

- c. **Delivery Stage** At this stage, air intelligence products are delivered to users and authorities either orally or in writing, in a timely manner so that they can be used effectively and efficiently by users. The method and means of delivery are determined according to the level of usefulness of the air intelligence product and in a way that is simple, safe, fast, and accurate according to needs. As a function, intelligence is related to early sensing or better known as the early warning system. This will result in intelligence having the task of collecting, analyzing and providing the necessary information to policy makers in determining the best policy to achieve goals. In addition, counterintelligence itself is a preemptive activity that is secret. Its purpose is to narrow the space for movement, counteract, thwart, and destroy the opponent's intelligence operations.

Enforcement of air security violators is an action taken by the Indonesian Air Force (TNI-AU) to organize and regulate unauthorized airspace violations. Airspace violations can be in the form of unauthorized aircraft entries or violating flight rules. For example, in 2015, Russia violated Turkey's airspace and shot down a Russian-made warplane. The TNI-AU has the duty to take action against airspace violations, including conducting "force down" actions (the act of arresting aircraft that violate airspace) and making arrests of the crew involved. The TNI-AU also has the task of maintaining the security of national airspace and regulating unauthorized airspace violations, such as aerial intrusion and violations of flight navigation. The Indonesian Air Force (TNI-AU) takes action against airspace violations by detecting, identifying, and taking action against aircraft that violate the Republic of Indonesia's airspace. TNI-AU has radar

facilities and the ability to detect and identify air vehicles that violate the air blood of the Republic of Indonesia.

In Law No. 34 of 2004 concerning the Indonesian National Army, the TNI-AU has the authority to deal with violations of national jurisdiction. Active Air Defense operations include detection, identification, and prosecution activities, as well as prevention of predicted impacts caused by airstrikes. TNI-AU also has the ability to stop foreign civilian aircraft when passing through Indonesian territory. The Indonesian Air Force (TNI-AU) prosecutes airspace violations with operations consisting of three main facilities: Active Air Defense Operations (OPUA), Passive Air Defense Operations (OPUP), and Support Air Defense Operations (OPUD), the description is as follows:

1. Active Air Defense Operations (OPUA): OPUA conducts "force down" actions (actions to capture aircraft violating airspace) and arrests the crew involved.
2. Passive Air Defense Operations (OPUP): OPUP stops foreign civilian aircraft when passing over Indonesian territory without permission.
3. Operation Air Defense Support (OPUD): OPUD stops foreign civilian aircraft that violate flight rules.

4. The Effectiveness of Airspace Surveillance Through Intelligence on the Defense and Security of the Territory of the Republic of Indonesia

The Air Force has an important role in upholding sovereignty in airspace. Based on the research conducted, the Air Force has the authority and responsibility to enforce sovereignty and law in Indonesia's national airspace. The Air Force also has the ability to detect, identify, and take action against all air vehicles that violate the NKRI's air blood. Air Force Air Defense operations consist of two parts: active operations and passive operations. Active operations include detection, identification, and prosecution activities, while passive operations consist of setting up firewall functions and a strong understanding of the blueprint for fostering information systems which is realized by validating cyber organizations.

The empirical data on violations in Indonesian airspace, and categorized as violations of Airspace Sovereignty from the results of data and information collection activities as referred to above have been compiled in the form of an inventory list of problems, including:⁸

1. In 2003 there was an incident of US F18 Hornet entering Indonesian airspace without permission and disrupting civil

⁸ Devi, A. F. (2022). THE AIR DEFENSE IDENTIFICATION ZONE (ADIZ) INDONESIA IN ORDER TO ENSURE SECURITY IN THE AIR REGION JURISDICTION OF NATIONAL JURISDICTION. *Strategi Pertahanan Udara*, 8(1). <https://doi.org/10.33172/jspu.v8i1.1047>

aviation over Bawean Island. On July 3, 2003, Indonesian Air Force radar captured the movement of five US Navy F-18 Hornet aircraft in Indonesian airspace. The five aircraft were caught in combat formation. However, they had not yet been identified and suddenly the five aircraft disappeared from the radar. As a result of disappearing from the radar, Kosek Hanudnas II did not report the incident to the Center. Suddenly, about three hours later the existence of the five aircraft.

The flight of the US warplane even caused two airlines, Bouraq Indonesia and Mandala Airlines, to protest because it disrupted international flight routes. Moreover, the flight was not reported to the nearest ATC so that the fighter's black flight was very suspicious. The Indonesian Air Force immediately airlifted two F16/FightingFalcon fighters from Iswahyudi Madiun Airbase to conduct visual identification and asked to avoid confrontation with the US Navy aircraft. Shortly after takeoff, the two Air Force aircraft were immediately targeted and locked on by the F-18/Hornet. Not only was the F-18/Hornet targeted, but the Hornet also jammed the aircraft (shutting down radio communications), which was successfully anticipated by TNI AU pilots. Various maneuvers were carried out by TNI AU aviators to escape the lockdown. Starting avoidance maneuvers such as hard breaks to the left and right, or zig-zagging which can cause the crew to be exposed to gravity effects up to 9 G-Force, or nine times the Earth's gravitational pull. After performing various maneuvers, the Air Force pilots finally gave the signal of rocking the wings up and down, to show they were not a threat to the US F/A 18 Hornet. About a minute later, the two F-16s managed to communicate with the two Hornets that intercepted them.

2. In 2008 there were several cases of airspace sovereignty violations, including: a) Unauthorized flight of Partenavia P-68 Viper aircraft at Mopah Airport, Merauke; b) Unauthorized flight of helicopter type R22 Registration ZK-IAH (New Zealand) in 2008 in West Sumatra. The process was transferred to the investigation stage at the West Sumatra Regional Police, but in 2013 an Order to Discontinue Investigation was issued;
3. On December 14, 2010, there was a violation of airspace by a Malaysian commercial aircraft with the type of BAE 146-200;
4. In 2011, there were several cases of violation of the sovereignty of Indonesian airspace;
 - a. Forced landing of aircraft at Sultan Hasanuddin Makassar Air Base Boeing 737-300 Registration AP-BEH belonging to Pakistan Air transporting UN troops crossing Indonesian airspace without permission;

- b. Falcon 900 aircraft belonging to Papua New Guinea violated airspace on November 29, 2011 and was intercepted by Sukhoi owned by the Indonesian Air Force;
 - c. Airspace and ADIZ violations committed by Australian military aircraft RAAF AP-3C when carrying out SAR missions on December 19-20, 2011 in the South of Java. Previously, Australia had made an agreement with Basarnas, one of the substances of which allowed Australian aircraft to access Indonesian airspace without being equipped with licenses as required by laws and regulations. The agreement did not involve the Ministry of Foreign Affairs, Ministry of Transportation, and TNI, causing problems in the field; In 2011, there were several cases of violation of the sovereignty of Indonesian airspace;
5. In 2013 a US military aircraft Jet Dornier Do328 110 landed without having security clearance at Sultan Iskandar Muda Airport, Banda Aceh; not only that, until 2022 there are various kinds of air violations committed by neighboring countries, which makes peace in Indonesian airspace must get extra care from the Air Force.

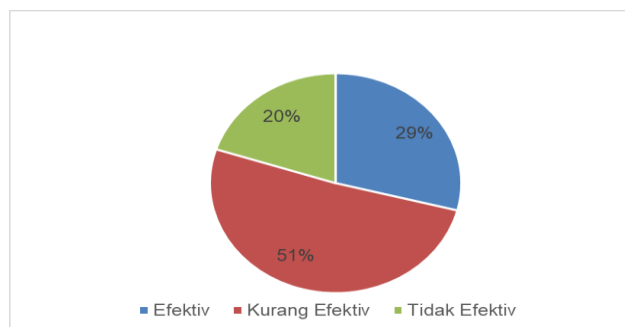


Diagram 1:

Effectiveness of Airspace Surveillance by Air Force Intelligence

According to the data above, the respondents' opinions stated that 51% stated that it was less effective, 29% stated that it was effective, and 20% stated that it was not effective. The capabilities of the Indonesian Air Force are currently not comparable to Indonesia's vast airspace so that only some potential airspace violations can be detected and dealt with. The Ministry of Defense's Minimum Essential Force development document states that to be able to counteract various actual threats and in

line with limited resources, by 2024 the minimum air power of the Air Force must be supported by 32 radar units and 11 fighter squadrons.

Recent incidents of airspace violations have reminded the government of the vulnerability of Indonesian airspace. For example, a civilian Gulfstream IV aircraft was detected to have entered Indonesian airspace without permission. The aircraft, numbered HZ103, departed Singapore for Darwin, Australia, before heading to its final destination in Brisbane. The Indonesian Air Force sent two Sukhoi fighter planes from Air Squadron 11 Makassar to conduct an ambush and forced landing. Realizing it was in pursuit, the foreign aircraft increased speed instead of giving information to the approaching TNI AU aircraft. Conducting a chase until passing El Tari, Kupang, the two Sukhoi TNI AU aircraft managed to force the foreign aircraft to land at El Tari Airport. The attitude of the foreign aircraft reflects their lack of respect for the sovereignty of Indonesian airspace. The limitations of military radar mean that such violations are very common, with foreign aircraft often crossing Indonesian airspace without complete documents and permits.

In 2014 alone, the Indonesian Air Force has pursued foreign aircraft that crossed Indonesian airspace without permission several times, including a Beechcraft training aircraft from Singapore in October. Two Sukhoi aircraft from Batam Air Base conducted a chase that finally forced the foreign aircraft to land at Supadio Air Base, Pontianak. A week earlier, Sukhoi Air Force also chased a foreign training aircraft on the Australia-Philippines route. Before being successfully forced to land at Sam Ratulangi Airport, Manado, Sukhoi pilots had locked the target aircraft because they refused to land. In early 2014 the Air Force also detected a foreign aircraft type Swearingen SX 300 that entered Indonesian airspace without permission. The Air Force responded by flying two F-16 fighters and intercepting the foreign aircraft west of Meulaboh, Aceh, which then forcibly landed them at Soewondo Air Base, Medan.

Based on the Decree of the Commander of the National Air Operations Command Number Kep/96/VII/2023 concerning the Standing Procedures for Law Enforcement Operations and Airspace Security, Airspace Violations are all aircraft and/or air vehicle activities that violate the Airspace in accordance with statutory provisions. For everyone who commits a violation in operating aircraft and/or air vehicles in the Airspace will be subject to criminal sanctions.

Based on the research results, there are law enforcement problems among law enforcement⁹ agencies on airspace violations, especially related to investigations. There are Investigation Constraints In handling

⁹ Mappong, Z. (2023). Regulation on the Fund of Corporate Social and Environmental Responsibility. *Revista De Gestão Social E Ambiental*, 17(9), e03675. <https://doi.org/10.24857/rgsa.v17n9-020>

cases of forced landing of foreign aircraft in Indonesian territory, so far the investigation has been carried out by Aviation PPNS under the Directorate General of Civil Aviation of the Ministry of Transportation. The authority of this PPNS is based on Article 399 of Law No. 1 of 2009 concerning Aviation which regulates certain Civil Servant officials within the agency whose scope of duties and responsibilities in the field of aviation are given special authority as investigators of criminal acts as referred to in this Law.

According to current regulations, after the investigation process is carried out by the Air Force, the case is handed over to the aviation PPNS for the investigation process. However, until now, that process has never happened. Indeed, justice has never been realized.¹⁰ The absence of a judicial process against air violations that often occur in the territory of the Republic of Indonesia suggests weaknesses in law enforcement. Therefore, to strengthen the law enforcement mechanism in the airspace of the Republic of Indonesia, it is necessary to make a series of efforts starting with granting authority to the Indonesian Air Force as an investigator, especially with regard to violations of the territory. If this authority has been granted, the Air Force will follow up with the preparation of personnel and all the tools, naturally, other related parties will follow. So far, cases of airspace violations have been handled by the Aviation PPNS at the Ministry of Transportation.

The granting of authority only to PPNS Aviation is felt by some parties to be one of the inhibiting factors in law enforcement for aircraft forced to land in Indonesian territory. The Indonesian Air Force, which carries out interception and initial investigations, is not involved in the investigation process. This is ironic because the Air Force actually knows in detail the violations committed by the aircraft while in Indonesian airspace and the Air Force also has technical knowledge related to this matter.¹¹

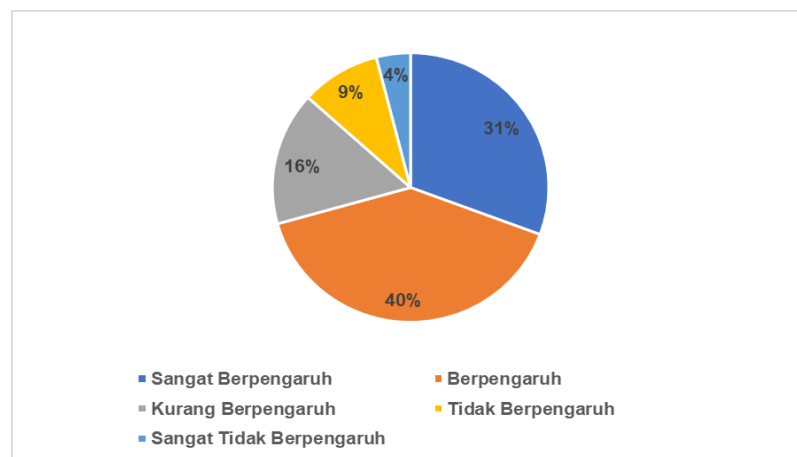
Article 10 of Law No. 34 of 2004 concerning the TNI, has stipulated that the TNI AU is tasked with carrying out air matra duties in the field of defense, enforcing the law and maintaining security in the airspace of national jurisdiction. However, in this case, the TNI AU is not involved because it is not authorized by Law No. 1/2009 concerning Aviation. Then, in PP No. 4/2018, it is stated that the authority of the TNI AU is only limited to the initial investigation, namely checking documents, checking aircraft and checking crew and passengers. Therefore, the TNI AU needs to be involved as an Investigator in handling cases of airspace violations related

¹⁰ Razak, A., Perdana, T., Rahman, A., & Thalib, H. (2024). The Nature and Existence of Jurisprudence in State Administrative Courts in Indonesia. *Revista De Gestão Social E Ambiental*, 18(7), e05365. <https://doi.org/10.24857/rgsa.v18n7-044>

¹¹ Wirsamulia, Feri (2022) "The Legal Problem of Aircraft Mortgage in Indonesia," *Indonesia Law Review*: Vol. 12: No. 1, Article 2. DOI: 10.15742/ilrev.v12n1.2 Available at: <https://scholarhub.ui.ac.id/ilrev/vol12/iss1/2>

to defense, the TNI AU Legal Service conducted a Legal Study on the Urgency of the TNI AU as an Investigator in Airspace Violations by Foreign Aircraft. The required arrangements related to the investigation are the investigation of criminal acts in the field of Airspace Management carried out by investigators of the Indonesian National Army Air Force officers, investigators of the Indonesian National Police, and / or civil servant investigators within the agency whose scope of duties and responsibilities in the field of aviation. Air Force investigators will coordinate with the public prosecutor. The implementation of the investigation by the Civil Servant Investigator is under the coordination and supervision of the investigator of the Indonesian National Police and submits the results of the investigation to the public prosecutor through the public prosecutor.

Diagram 2
The Effect of Legal Substance Factors on Effectiveness of Airspace Surveillance



Based on the data above, it shows that the opinion of respondents who stated that it was very influential, amounted to 31%; who stated that it was influential, amounted to 40%; who stated that it had less effect, amounted to 16%; who stated that it had no effect amounted to 9%; and stated that it had no effect amounted to 4%. In practice and existing arrangements, it appears that the arrangements in Article 401 and Article 402 of Law Number 1 of 2009 concerning Aviation only regulate acts of violation of airspace in restricted and limited airspace, but violations of Indonesian airspace as a form of violation of sovereignty have not been regulated. In addition, violations of Indonesian airspace are only against aircraft, both domestic and foreign aircraft, not including air vehicles, even though in practice there are violations committed using air vehicles.

So far, there has been no criminal regulation regarding air violations of Indonesian territorial sovereignty. The unregulated criminal offense is based, among others, on good relations between countries in international agreements. This reason is in principle not appropriate because the 1944 Chicago Convention has actually stated that a country has full and

exclusive sovereignty over the airspace above its territory and has the right to impose sanctions on it in the event of an airspace violation.

5. Conclusion

The nature of airspace surveillance through intelligence on the defense and security of the Territory of the Republic of Indonesia is airspace surveillance through intelligence in the context of preventive action in airspace surveillance, which is called the *Air Defense Identification Zone* (ADIZ). The effectiveness of airspace surveillance through intelligence on the defense and security of the territory of the Republic of Indonesia is airspace surveillance through intelligence on the defense and security of the country because the capabilities of the Indonesian Air Force are currently not comparable to the vast airspace of Indonesia so that only some potential airspace violations can be detected and acted upon.

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THE NATURE OF AIRSPACE SURVEILLANCE THROUGH INTELLIGENCE TO THE DEFENCE AND SECURITY OF THE TERRITORY OF THE REPUBLIC OF INDONESIA

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ABSTRACT

Objective: This research aims to analyze, criticize, and determine the nature of airspace surveillance through intelligence concerning the Defense and Security of the Territory of the Republic of Indonesia. It further seeks to assess the effectiveness of such surveillance and identify the factors influencing its success.

Theoretical framework: In line with its objectives, this research adopts a descriptive approach with a normative legal research methodology, supplemented by sociological legal research. By employing this framework, the study endeavors to provide a comprehensive understanding of airspace surveillance within the Indonesian context.

Method: To achieve its objectives, this study utilizes descriptive research methods, drawing upon normative legal research complemented by sociological legal research. Through this methodological approach, the

research aims to gather empirical data and analyze legal frameworks to shed light on airspace surveillance practices.

Results and conclusion: The findings of this research indicate several key insights. Firstly, the nature of airspace surveillance through intelligence is primarily framed within the context of preventive measures within the Air Defense Identification Zone (ADIZ). Secondly, while efforts are made, the effectiveness of airspace surveillance concerning the Defense and Security of the State Territory of the Republic of Indonesia is deemed inadequate. Thirdly, factors impacting effectiveness range from legal limitations to challenges in human resources coordination, infrastructure issues, community dynamics, and cultural attitudes.

Implications of the research: The implications of this study are multifaceted. Firstly, it highlights the urgent need to optimize airspace surveillance conducted by the Indonesian Air Force, supporting the enhancement of air defense capabilities through equipment reinforcement. Secondly, it underscores the necessity of drafting legislation on Airspace Management to strengthen law enforcement against airspace violations. Finally, it emphasizes the importance of community involvement in airspace regulation, including participation in spatial development planning processes.

Originality/value: This research contributes original insights into the nature and effectiveness of airspace surveillance through intelligence within the Indonesian context. By offering recommendations for improving airspace management strategies, the study provides valuable guidance for policymakers and stakeholders involved in national defense and security initiatives.

Keywords: Nature, Intelligence, Security, Surveillance, Defense, Airspace, Territory of the Republic of Indonesia

A NATUREZA DA VIGILÂNCIA DO ESPAÇO AÉREO POR MEIO DE INTELIGÊNCIA PARA A DEFESA E SEGURANÇA DO TERRITÓRIO DA REPÚBLICA DA INDONÉSIA

RESUMO

Objetivo: Esta pesquisa tem como objetivo analisar, criticar e determinar a natureza da vigilância do espaço aéreo por meio da inteligência relativa à Defesa e Segurança do Território da República da Indonésia. Além disso, busca avaliar a eficácia dessa vigilância e identificar os fatores que influenciam seu sucesso.

Estrutura teórica: De acordo com seus objetivos, esta pesquisa adota uma abordagem descritiva com uma metodologia de pesquisa jurídica normativa, complementada por uma pesquisa jurídica sociológica. Ao empregar essa estrutura, o estudo se esforça para fornecer uma compreensão abrangente da vigilância do espaço aéreo no contexto da Indonésia.

Método: Para atingir seus objetivos, este estudo utiliza métodos de pesquisa descritiva, com base na pesquisa jurídica normativa complementada pela pesquisa jurídica sociológica. Por meio dessa abordagem metodológica, a pesquisa visa reunir dados empíricos e analisar estruturas jurídicas para esclarecer as práticas de vigilância do espaço aéreo.

Resultados e conclusões: Os resultados desta pesquisa indicam várias percepções importantes. Em primeiro lugar, a natureza da vigilância do espaço aéreo por meio da inteligência é enquadrada principalmente no contexto de medidas preventivas dentro da Zona de Identificação de Defesa Aérea (ADIZ). Em segundo lugar, embora sejam feitos esforços, a eficácia da vigilância do espaço aéreo com relação à Defesa e Segurança do Território do Estado da República da Indonésia é considerada inadequada. Em terceiro lugar, os fatores que afetam a eficácia variam de limitações legais a desafios na coordenação de recursos humanos, problemas de infraestrutura, dinâmica da comunidade e atitudes culturais.

Implicações da pesquisa: As implicações deste estudo são multifacetadas. Em primeiro lugar, ele destaca a necessidade urgente de otimizar a vigilância do espaço aéreo realizada pela Força Aérea da Indonésia, apoiando o aprimoramento das capacidades de defesa aérea por meio do reforço de equipamentos. Em segundo lugar, ressalta a necessidade de elaborar uma legislação sobre gerenciamento do espaço aéreo para fortalecer a aplicação da lei contra violações do espaço aéreo. Por fim, enfatiza a importância do envolvimento da comunidade na regulamentação do espaço aéreo, incluindo a participação nos processos de planejamento do desenvolvimento espacial.

Originalidade/valor: Esta pesquisa contribui com percepções originais sobre a natureza e a eficácia da vigilância do espaço aéreo por meio da inteligência no contexto da Indonésia. Ao oferecer recomendações para aprimorar as estratégias de gerenciamento do espaço aéreo, o estudo fornece uma orientação valiosa para a vigilância do espaço aéreo.

Palavras-chave: Natureza, inteligência, segurança, vigilância, defesa, espaço aéreo, território da República da Indonésia

LA NATURALEZA DE LA VIGILANCIA DEL ESPACIO AÉREO MEDIANTE LA INTELIGENCIA PARA LA DEFENSA Y LA SEGURIDAD DEL TERRITORIO DE LA REPÚBLICA DE INDONESIA

Objetivo: Esta investigación pretende analizar, criticar y determinar la naturaleza de la vigilancia del espacio aéreo a través de la inteligencia relativa a la Defensa y Seguridad del Territorio de la República de Indonesia. Además, pretende evaluar la eficacia de dicha vigilancia e identificar los factores que influyen en su éxito.

Marco teórico: En consonancia con sus objetivos, esta investigación adopta un enfoque descriptivo con una metodología de investigación jurídica normativa, complementada por la investigación jurídica sociológica. Mediante el empleo de este marco, el estudio pretende proporcionar una comprensión global de la vigilancia del espacio aéreo en el contexto indonesio.

Método: Para lograr sus objetivos, este estudio utiliza métodos de investigación descriptivos, basándose en la investigación jurídica normativa complementada por la investigación jurídica sociológica. Mediante este enfoque metodológico, la investigación pretende recopilar datos empíricos y analizar los marcos jurídicos para arrojar luz sobre las prácticas de vigilancia del espacio aéreo.

Resultados y conclusiones: Los resultados de esta investigación indican varias ideas clave. En primer lugar, la naturaleza de la vigilancia del espacio aéreo a través de la inteligencia se enmarca principalmente en el contexto de las medidas preventivas dentro de la Zona de Identificación de Defensa Aérea (ADIZ). En segundo lugar, aunque se realizan esfuerzos, la eficacia de la vigilancia del espacio aéreo en relación con la defensa y la seguridad del territorio estatal de la República de Indonesia se considera insuficiente. En tercer lugar, los factores que influyen en la eficacia van desde las limitaciones legales hasta los retos en la coordinación de los recursos humanos, los problemas de infraestructura, la dinámica comunitaria y las actitudes culturales.

Implicaciones de la investigación: Las implicaciones de este estudio son múltiples. En primer lugar, pone de relieve la urgente necesidad de optimizar la vigilancia del espacio aéreo llevada a cabo por las Fuerzas Aéreas indonesias, apoyando la mejora de las capacidades de defensa aérea mediante el refuerzo de los equipos. En segundo lugar, subraya la necesidad de elaborar una legislación sobre la gestión del espacio aéreo para reforzar la aplicación de la ley contra las violaciones del espacio aéreo. Por último, subraya la importancia de la implicación de la comunidad en la regulación del espacio aéreo, incluida la participación en los procesos de planificación del desarrollo espacial.

Originalidad/valor: Esta investigación aporta ideas originales sobre la naturaleza y la eficacia de la vigilancia del espacio aéreo a través de la inteligencia en el contexto indonesio. Al ofrecer recomendaciones para mejorar las estrategias de gestión del espacio aéreo, el estudio proporciona una valiosa orientación para los responsables políticos y las partes interesadas implicadas en las iniciativas nacionales de defensa y seguridad.

Palabras clave: Naturaleza, Inteligencia, Seguridad, Vigilancia, Defensa, Espacio aéreo, Territorio de la República de Indonesia.

1. Introduction

The Unitary State of the Republic of Indonesia (NKRI), is an archipelago state, consisting of large and small islands quoted from the book Social Knowledge by Tri Nur Hadiyati, according to the latest calculations totalling 17,499 islands, with sea waters reaching $\pm 5,900,000$ km² and a coastline of $\pm 81,000$ km². So vast is the sovereign territory of the Republic of Indonesia, that the State of Indonesia has a very large air space to be used by air vehicles for the benefit of civil and military aviation. For a country, airspace is very important because it is related to sovereignty and the economy, especially aviation traffic, both domestic and international flights. Aviation as a unified system consisting of the utilisation of airspace, such as aircraft, airports, air transport, flight navigation, safety and security, the environment as well as supporting facilities and other public facilities.¹

Article 2 of Law of the Republic of Indonesia Number 34 of 2004 concerning the Indonesian National Army² affirms that one of the identities of the Indonesian National Army is a professional army, namely an army that is well trained, educated, equipped, not in practical politics, not in business, and guaranteed welfare, and follows state political policies that adhere to the principles of civil supremacy democracy, human rights, provisions of national law, and ratified international law. Air Force intelligence personnel as part of TNI personnel must have the ability to carry out tasks, especially in the implementation of an air operation. To realise the ability of intelligence personnel, each intelligence personnel must be properly educated and trained.

¹ Kholifah, S. (2020). The discourse of NKRI (The Unitary State Republic of Indonesia) and caliphate in the Indonesian context. *Masyarakat, Kebudayaan Dan Politik*, 33(3), 299–308. <https://doi.org/10.20473/mkp.V33i3.2020.299-308>

² Timang, Y., Widayati, W., & Darmadi, N. S. (2022). The Criminal Policy in Efforts to Overcome Crimes Perpetrated by the Indonesian National Army. *Law Development Journal*, 4(3), 480. <https://doi.org/10.30659/ldj.4.3.480-494>

The Air Force as an integral part of the Indonesian National Army as the People's Army, Fighting Army, National Army and Professional Army in charge of upholding the sovereignty of the state, maintaining the territorial integrity of the Unitary State of the Republic of Indonesia based on Pancasila and the 1945 Constitution of the Republic of Indonesia, and protecting the entire nation and all Indonesian spilled blood from threats and disturbances to the integrity of the Unitary State of the Republic of Indonesia.

The Indonesian National Army Air Force (TNI AU) in ensuring the sovereignty and territorial integrity of the Unitary Republic of Indonesia carries out the development and development of air matra power. The implementation of the task is realised in the activities of War Military Operations (OMP) and Military Operations Other than War (OMSP). The development of air matra power to support air operations requires directed, sustainable and integrated development of strength and capabilities so that the ideal TNI AU posture.³

For a country, airspace is very important because it is related to sovereignty and the economy, especially aviation traffic, both domestic and international flights. Aviation is a unified system consisting of the utilisation of airspace, such as aircraft, airports, air transport, flight navigation, safety and security, the environment as well as supporting facilities and other public facilities. The Indonesian National Army Air Force strives to build and develop air power, especially in supporting air operations, in maintaining the sovereignty and territorial integrity of the Unitary State of the Republic of Indonesia.⁴

2. Theoretical Framework

In line with its objectives, this research adopts a descriptive approach with a normative legal research methodology, supplemented by sociological legal research. By employing this framework, the study endeavors to provide a comprehensive understanding of airspace surveillance within the Indonesian context.

3. The Nature of Airspace Surveillance Through Intelligence for the Defence and Security of the Territory of the Republic of Indonesia

³ Ruslana, R. R., Dwiyanto, H., & Mansyah, A. (2022). 52 INTEROPERABILITY OF COMMAND TROOPS WITH COMBAT AIRCRAFT AND HELICOPTER PERSONNEL IN SUPPORTING COMBAT SEARCH AND RESCUE OPERATIONS. *Strategi Pertahanan Udara*, 8(1). <https://doi.org/10.33172/jspu.v8i1.1049>

⁴ Ximenes, J. F. L., Darmawan, W. B., & Akim. (2019). The role of the Indonesian Air Force in safeguarding the border area of the Republic of Indonesia in East Nusa Tenggara (Ntt). *Central European Journal of International and Security Studies*, 13(4), 79–90. <https://www.mendeley.com/catalogue/14dd2948-f822-320a-9e00-bc4341f8b637/>

A country's air power has an important role in defence. Control of airspace and its utilisation for the Air Force is very useful and is one of the key factors in the success of an operational mission in the form of Military Operations of War (OMP) or Military Operations Other than War (OMSP). The advantages of air power which are the hallmark of the Air Force are fast movement, reachability at all points and all regions of the country with high flexibility. These advantages greatly support the implementation of air operations tasks.

TNI Air Force in conducting air defence divides the area into several parts. Based on the Decree of the Commander of the National Air Operations Command Number Kep/97/ VII /2023 concerning Air Defence Operation Standing Procedures, the Air Defence Area is divided into several air defence sectors on the basis of control capabilities and geographical conditions of the Republic of Indonesia.⁵

In order to achieve layered defence in an air defence sector, the air defence area is divided into three air defence areas based on the capabilities of the Air Defence Weapon System Main Equipment owned, namely; Outer Air Defence Area, Main Air Defence Area, Inner Air Defence Area. Air intelligence activities include aerial observation, aerial surveying and mapping, special intelligence, and aerial reconnaissance. The sources of information for the implementation of air intelligence consist of four sources, two of which are Geospatial Intelligence consisting of Imagery, Imagery data, and geospatial information; and Signal Intelligence consisting of Communication Intelligence, Electronic Intelligence, and Signal Intelligence of foreign instrumentation through remote sensing using manned or unmanned aircraft and remote sensing or satellite technology.⁶

Air intelligence is responsible for collecting, analysing and disseminating information on relevant air activities, including airspace surveillance. Their role includes:

1. Threat Detection: Air intelligence collects data on adversary air activities, including combat aircraft, drones, and missiles, to detect potential threats to national security.
2. Operational Monitoring: They monitor own and enemy air operations, ensure compliance with international regulations and bilateral agreements, and track suspicious activities.

⁵ Fadhiil, Muhammad Dzaki (2022) "PELAKSANAAN AIR DEFENCE IDENTIFICATION ZONE (ADIZ) SEBAGAI UPAYA PENEGAKAN HUKUM WILAYAH UDARA NEGARA MENURUT HUKUM INTERNASIONAL," "Dharmasisya" Jurnal Program Magister Hukum FHUI: Vol. 2, Article 21. Available at: <https://scholarhub.ui.ac.id/dharmasisya/vol2/iss1/21>

⁶ Didi Rahmat Sabaruddin, Lembaga Penerbangan Dan Antariksa Nasional Untuk Mendukung Tugas Intelijen Udara, *Jurnal Strategi Pertahanan Udara*, Vol. 8, No 2, 2022, hlm. 33

3. Tactical Support: Air intelligence provides real-time information to military commanders to support decision-making in air operations, including targeting and manoeuvres.

Air intelligence tasks are operational tasks carried out in an integrated manner in which the Air Force as the main component is assisted by reserve components and supporting components. In order to support the task of the Air Force in the task of air intelligence, cooperation is carried out with ministerial and non-ministerial institutions that have the ability to support the presentation of air intelligence data, one of which is cooperation with the National Institute of Aviation and Space (LAPAN).

Cooperation between LAPAN and the Indonesian Air Force in order to support air intelligence tasks, carried out by the Remote Sensing Data Technology Center (Pustekdata Inderaja) and the Indonesian Air Force Security and Coding Service (Dispamsanau) regarding the use of remote sensing technology and data. This cooperation aims to carry out supervision and security of the entire national territory in a fast, precise, accurate and integrated manner; Increase the capacity of Human Resources in the field of aerospace science and technology; Utilize aerospace science and technology for the benefit of image intelligence and signal intelligence; Obtain and present the latest strategic data on earth images related to national defense and security. as for the objects of this cooperation include the provision of remote sensing data to support Dispamsanau tasks, and education and training in remote sensing data processing to support Dispamsanau tasks.⁷

The implementation of Air Force intelligence is always related to technological development and is guided by the intelligence cycle and the implementation of air intelligence investigations. The explanation of the intelligence process is as follows:

- a. Planning Stage This stage is an initial activity carried out with the aim of providing understanding and understanding for the collecting agency in carrying out the task, so that it can be carried out in a directed manner and get maximum results. Activities carried out at this stage include the formation of the collecting agency, user briefing to the collecting agency concerning intelligence needs, namely the main elements of information (UUK) and Other Intelligence Needs (KIL), Information Collection Plan, and Target Operations (TO).
- b. Collection Stage Collection is an activity carried out by the collecting agency to search for, collect information material from

¹⁴ ⁷ Haryanto, H. I., Hidayat, T., Bainus, A., & Sudirman, A. (2022). Indonesian Air Defence: The Role Of Stakeholders And The Development Of Indonesia's Air Defence Supporting Industry. Journal of Vytautas Magnus University, 15(1), 587–600.
<https://www.mendeley.com/catalogue/3a76c985-78e1-30da-a22d-5ea6463f9e18/>

various sources of information by means, properties, techniques, and other methods as well as making intelligence reports, as for the activities are as follows:

1. The nature is carried out openly and closed.
2. Tactics used through human approach (Human Intelligence), technological intelligence, Imagery, and Signal intelligence and combined.
3. Techniques used through observation, reconnaissance, interview/elicitation, and intelligence research.

In order to obtain information that is effective and timely, appropriate tactics and techniques are needed in collecting information that is tailored to the target situation and access to the target. These tactics include matbar, interview, interrogation, tracking, infiltration, reconnaissance and wiretapping. Sources of information can come from the unit itself or outside which is guided by the value of trust consisting of individuals, organizations, manuscripts, goods and activities.

- c. Delivery Stage At this stage, air intelligence products are delivered to users and authorities either orally or in writing, in a timely manner so that they can be used effectively and efficiently by users. The method and means of delivery are determined according to the level of usefulness of the air intelligence product and in a way that is simple, safe, fast, and accurate according to needs. As a function, intelligence is related to early sensing or better known as the early warning system. This will result in intelligence having the task of collecting, analyzing and providing the necessary information to policy makers in determining the best policy to achieve goals. In addition, counterintelligence itself is a preemptive activity that is secret. Its purpose is to narrow the space for movement, counteract, thwart, and destroy the opponent's intelligence operations.

Enforcement of air security violators is an action taken by the Indonesian Air Force (TNI-AU) to organize and regulate unauthorized airspace violations. Airspace violations can be in the form of unauthorized aircraft entries or violating flight rules. For example, in 2015, Russia violated Turkey's airspace and shot down a Russian-made warplane. The TNI-AU has the duty to take action against airspace violations, including conducting "force down" actions (the act of arresting aircraft that violate airspace) and making arrests of the crew involved. The TNI-AU also has the task of maintaining the security of national airspace and regulating unauthorized airspace violations, such as aerial intrusion and violations of flight navigation. The Indonesian Air Force (TNI-AU) takes action against airspace violations by detecting, identifying, and taking action against aircraft that violate the Republic of Indonesia's airspace. TNI-AU has radar

facilities and the ability to detect and identify air vehicles that violate the air blood of the Republic of Indonesia.

In Law No. 34 of 2004 concerning the Indonesian National Army, the TNI-AU has the authority to deal with violations of national jurisdiction. Active Air Defense operations include detection, identification, and prosecution activities, as well as prevention of predicted impacts caused by airstrikes. TNI-AU also has the ability to stop foreign civilian aircraft when passing through Indonesian territory. The Indonesian Air Force (TNI-AU) prosecutes airspace violations with operations consisting of three main facilities: Active Air Defense Operations (OPUA), Passive Air Defense Operations (OPUP), and Support Air Defense Operations (OPUD), the description is as follows:

1. Active Air Defense Operations (OPUA): OPUA conducts "force down" actions (actions to capture aircraft violating airspace) and arrests the crew involved.
2. Passive Air Defense Operations (OPUP): OPUP stops foreign civilian aircraft when passing over Indonesian territory without permission.
3. Operation Air Defense Support (OPUD): OPUD stops foreign civilian aircraft that violate flight rules.

4. The Effectiveness of Airspace Surveillance Through Intelligence on the Defense and Security of the Territory of the Republic of Indonesia

The Air Force has an important role in upholding sovereignty in airspace. Based on the research conducted, the Air Force has the authority and responsibility to enforce sovereignty and law in Indonesia's national airspace. The Air Force also has the ability to detect, identify, and take action against all air vehicles that violate the NKRI's air blood. Air Force Air Defense operations consist of two parts: active operations and passive operations. Active operations include detection, identification, and prosecution activities, while passive operations consist of setting up firewall functions and a strong understanding of the blueprint for fostering information systems which is realized by validating cyber organizations.

The empirical data on violations in Indonesian airspace, and categorized as violations of Airspace Sovereignty from the results of data and information collection activities as referred to above have been compiled in the form of an inventory list of problems, including:⁸

1. In 2003 there was an incident of US F18 Hornet entering Indonesian airspace without permission and disrupting civil

⁸ Devi, A. F. (2022). THE AIR DEFENSE IDENTIFICATION ZONE (ADIZ) INDONESIA IN ORDER TO ENSURE SECURITY IN THE AIR REGION JURISDICTION OF NATIONAL JURISDICTION. *Strategi Pertahanan Udara*, 8(1). <https://doi.org/10.33172/jspu.v8i1.1047>

aviation over Bawean Island. On July 3, 2003, Indonesian Air Force radar captured the movement of five US Navy F-18 Hornet aircraft in Indonesian airspace. The five aircraft were caught in combat formation. However, they had not yet been identified and suddenly the five aircraft disappeared from the radar. As a result of disappearing from the radar, Kosek Hanudnas II did not report the incident to the Center. Suddenly, about three hours later the existence of the five aircraft.

The flight of the US warplane even caused two airlines, Bouraq Indonesia and Mandala Airlines, to protest because it disrupted international flight routes. Moreover, the flight was not reported to the nearest ATC so that the fighter's black flight was very suspicious. The Indonesian Air Force immediately airlifted two F16/FightingFalcon fighters from Iswahyudi Madiun Airbase to conduct visual identification and asked to avoid confrontation with the US Navy aircraft. Shortly after takeoff, the two Air Force aircraft were immediately targeted and locked on by the F-18/Hornet. Not only was the F-18/Hornet targeted, but the Hornet also jammed the aircraft (shutting down radio communications), which was successfully anticipated by TNI AU pilots. Various maneuvers were carried out by TNI AU aviators to escape the lockdown. Starting avoidance maneuvers such as hard breaks to the left and right, or zig-zagging which can cause the crew to be exposed to gravity effects up to 9 G-Force, or nine times the Earth's gravitational pull. After performing various maneuvers, the Air Force pilots finally gave the signal of rocking the wings up and down, to show they were not a threat to the US F/A 18 Hornet. About a minute later, the two F-16s managed to communicate with the two Hornets that intercepted them.

2. In 2008 there were several cases of airspace sovereignty violations, including: a) Unauthorized flight of Partenavia P-68 Viper aircraft at Mopah Airport, Merauke; b) Unauthorized flight of helicopter type R22 Registration ZK-IAH (New Zealand) in 2008 in West Sumatra. The process was transferred to the investigation stage at the West Sumatra Regional Police, but in 2013 an Order to Discontinue Investigation was issued;
3. On December 14, 2010, there was a violation of airspace by a Malaysian commercial aircraft with the type of BAE 146-200;
4. In 2011, there were several cases of violation of the sovereignty of Indonesian airspace;
 - a. Forced landing of aircraft at Sultan Hasanuddin Makassar Air Base Boeing 737-300 Registration AP-BEH belonging to Pakistan Air transporting UN troops crossing Indonesian airspace without permission;

- b. Falcon 900 aircraft belonging to Papua New Guinea violated airspace on November 29, 2011 and was intercepted by Sukhoi owned by the Indonesian Air Force;
 - c. Airspace and ADIZ violations committed by Australian military aircraft RAAF AP-3C when carrying out SAR missions on December 19-20, 2011 in the South of Java. Previously, Australia had made an agreement with Basarnas, one of the substances of which allowed Australian aircraft to access Indonesian airspace without being equipped with licenses as required by laws and regulations. The agreement did not involve the Ministry of Foreign Affairs, Ministry of Transportation, and TNI, causing problems in the field; In 2011, there were several cases of violation of the sovereignty of Indonesian airspace;
5. In 2013 a US military aircraft Jet Dornier Do328 110 landed without having security clearance at Sultan Iskandar Muda Airport, Banda Aceh; not only that, until 2022 there are various kinds of air violations committed by neighboring countries, which makes peace in Indonesian airspace must get extra care from the Air Force.

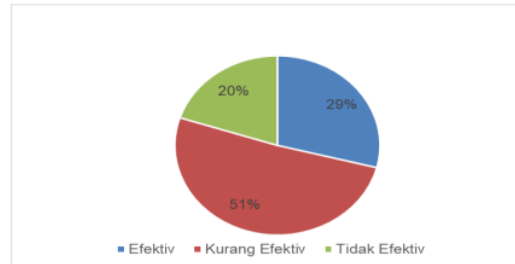


Diagram 1:

Effectiveness of Airspace Surveillance by Air Force Intelligence

According to the data above, the respondents' opinions stated that 51% stated that it was less effective, 29% stated that it was effective, and 20% stated that it was not effective. The capabilities of the Indonesian Air Force are currently not comparable to Indonesia's vast airspace so that only some potential airspace violations can be detected and dealt with. The Ministry of Defense's Minimum Essential Force development document states that to be able to counteract various actual threats and in

line with limited resources, by 2024 the minimum air power of the Air Force must be supported by 32 radar units and 11 fighter squadrons.

Recent incidents of airspace violations have reminded the government of the vulnerability of Indonesian airspace. For example, a civilian Gulfstream IV aircraft was detected to have entered Indonesian airspace without permission. The aircraft, numbered HZ103, departed Singapore for Darwin, Australia, before heading to its final destination in Brisbane. The Indonesian Air Force sent two Sukhoi fighter planes from Air Squadron 11 Makassar to conduct an ambush and forced landing. Realizing it was in pursuit, the foreign aircraft increased speed instead of giving information to the approaching TNI AU aircraft. Conducting a chase until passing El Tari, Kupang, the two Sukhoi TNI AU aircraft managed to force the foreign aircraft to land at El Tari Airport. The attitude of the foreign aircraft reflects their lack of respect for the sovereignty of Indonesian airspace. The limitations of military radar mean that such violations are very common, with foreign aircraft often crossing Indonesian airspace without complete documents and permits.

In 2014 alone, the Indonesian Air Force has pursued foreign aircraft that crossed Indonesian airspace without permission several times, including a Beechcraft training aircraft from Singapore in October. Two Sukhoi aircraft from Batam Air Base conducted a chase that finally forced the foreign aircraft to land at Supadio Air Base, Pontianak. A week earlier, Sukhoi Air Force also chased a foreign training aircraft on the Australia-Philippines route. Before being successfully forced to land at Sam Ratulangi Airport, Manado, Sukhoi pilots had locked the target aircraft because they refused to land. In early 2014 the Air Force also detected a foreign aircraft type Swearingen SX 300 that entered Indonesian airspace without permission. The Air Force responded by flying two F-16 fighters and intercepting the foreign aircraft west of Meulaboh, Aceh, which then forcibly landed them at Soewondo Air Base, Medan.

Based on the Decree of the Commander of the National Air Operations Command Number Kep/96/VII/2023 concerning the Standing Procedures for Law Enforcement Operations and Airspace Security, Airspace Violations are all aircraft and/or air vehicle activities that violate the Airspace in accordance with statutory provisions. For everyone who commits a violation in operating aircraft and/or air vehicles in the Airspace will be subject to criminal sanctions.

Based on the research results, there are law enforcement problems among law enforcement⁹ agencies on airspace violations, especially related to investigations. There are Investigation Constraints In handling

⁹ Mappong, Z. (2023). Regulation on the Fund of Corporate Social and Environmental Responsibility. *Revista De Gestão Social E Ambiental*, 17(9), e03675. <https://doi.org/10.24857/rgsa.v17n9-020>

cases of forced landing of foreign aircraft in Indonesian territory, so far the investigation has been carried out by Aviation PPNS under the Directorate General of Civil Aviation of the Ministry of Transportation. The authority of this PPNS is based on Article 399 of Law No. 1 of 2009 concerning Aviation which regulates certain Civil Servant officials within the agency whose scope of duties and responsibilities in the field of aviation are given special authority as investigators of criminal acts as referred to in this Law.

According to current regulations, after the investigation process is carried out by the Air Force, the case is handed over to the aviation PPNS for the investigation process. However, until now, that process has never happened. Indeed, justice has never been realized.¹⁰ The absence of a judicial process against air violations that often occur in the territory of the Republic of Indonesia suggests weaknesses in law enforcement. Therefore, to strengthen the law enforcement mechanism in the airspace of the Republic of Indonesia, it is necessary to make a series of efforts starting with granting authority to the Indonesian Air Force as an investigator, especially with regard to violations of the territory. If this authority has been granted, the Air Force will follow up with the preparation of personnel and all the tools, naturally, other related parties will follow. So far, cases of airspace violations have been handled by the Aviation PPNS at the Ministry of Transportation.

The granting of authority only to PPNS Aviation is felt by some parties to be one of the inhibiting factors in law enforcement for aircraft forced to land in Indonesian territory. The Indonesian Air Force, which carries out interception and initial investigations, is not involved in the investigation process. This is ironic because the Air Force actually knows in detail the violations committed by the aircraft while in Indonesian airspace and the Air Force also has technical knowledge related to this matter.¹¹

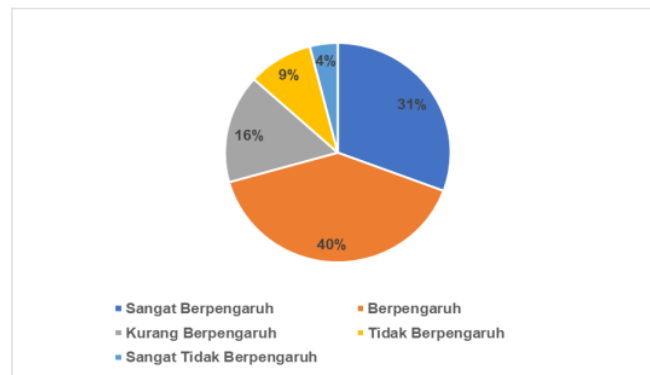
Article 10 of Law No. 34 of 2004 concerning the TNI, has stipulated that the TNI AU is tasked with carrying out air matra duties in the field of defense, enforcing the law and maintaining security in the airspace of national jurisdiction. However, in this case, the TNI AU is not involved because it is not authorized by Law No. 1/2009 concerning Aviation. Then, in PP No. 4/2018, it is stated that the authority of the TNI AU is only limited to the initial investigation, namely checking documents, checking aircraft and checking crew and passengers. Therefore, the TNI AU needs to be involved as an Investigator in handling cases of airspace violations related

¹⁰ Razak, A., Perdana, T., Rahman, A., & Thalib, H. (2024). The Nature and Existence of Jurisprudence in State Administrative Courts in Indonesia. *Revista De Gestão Social E Ambiental*, 18(7), e05365. <https://doi.org/10.24857/rgsa.v18n7-044>

¹¹ Wirsamulia, Feri (2022) "The Legal Problem of Aircraft Mortgage in Indonesia," *Indonesia Law Review*: Vol. 12: No. 1, Article 2. DOI: 10.15742/ilrev.v12n1.2 Available at: <https://scholarhub.ui.ac.id/ilrev/vol12/iss1/2>

to defense, the TNI AU Legal Service conducted a Legal Study on the Urgency of the TNI AU as an Investigator in Airspace Violations by Foreign Aircraft. The required arrangements related to the investigation are the investigation of criminal acts in the field of Airspace Management carried out by investigators of the Indonesian National Army Air Force officers, investigators of the Indonesian National Police, and / or civil servant investigators within the agency whose scope of duties and responsibilities in the field of aviation. Air Force investigators will coordinate with the public prosecutor. The implementation of the investigation by the Civil Servant Investigator is under the coordination and supervision of the investigator of the Indonesian National Police and submits the results of the investigation to the public prosecutor through the public prosecutor.

Diagram 2
The Effect of Legal Substance Factors on Effectiveness of Airspace Surveillance



Based on the data above, it shows that the opinion of respondents who stated that it was very influential, amounted to 31%; who stated that it was influential, amounted to 40%; who stated that it had less effect, amounted to 16%; who stated that it had no effect amounted to 9%; and stated that it had no effect amounted to 4%. In practice and existing arrangements, it appears that the arrangements in Article 401 and Article 402 of Law Number 1 of 2009 concerning Aviation only regulate acts of violation of airspace in restricted and limited airspace, but violations of Indonesian airspace as a form of violation of sovereignty have not been regulated. In addition, violations of Indonesian airspace are only against aircraft, both domestic and foreign aircraft, not including air vehicles, even though in practice there are violations committed using air vehicles.

So far, there has been no criminal regulation regarding air violations of Indonesian territorial sovereignty. The unregulated criminal offense is based, among others, on good relations between countries in international agreements. This reason is in principle not appropriate because the 1944 Chicago Convention has actually stated that a country has full and

exclusive sovereignty over the airspace above its territory and has the right to impose sanctions on it in the event of an airspace violation.

5. Conclusion

The nature of airspace surveillance through intelligence on the defense and security of the Territory of the Republic of Indonesia is airspace surveillance through intelligence in the context of preventive action in airspace surveillance, which is called the *Air Defense Identification Zone* (ADIZ). The effectiveness of airspace surveillance through intelligence on the defense and security of the territory of the Republic of Indonesia is airspace surveillance through intelligence on the defense and security of the country because the capabilities of the Indonesian Air Force are currently not comparable to the vast airspace of Indonesia so that only some potential airspace violations can be detected and acted upon.

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