STRENGTHENING TOTAL PEOPLE'S DEFENSE AND SECURITY SYSTEM IN THE INDUSTRIAL REVOLUTION ERA 4.0 TO FACE THE THREAT OF SIXTH GENERATION WAR

Ryamizard Ryacudu
Universitas Pertahanan Republik Indonesia
IPSC Area Sentul, Bogor, West Java, Indonesia 16810
ryamizard.ryacudu@idu.ac.id

I Nengah Putra
Universitas Pertahanan Republik Indonesia
IPSC Area Sentul, Bogor, West Java, Indonesia 16810
nengah.putra@idu.ac.id

Susilo Adi Purwantoro
Universitas Pertahanan Republik Indonesia
IPSC Area Sentul, Bogor, West Java, Indonesia 16810
susilo.purwantoro@idu.ac.id

Abstract
Revolution couldn’t be separated in the history of the struggle of the Indonesian nation. Experience and real evidence that the involvement of every component in the elements of the nation plays a crucial role in making Indonesia be one of the great countries in the world. This experience was adopted into a state defense system known as the Total People’s Defense and Security System. Growing globalization could be a threat to a country’s sovereignty, mainly in the era of the sixth genealogy war. The purpose of this study is to develop knowledge about the importance of strengthening Sishankamrata (Total People’s Defense and Security System) in presence of industry 4.0. The method used in this study is descriptive qualitative analysis through literature studies with the development of thinking through literature studies and research tour of duty. In this study, the PMESII and VUCA construction is used. The result of this study is confirmed that strengthening Sishankamrata was needed to improve the readiness of the national defense strategy in facing the threat of the sixth-generation war. This strengthening includes strengthening the posture and capabilities of the main components, reserve components, and supporting components, and strengthen state defense as a foundation in Sishankamrata by optimizing national insight integrated with every policymaker.

© 2021 Published by Indonesia Defense University
INTRODUCTION

Indonesia is one of the countries that has evolved to fight for its independence which is represented by the struggles of all Indonesian people against invaders (Sulistiyono, 2018). A revolution is defined as a change in state administration (government or social conditions) that is carried out by forces such as armed resistance. The background of the struggle and revolution in Indonesia with several colonizers like the Netherlands and Japan, for more than 350 years, a valuable lesson for the nation as well as a traumatic memory for the Indonesian people (Reza, 2017).

World War II began on September 1, 1939, when Germany attacked the western side of Poland. At that time Germany was led by Adolf Hitler. The attack sparked British and French declarations of war on Germany. A year later, along with the Soviet Union, Germany managed to occupy. However, the alliance of the Soviet Union and Germany did not last long. World War II affected the situation in Indonesia at that time which was still occupied by the Dutch East Indies Government. Because of the need for war logistical supplies, Japan tried to control Indonesia. After winning the terrible "Battle of the Java Sea", finally on March 9, 1942, the Dutch East Indies government surrendered to Japan (Zuhdi et al., 2018).

From 1945 to 1949, the Indonesian nation experienced a revolution and a decolonization war. The situation in Indonesia at the end of the proclamation of August 1945 was uncertain, Japan was technically still in control, and on the other hand, the Indonesian nation was still waiting for the arrival of Allied troops. However, in many areas, Indonesian nationalists have taken control of Japan (Oostindie, Hoogenboom, & Verwey, 2018). Based on the Civil Affairs Agreement of 15 September 1945, Britain as the Allied representative arrived in Jakarta. The presence of these Allied troops was accompanied by NICA (Netherlands Indies Civil Administration). Since that time the movement, the process of people’s struggle to expel the invaders has been carried out massively. Even though they did not have their armed forces before Indonesia’s independence, the people were already actively taking up arms and fighting in various regions. Likewise, when Indonesia became independent and had its military power, the people continued to participate in defending independence. Major battles have been recorded in the historical trajectory where the military and people work hand in hand against foreign military invasions. These battles include the Five-Day Battle in Semarang on 15-19 October 1945, the 10 November Incident, in Surabaya on 10 November 1945, Palagan Ambarawa, in the Ambarawa area, Semarang on 12-15 December 1945, Bandung Lautan Api in the Bandung area on 23 March 1946, the War on Military Aggression I from 21 July to 5 August 1947, the war on Military Aggression II on 19-20 December 1948 and the General March 1, 1949, in Yogyakarta on March 1, 1949.

The battles that have been carried out show and prove how the people were persistently willing to sacrifice body and soul in defending Indonesia’s independence. Another thing is so another thing how the people are actively involved in fighting and war is during times of military aggression. The implementation of guerrilla warfare involving the Indonesian military and the people became a powerful weapon against the new form of colonialism in Indonesia. Under the leadership of General Soedirman, Indonesia failed to be overrun by military invasion. This guerrilla war tactic is the embryo of the Indonesian National Defense System. Therefore, this tactic was adopted Indonesia’s defense strategy. This is none other than because of proof that with guerrilla war tactics that involve all components and elements of our nation, we are free from the temptation of re-colonization with various motives (Putro,
The modern era, which is full of dynamics, the rapid development of science and technology and the presence of industry 4.0 in the field of communication and information without borders, creates uncertainty, ambiguity, and information as well as high complexity in the global, regional and national, contributing to the vulnerability of threats to state sovereignty. The sixth-generation war which is very closely related to communication and information is very likely to happen at this time. The emergence of external threats cannot be seen frontally in this war, threats can be in the form of threats from the state or non-state (Anbumozhi & Kimura, 2018).

War predictions of Mandala are not only in the land mandala but also inland, sea, and air as well as the cyber environment. The cyber marks the first step in the sixth generation of warfare. In complexity, uncertainty, and very high ambiguity, the threat of a proxy war becomes real, if the proxy war that is launched is responding well by the community then the threat to the nation's disintegration cannot be avoided. With the existence of disintegration, it is very easy for outside understanding and influence to enter into the social order, where the social order is the lifeblood of a nation. The involvement of all components and elements of the nation is needed to stem the rate of proxy war which can enter the public information environment at any time.

The national defense strategy that carries the total people’s defense and security system mandated by the 1945 Constitution requires a systemic defense strategy. Strengthening the Total People's Defense and Security System (Sishankamrata) is needed to increase the readiness of the national defense system in facing external threats and influences. Strengthening the system is done by strengthening the posture and abilities of every defense component. The most important is the strengthening of the foundation in the implementation of the defense system. The foundation in question is the possession of a high sense of state defense or nationalism for all Indonesian people in their participation in the national defense system. State defense can be obtained through knowledge of national insight which can be obtained through formal and informal education. Knowledge of national perspectives requires intervention from the government through the stakeholders. Therefore, the knowledge of national insight the spirit of state defense continues to grow in the souls of all Indonesian people. This study aims to develop knowledge about the importance of strengthening Sishankamrata (Total People’s Defense and Security System) in presence of industry 4.0.

METHODS
Some of the literature used as support in conducting this research such as Triswan Larossa’s research (2017) entitled The Future Defense System for the Indonesian Nation-State states that every nation-state is responsible for building its defense system to face real threats that are physical to psychological. Indria Samego Research (2015) entitled Sishanneg Contextualization: Empowerment of Defense Areas in a Change Perspective. Stating that the problem of increasing the main weapon system (alutsista) is one thing. The extent to which we have also evolved in this regard, over time. However, another issue that is no less important is the involvement of several other components of defense, especially human resources, as well as natural and artificial resources. Ladlul Muksis in’s research (2020) explains that the National Defense System (Sishanneg) needs to be maintained in national defense and defense policy. Hermina Manihuruk’s research (2020) explains the Strengthening of the Republic of Indonesia's National Defense System through the Implementation of the State Defense Policy. This study explains that State Defense is a state behavior and behavior imbued with love for the Unitary States of the Republic of Indonesia.
Indonesia with the foundation of Pancasila and the 1945 Constitution in the survival of the state as a whole. Research by Arthur N Tulak (2003) entitled State Defense Forces and Homeland Security states that the State Defense Forces has been integrated with the state at the level of emergency management and consequence management plans of several states and territories that maintain this power. Ricky D. Fauzi’s (2021) research entitled Role Regional Autonomy in Total People's Defense and Security System (Sishankamrata) states that the determination to protect and defend the country from all threats - both symmetrical and asymmetrical that can disrupt the nation's sovereignty and order is the obligation of all citizens without exception.

Thus, the existence of the military in the order of life as a nation and state is absolute. Fitzgerald’s research entitled The Russian Military’s Strategy For “Sixth Generation” Warfare (1994) states that the sixth-generation warfare will be equipped with advanced weaponry, early warning, defense, and reconnaissance assets, and space-based weaponry to destroy enemy targets separately. This condition can cause defeat to the enemy, at a low cost and without having to occupy enemy territory.

**National Defense Strategy**

Law No. 23 of 2019 defines state defense as all efforts to uphold state sovereignty, the territorial integrity of the Unitary State of the Republic of Indonesia, and the safety of the entire nation. The existence of dynamic forms of threats faced is a consideration in national defense efforts. The development of the strategic environment always brings changes to the complexity of threats, both military and non-military threats. The condition for realizing and defending the entire territory of the Unitary State of the Republic of Indonesia as a unit of defense is a function of national defense.

The national defense system places the Indonesian National Armed Forces (TNI) as the main component, supported by a reserve component and supporting components is facing military threats. The implementation of the total people's defense and security is a total defense system that is prepared early by the government and is carried out in a total, integrated, directed manner, and protects the safety of the entire nation from any threats by involving territory and other national resources, as well as the roles of all citizens (The Law of the Republic of Indonesia Number 23 of 2019, n.d.).

**Industrial Revolution 4.0**

The history of the industrial revolution starts from industry 1.0, 2.0, 3.0, to industry 4.0. The industrial phase is the stage of a change in human life. There is a change in the agricultural and handicraft economy to industry and machine manufacturing as the sign of the start of Industry 1.0. Industry 2.0 is characterized by the adoption of quality standards and mass production. The flexibility of automation and robot-based manufacturing to adapt to social conditions marks the beginning of the 3.0 industrial revolution. Industry 4.0 is adjusted to replace industry 3.0 which begins with the ability to collaborate in manufacturing and cyber-physics (Hermann, Pentek, & Otto, 2016). The term industry 4.0 comes from the German government which initiated a project to promote the computerization of manufacturing.

Lee et al (2013) explain that four factors encourage an increase in manufacturing digitization as a sign of the start of industry
4.0. the four factors, namely: 1) increasing the volume of data, connectivity, and computing power; 2) there are analytical skills and business intelligence; 3) there is integration and interaction between humans and machines; 4) application of digital transfer patterns into robotics and 3D printing. Lofler and Tschiener (2013) added that combining machines, workflows, and systems, by implementing an intelligent network along the chain and production processes to control each other independently is a basic principle of the industrial revolution 4.0 (Figure 2).

Hermann et al (2016) added that the principle of the industrial revolution has four designs, namely First, the existence of human interconnection between one another through the Internet of Things (IoT) or the Internet of People (IoP) which is combined with the capabilities of machines, devices, sensors, and people to connect and communicate. This principle requires collaboration, security, and standards. Second, there is an increase in the capabilities of digital models with sensor data including data analysis and provision of information as the ability of information systems to create virtual copies of the physical world. Third, technical assistance which includes, (a) the application of appropriate decision making and solving problems in a short time as a system to support humans in combining and evaluating information, (b) the system's ability to support humans by performing various tasks so that there is no longer physical fatigue, theft, and a high level of security, (c) the ability includes visual and physical aids. Fourth, centralized decisions increase the ability of physical systems in cyberspace to make decisions and carry out tasks as effectively as possible (see Figure 3).

**Sixth Generation Warfare**

According to Russian military scientists, such as General-Major V. Selipchenko, head of the General Staff Academy's Scientific Research Department, warfare has developed for up to five generations (see Figure 4). The inclusion of infantry and cavalry without firearms was a feature of first-generation warfare. The development of firearms and gunpowder is a sign of second-generation warfare. The third generation was characterized by small arms and artillery. The presence of automatic weapons, tanks, military aircraft, signaling equipment, and powerful new means of transporting weapons became the entry

![Figure 2. Stages of the Industrial Revolution from Time to Time](source: Riskasari, Roemintoyo, & Efendi, 2020)
course, nuclear weapons. Military excellence by starting with a reliable data processing system, smart weapons, Early Warning System and air defense assets, reconnaissance, and space-based weaponry are the initial stages of sixth generation warfare. The sixth-generation aims to destroy separate targets and inflict military and political defeat on the enemy, at low cost and without occupying enemy territory (Fitzgerald, 1994).

VUCA Analyses
VUCA (Volatility, Uncertainty, Complexity, and Ambiguity) according to Nangia & Mohsin (2020) has four dimensions, the first is Volatility which can be defined as frequent, rapid, and significant changes whose duration may not be known. Secondly, Uncertainty is defined as a lack of predictability of the future, that is, a situation where events and outcomes are unpredictable. The third is Complexity, that is defined as the phenomenon of having many causal variables which result in an overloaded information network. The fourth is Ambiguity, that is defined as a lack of clarity, this is a phenomenon or situation that has more than one interpretation (see Figure 5).

PMESII
PMESII is a military acronym listed in several joint publications and services, which evolves from a systems perspective, and is equivalent to the country’s political, military, economic, social, infrastructure

Figure 3. Principles of the Industrial Revolution 4.0
Source: Prasongko & Adianto, 2019
and information systems. The acronym provides a starting point for identifying interrelated keys enemy systems and facilitates kinetic and non-kinetic analysis and targeting (Arnold, 2006). PMESII system construction applies well when there are enemies in a country. All systems will be visible and ready with the existence of a real infrastructure with conditions where Intelligence can easily identify, monitor, and carry out reconnaissance which will then be a target of weapons (Arnold, 2006).

**Method**
The method is descriptive-analytical. This research analyzed the Strengthening of the People’s Security Defense System faced with the sixth generation of warfare in the industrial era 4.0. This is important to analyze because it is related to the readiness of the defense system of the people of the Universe to face the challenges of the current conditions which have changed very rapidly, are full of uncertainty, the complexity of relationships, and lack of clarity regarding certain conditions so that strengthening was needed in the Total People’s Defense System. The technique used in data collection is a literature study. To analyze the Total People's Defense and Security System (Sişhankamrata), the Miles and Huberman model analysis technique was used. This technique was carried out interactively and continued to completion, so that the data was saturated, according to the characteristics of qualitative research. In this study, the PMESII construction is used to identify the current phenomenon. Furthermore, the VUCA aspect is used to determine the factors that influence the current defense system. The data analysis process included condensation data, display data, and conclusion drawing (Miles, M.B., Huberman, A.M., & Saldaña, 2014).

**RESULT AND DISCUSSION**

**Development of Global, Regional and National Conditions in Terms of PMESII**
The development of the strategic environment shows in general, an increasingly escalating and complex phenomenon in various parts of the world. This shows a reflection of the continuation of the previous problems caused by various factors behind it.

**Political Aspect**
a. The dynamics of strategic environmental security in the Asia Pacific Region
   From a traditional security perspective, the Asia-Pacific region has very complex opportunities and challenges, as well as risk factors that can lead to conflicts between countries. The dynamic development of the Asia Pacific region will have an impact on economic and security issues. Developments that need to be watched out for and have an impact on security stability are China's economic and military policies, strategic policies of the United States (U.S.) in the region, and disputes in the South China Sea.

b. Contemporary conflict
   The current pattern of controlling space is no longer being carried out frontally, by carrying out open attacks, but rather in an indirect way which can be in the form of a proxy war. This is done by taking advantage of advances in information technology. For example,
the Syrian conflict is increasingly using asymmetric “weapons” that are systematically controlled through propaganda on social media. This has formed a new style of divide et impera politics.

**Military Aspects**

a. Modernization of Military Power
Several countries in the Asia Pacific region are known to have implemented defense force modernization which is equivalent to better economic growth. The aim is not only for equality and achieving standardization with the alliance system, but also to anticipate the possibility of contingencies due to the uncertainty of strategic situations. Modernization of weapons systems and provocative deployments can lead to miscalculations and misperceptions.

b. Terrorism
Terrorism has become an important concentration in the defense and security sectors of various countries. This is a real threat to all countries, as exemplified by the Islamic State in Iraq and Syria (ISIS) movement which has become a force to carry out acts of violence in the name of radicalism to attack regimes that are not in line with believed dogma. So that its existence becomes a real threat to the global community.

**Economic Aspects**

a. Pandemic
The pandemic due to the Coronavirus that has hit all countries has a very important role in the economic condition of a country. The pandemic, which requires social distancing, hampers the economy’s turnaround so that it has implications for life. This can lead to high economic disparities at the community level.

b. Natural Disasters, Food, and Energy Security
Natural disasters have a wide impact on people’s lives. Potential natural disasters that can occur are mapped as follows: tsunamis, earthquakes, floods, tornadoes, drought, landslides, volcanic eruptions, and forest and peatland fires. Natural disasters often occur in several countries, are challenges and risks that will continue to be faced and need to be anticipated by each country. Food, water, and energy crises have the potential to trigger conflicts. The issue of strategic resources can become a new source of conflict and lead to a conflict of interest if it fails to manage it.

**Social Aspect**

a. Intra and Inter-State Conflict
Intra and interstate conflicts still occur in several regions of the world. Intra-state conflicts tend to escalate and transform significantly. The triggers of conflict are generally the result of political and power struggles, dissatisfaction and injustice, competition for access to resources, oppression, corruption, and the problem of the absence of democracy. Conflicts between countries such as those occurring in the East Asia region, if not resolved, may affect regional areas. Intra-state conflicts such as in Cambodia recently are the effect of dissatisfaction in politics, so that the influence can be felt in the regional area.

b. Pandemic
Currently, the world is experiencing a global crisis as a result of the pandemic caused by the Coronavirus (COVID-19). A prolonged global crisis can lead to social conflicts that can trigger intra-state conflicts. With advances in access to information that do not recognize national borders, disinformation can occur from policy-makers and the wider community so that it can lead to public distrust of the government. This can be a real threat to the integrity and sovereignty of the country. The absence of a vaccine that has proven its efficacy has made all countries compete in the manufacture of vaccines. This can become a conflict of interest in various
ways between countries, to get the best vaccine for its citizens.

**Infrastructure Aspects**

a. International Border Issues

As an archipelago country that is very open from various directions, Indonesia has several unresolved border problems. This condition has the potential to cause violations of the sovereignty of the Republic of Indonesia, especially in the land border areas of the country that have not received mutual agreement and the outermost/frontier small islands that have not been properly managed. Violation of state sovereignty in air and sea areas, such as foreign flights/ships will create tension, and can even lead to conflict.

b. Transnational Crime

Transnational crime is a threat to global security. In the regional area, this crime is a serious threat and makes vulnerability to secure stability. Transnational crime in Asia is dominated by drug trafficking and human trafficking and people smuggling. Drug trafficking can become a threat if the proceeds from the sale are used as funding for acts of terrorism.

c. Development of Science and Technology

The advancement of science and technology affects the forms and patterns of future wars supported by the industrial platform 4.0. This makes it very possible for asymmetric patterns and forms of war to still occur in several regions. The sixth-generation warfare (6th generation warfare) was heavily influenced by the development of science and technology wherein the war was characterized by accuracy, low casualties, and minimal damage impact.

**Information Aspect**

a. Espionage

Espionage is carried out to collect strategic data and information from a country by other countries to obtain strategic information and documents through various means and methods. The development of a strategic environment that is very dynamic, full of uncertainty and complexity, makes it very difficult for a country to know the potential and nature of threats and challenges to its national interests.

b. The issue of mass destruction weapons

Industry 4.0 is currently combined with developments in science and technology in the fields of Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE) to raise concerns about the creation of weapons of mass destruction. Differences in regulations from each country regarding CBRNE materials can cause a threat if the CBRNE material is used by irresponsible parties.

c. Development of Science and Technology

The advancement of science and technology affects the forms and patterns of future wars supported by the industrial platform 4.0. This makes it very possible for asymmetric patterns and forms of war to still occur in several regions. The sixth-generation warfare (6th generation warfare) was heavily influenced by the development of science and technology wherein the war was characterized by accuracy, low casualties, and minimal damage impact.

**Current condition developments through the VUCA Analysis approach**

To clarify the aspects of global, regional, and national threats in current conditions, these aspects need to be reviewed through the VUCA Analysis approach to determine which factors are included in the High and Low VUCA factors. The VUCA factor indicates (see Figure 6):

a. High priority VUCA factor is a category in the framework that shows the VUCA factor that emerges as a common challenge that is currently occurring. These factors include natural disasters, pandemics, terrorism, transnational crime, development of science and information technology as well as communication science, modernization of military forces, International Border Issues, and regional security dynamics.

b. The low priority VUCA factor is a category in this framework, indicating the VUCA factor which acts as a special treat, which means that handling it does not require overall priority in the national defense system. These factors include Issues of weapons of mass destruction, espionage, and contemporary conflicts.
RESULT AND DISCUSSION
Terrorism has become a real threat to Indonesia, several acts of terror have occurred and their actions have been properly repelled. This happened not solely as a result of strengthening the Sishankamrata in a short time but through experience and a long time. The government has implemented the strengthening of Sishankamrata against terrorists through counseling on national insight and state defense programs carried out by the supporting components, as well as tracing and deterrence carried out by the police as a reserve component.

The rapid development of science and information technology as well as communication science that is so rapid in the era of globalization, especially the implications of the current industry 4.0, brings us to major changes in the new world order that seems to be without borders, which can cross national borders.

Meanwhile, global geopolitical developments are also extremely fast and complex, thus presenting the dynamics of the development of the global, regional and national strategic environment. Threats that were originally conventional (physical) have developed into multidimensional (physical and non-physical) both from abroad, as well as from within the country or the collaboration of both, and are carried out by state and non-state actors. These threats can have ideological, political, economic, socio-cultural, technological, public safety dimensions to threats to national defense and security. Thus, war is not only a military domain but also involves the entire nation's power, because it has a wide dimensional scope. The analytical framework in the regional area can be described as in Figure 7.

Issues regarding borders are very interesting because events that occur at the border have a large political impact and often generate national sentiment. The border area has a strategic value from a defense and security point of view because it affects the country's territorial sovereignty, international relations, and domestic security stability. Likewise from a social and economic point of view because of the potential for strategic areas to improve the welfare of the community and the regional economy. An interesting
internal issue is that the existing infrastructure on the border is currently far behind with areas close to the government. This existence is a separate gap for citizens who live in border areas. This should receive great attention by strengthening Sihankamrata by making the border area a maritime potential area because most of the border areas of the Indonesian state water the regional economy. An interesting internal issue is that the existing infrastructure on the border is currently far behind with areas close to the government. This existence is a separate gap for citizens who live in border areas.

The Indonesian Ministry of Defense’s policies in building the defense industry include seven national defense industry programs, namely: fighter jets, submarines, medium battle tanks, propellants, national rockets, national missiles, and national radars. Through this policy, the Indonesian Ministry of Defense wants to create a strong, independent, and competitive defense industry with three targets, including: First, including the realization of the national strategic industry to support defense interests. Second, the realization of the domestic defense industry to fulfill the Defense Equipment Tool (Alpalhan) and support the production of equipment that supports the national economy. Third, the realization of mastery of technology and quality of human resources to support the development of the defense industry. Organizing and developing the organization is one of the aspects developed in building military defense posture. Apart from building the national defense posture, strengthening military defense capabilities is also carried out in the intelligence sector, diplomacy sector, defense sector, regional empowerment sector, and support capabilities. Strengthening the Reserve Component and Supporting Component is currently focused on the process of passing legislation. Furthermore, gradually preparing for the formation of the Reserve Component to enlarge and strengthen the strength and capability of the Main Component and the formation of the Supporting Component to strengthen the
Leadership is an integral part of strengthening Sishankamrata. Finding a leader who has statesmanship is also not easy. There needs to be an education for cadres of future national leaders from an early age that will take place consistently until adulthood by equipping students with national insight and state defense. Of course, building national insight and state defense will take years. Strengthening national insight and state defense can be installed not only through formal education but must be integrated with other policy-makers by taking advantage of technological advances in the industrial era 4.0. A real form of strengthening is through social media that use influencers to promote national insight and state defense so that the form of love education of the nation is more adapted for the younger generation. This is very relevant to the sixth generation of warfare, where the invasion does not have to be carried out frontally but through the nation’s disintegration approach so that influences and outside understandings can easily enter.

In facing various threats, especially ideological threats, it is necessary to have a concept of planting a strong and final national insight into all Indonesian people. National insight is a nation’s perspective on identity and existence among nations in the world (Wahyono, 2017). Pancasila is a solution or antidote to fix various existing problems and how to socialize them in everyday life. In the context of state resilience, this antibody is Pancasila which is implemented through the Concept of State Defense Awareness.

CONCLUSIONS AND RECOMMENDATION
Complexity, uncertainty, ambiguity, and volatility are inseparable parts of the industrial era 4.0. The implication of the National Defense System is a type of threat to sovereignty from global, regional, and regional dynamics that follow the nature of the industrial era 4.0, making it is difficult to make predictions for decision making. Strengthening the total people’s defense system is carried out to improve the readiness of the State Defense system in facing threats. Strengthening the National Defense System is carried out by strengthening the Main Components, Reserve Components, and Supporting Components. VUCA High factors in strengthening Total People's Defense and Security System (Sihankamrata), include natural disasters, pandemics, terrorism, transnational crime, the development of science and information technology and communication science, modernization of military power, the issue of Interstate Border, and regional security dynamics. Meanwhile, VUCA Low factors, likely: 1) issues of weapons of mass destruction, 2) espionage, and 3) contemporary conflicts.

Strengthening the Main Components is carried out by building a state defense posture which is realized through the development of a national defense force that is inseparable from Nawacita and the World Maritime Axis (Poros Maritim Dunia or PMD) policy. The strength of the main components is built through the modernization of the main weapon system, increased maintenance, organizational development, and support for facilities and infrastructure supported by the empowerment of the domestic defense industry, increasing the professionalism of soldiers and not less important by paying attention to the welfare of soldiers. The planting of national insight and state defense which is the foundation in the Total People's Defense and Security System (Sihankamrata) is a form of mental revolution as well as to build the nation's deterrence in facing the complex dynamics of threats, as well as to create a strong and adaptive national resilience to the times. Cultivating national insight can be done not only through formal media but also be integrated by taking advantage of developments in the era of technology 4.0.
Recommendations on future research are:

a. Further research can be carried out to determine the Total People's Defense and Security System (Sihankamrata) strengthening strategy.

b. This research is limited to a strategic strengthening of the Total People's Defense and Security System (Sihankamrata) to be able to develop a model built by this research which can be continued with technical elaboration in strengthening Total People's Defense and Security System (Sihankamrata).

c. Further research can be carried out to obtain a quantitative approach to strengthening the Total People's Defense and Security System (Sihankamrata).

REFERENCES
Anbumozhi, V., & Kimura, F. (2018). Industry 4.0: Empowering ASEAN for the Circular Economy. In V. Anbumozhi & F. Kimura (Eds.), Economic Research Institute for ASEAN and East Asia (pp. 1–402). Jakarta: Economic Research Institute for ASEAN and East Asia (ERIA).

Arnold, K. A. (2006). PMESII and the Non-State Actor: Questioning the Relevance. Fort Leavenworth: Army Command and General Staff Coll Fort Leavenworth Ks School Of Advanced.

Defense Ministry of The Republic of Indonesia. (2015). Indonesia Defense White Paper (3rd ed.). Jakarta: Defense Ministry of The Republic of Indonesia.

Fauzi, R. D. (2021). Role of Regional Autonomy in the Indonesian National Defense and Security System (Sishankamrata). Journal of Law and Legal Reform, 2(1), 15–38. https://doi.org/10.15294/JLLR.V2I1.40905

FitzGerald, M. C. (1994). The Russian military’s strategy for “sixth generation” warfare. Orbis, 38(3), 457–476. https://doi.org/10.1016/0030-4387(94)90008-6

Hermann, M., Pentek, T., & Otto, B. (2016). Design principles for industrie 4.0 scenarios. Proceedings of the Annual Hawaii International Conference on System Sciences, 2016-March, 3928–3937. https://doi.org/10.1109/HICSS.2016.488

Jari, K.-O., & Lauraéus, T. (2019). Analysis of 2017 Gartner’s Three Megatrends to Thrive the Disruptive Business, Technology Trends 2008-2016, Dynamic Capabilities of VUCA and Foresight Leadership Tools. Advances in Technology Innovation, 4(2), 105.

Lee, J., Lapira, E., Bagheri, B., & Kao, H. (2013). Recent advances and trends in predictive manufacturing systems in big data environment. Manufacturing Letters, 1(1), 38–41. https://doi.org/10.1016/j.mfglet.2013.09.005

Löffler, M., & Tschiesner, A. (2013). The Internet of Things and the future of manufacturing. McKinsey & Company, 4.

Manihuruk, H. (2020). Strengthening the State Defense System of the Republic of Indonesia through Implementation of the State Defense Policy. Natapraja, 8(2), 132–142. https://doi.org/10.21831/jnp.v8i2.35354

Miles, M.B., Huberman, A.M., & Saldaña, J. (2014). Qualitative data analysis: A methods sourcebook (3rd edition). New York: SAGE Publications, Inc. Qualitative Data Analysis, A
Methods Sourcebook, Edition 3. USA: Sage Publications.

Muksinin, L. (2020). Sishankamrata in the Indonesian State Defense and Security System from the Beginning of Independence to the Reform Period. Walisongo Law Review (Walrev), 2(2), 115–130. https://doi.org/https://doi.org/10.21580/walrev.2020.2.2.6587

Nangia, M., & Mohsin, F. (2020). Revisiting talent management practices in a pandemic driven VUCA environment-a qualitative investigation in the Indian IT industry. Journal of Critical Reviews, 7(7), 937–942.

Oostindie, G., Hoogenboom, I., & Verwey, J. (2018). The decolonization war in Indonesia, 1945–1949: War crimes in Dutch veterans’ egodocuments. War in History, 25(2), 254–276. https://doi.org/10.1177/0968344517696525

Otaiku, A. A. (2018). A Framework for Hybrid Warfare: Threats, Challenges and Solutions. J Def Manag, 8(178), 374–2167.

Prasongko, A., & Adianto, T. (2019). The Role of the Agile Leadership Model as a Competitive Advantage for the Future Leader in the Era of Globalization and Industrial Revolution 4.0. Jurnal Pertahanan, 5, 126. https://doi.org/10.33172/jp.v5i3.596

Putro, R. A. P. (2012). The Professionalisation of the Indonesian Military. UNSW Sydney.

Reza, B. I. (2017). The Total People’s Defense and Security System: Problems of State-Sponsored Militia in Indonesia. Indonesia Law Review, 2(7), 155. https://doi.org/https://dx.doi.org/10.15742/ilrev.v7n2.319.3

Riskasari, R., Roemintoyo, R., & Efendi, A. (2020). Industrial Revolution 4.0: Interactive Multimedia Use in Learning.

Samego, I. (2015). Kontekstualisasi Sishan neg: Pemberdayaan wilayah Pertahanan Dalam Perspektif Perubahan. Jurnal Pertahanan, 5(1), 1–13. https://doi.org/https://dx.doi.org/10.3172/jpbh.v5i1.345

Sulistiyono, S. T. (2018). The importance of Indonesia’s Nationalism revitalization in the globalization era: a historical perspective. Journal of Maritime Studies and National Integration, 2(1), 1–15.

The law of the republic of indonesia number 23 of 2019, , Pub. L. No. 23. Indonesia: LN. 2019. No. 211, TLN .6413, peraturan.go.id : 34 HLM.

Tulak, A. N., Kraft, R. W., & Silbaugh, D. (2003). State defense forces and homeland security. The US Army War College Quarterly: Parameters, 33(4), 10.

Wahyono, S. K. (2017). Wawasan Kebangsaan Dalam Wadah Negara Kesatuan Republik Indonesia. Jurnal Ketahanan Nasional, 12(2), 65–71.

Zuhdi, S., Kurasawa, A., Oktorino, N., Burhanudin, J., Kwartanada, D., & T.H. Siregar, A. (2018). Hubungan Indonesia dan Jepang dalam Lintasan Sejarah. Direktorat Sejarah Direktorat Jenderal Kebudayaan Kementerian Pendidikan dan Kebudayaan.