JOURNAL OF MARITIME RESEARCH

Vol XX. No. III (2023) pp 1–11

ISSN: 1697-4840, www.jmr.unican.es

Australia Nuclear-Powered Submarines, Archipelagic Waters, and the New Capital City of Indonesia

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ARTICLE INFO

Article history:
Received 22 May 2023;
in revised from 4 Jun 2023;
accepted 06 Jul 2023.

Keywords:
Innocent Passage, AUKUS, Archipelagic Waters, Submarines, Confidence-Building Measures.

ABSTRACT

In this article, the writer tries to provide insight and an Indonesian perspective on the potential impact of the nuclear-powered submarine acquisition program as part of the AUKUS Agreement. In particular, its defense and security implications on the archipelagic water's status of Indonesia's seas and 'Nusantara' as Indonesia's new capital city. The writers argue that current Indonesian regulations and interpretations of its archipelagic waters and nuclear-powered submarines present a potentially heightened threat perception on the part of Indonesia concerning the potential movement of Australia's future nuclear-powered submarines on the seas of the Indonesian archipelago and around Indonesia's new capital city of 'Nusantara'. Thus, it recommends enhanced confidence-building measures among senior officials of both countries to avoid misunderstanding between both countries. Specifically, as Australia's nuclear-powered submarines program will become fully operational by early and mid-2030's.

1. Introduction.

As a nation with thousands of islands, Indonesia has always had concerns over the waters that separate those islands. The waters that surround the islands are seen as an obstacle. Historically, Indonesia has preferred to embrace more *mare clausum* than *mare liberum* to reduce its water barrier. In the 1950s and 1960s, Indonesia proclaimed surrounding waters as internal waters[3]. A claim that had received numerous challenges and criticisms from the international community[4]. At the beginning of UNCLOS III negotiations, Indonesia brought the concept of an archipelagic state, with all the waters surrounding it as internal waters[5].

However, this effort was to no avail[6]. The package deal of UNCLOS 1982 validates the archipelagic concept with a much lower status of the surrounding waters. The convention accepts the status of those waters as archipelagic waters, in many ways similar to the territorial sea[7]. Even worse, Indonesia still has to provide its waterways, which are generally used for international navigation, to international shipping in a so-called "archipelagic sea lane passage."[8]

There are many unresolved problems regarding archipelagic sea lane passage. On the one hand, maritime powers, including Australia, always want to have a laxer regime of passage,

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[3] By enacting UU no 4 PRP 1960 tentang perairan (Law no. 4 on Indonesian waters 1960). In 1957 there was also well known Djuanda declaration which mentioned that waters surrounding Indonesian archipelago as Indonesian waters. During UNCLOS II negotiation, Indonesia and the Philippines tried to bring the concept of archipelago to the forum, but it failed.

[4] France, the U.S., the U.K., Australia, New Zealand, Japan, and the Netherland protested toward Indonesia. See: Ku, Charlotte. "The archipelagic states concept and regional stability in Southeast Asia." Case W. Res. J. Int'l L. 23 (1991): 463, page 470.

[5] Draper, Jack A. "The Indonesian archipelagic state doctrine and Law of the Sea: Territorial grab or justifiable necessity." In Int'l L., vol. 11, p. 143. 1977.

[6] The package deal of UNCLOS 1982 recognizes of interconnecting waters as archipelagic waters, not internal waters. UNCLOS 1982 is considered a huge package deal for many interests of many states.

[7] In many ways, the status of archipelagic waters is similar to territorial sea. See part IV of UNCLOS 1982.

[8] Article 53(4)(12) of UNCLOS 1982.

while Indonesia always wants to have a more restricted regime of passage. This was especially true when Indonesia submitted its archipelagic sea lanes proposal to the International Maritime Organization (I.M.O.) in 1996. Maritime powers wanted more sea lanes, while Indonesia tried to limit the number of sea lanes to just three. This ultimately resulted in the rejection of maritime powers' acceptance of the submission, and I.M.O. regards the submission as a "partial submission." While Indonesia has not made a complete submission, maritime powers will treat all the waters customarily used for navigation as archipelagic sea lanes, based on Article 53(12) of UNCLOS 1982[9]. This made Indonesia worried. Ultimately, Indonesia made some rules to eliminate the threat of passing through the waters separating its islands. These regulations, including those which govern foreign nuclear-powered vessels, Australia's plan to acquire a nuclear-powered submarine will impact relations between Indonesia and Australia. This is exacerbated by the Indonesian government's decision to move its capital city to the coast of a deep and wide strait, which will become a playground for Australia's nuclear-powered submarine in the future.

2. AUKUS, Nuclear Powered Submarines, and Indonesia's Response.

Australia has a plan to build eight nuclear-powered submarines[10]. This planning is part of a deal from the framework of Australia-the U.K.-the U.S. new alliance, AUKUS[11]. This new agreement is specifically made to curb China's increasing power in the Indo-Pacific region. However, there are some controversies behind this plan. Because of this plan, Australia had to cancel its project with France, which made France furious[12]. The nuclear-powered submarine acquisition program also invites some concern within Australia, particularly regarding environmental problems[13]. All this time, Australia has always been a leader regarding nuclear issues. Even when France conducted atomic testing in the Pacific, Australia, and New Zealand applied to the I.C.J., which is well known as the nuclear test case[14]. Even though the use of atomic energy for submarine propulsion is different from acquiring nuclear weapons, the devil is in the detail, and the point has not come up yet. By using nuclear power for its submarines, legally speaking, Australia is not in contravention of the Nuclear Non-Proliferation Treaty (N.P.T.)[15] . However, it will undermine the effort to curb using atomic energy for non-peaceful purposes. Making nuclear weapons from nuclear energy specifically used for submarine propulsion is also possible[16]. The nuclear energy used for eight submarines can be used to make around 160 nuclear warheads[17]. Not to mention, this could become a precedent for other states to follow suit.

Indonesia has expressed its deep concern and caution about this plan[18]. All of that nervousness is rational, considering that a submarine is a strategic weapon that can become an immediate threat to other states. At the heart of Indonesia's concern is the potential of these nuclear-powered submarines as an integral part of AUKUS to impact the centrality of ASEAN ways of managing strategic stability in maritime Southeast Asia, particularly ASEAN Outlook on the Indo-Pacific (AOIP). As a senior Indonesian diplomat rightly points out, 'it had portent to agitate the strategic landscape of ASEAN'[19]. In particular, Jakarta is uneasy about how mini-lateral groupings such as AUKUS could impact ASEAN centrality. This position on AUKUS is a reflection of Indonesia's strategic preference for the management of the strategic challenges of the Indo-Pacific region. Specifically, the reality is that 'beyond the AIOP, The Indonesian Ministry of Foreign Affairs (MOFA) does not seem eager to explore non-ASEAN options to engage the Indo-Pacific.' Consequently, the fact that the developments of this AUKUS nuclear-powered submarines is viewed as representing a new U.S.-led regional Indo-Pacific maritime defense architecture lies at the center of

[9] Article 53(12) UNCLOS 1982 states that "If an archipelagic State does not designate sea lanes or air routes, the right of archipelagic sea lanes passage may be exercised through the routes normally used for international navigation."

[10] Buckley, Chris. "Nuclear-Powered Submarines for Australia? Maybe Not so Fast." The New York Times. The New York Times, October 29, 2021. https://www.nytimes.com/2021/10/29/world/australia/nuclear-powered-submarines.html.

[11] Some of those deals are acquisition of Tomahawk missile for Hobart class, nuclear-powered submarine, precision strike-missile for army, and for air force. See: Davis, Malcolm, AuthorMalcolm Davis is a senior analyst at ASPI. He is on Twitter at @Dr_M_Davis. Image: US Department of Defense., Author, and Malcolm Davis is a senior analyst at ASPI. He is on Twitter at @Dr_M_Davis. Image: US Department of Defense. "Aukus: Looking beyond the Submarines." The Strategist, November 4, 2021. https://www.aspistrategist.org.au/aukus-looking-beyond-the-submarines/.

[12] "'We Felt Fooled': France Still Furious after Australia Scraps $90bn Submarine Deal." The Guardian. Guardian News and Media, September 20, 2021. https://www.theguardian.com/world/2021/sep/20/we-felt-fooled-france-still-furious-after-australia-scraps-90bn-submarine-deal.

[13] Keane, Daniel. "Nuclear Subs Have 'Long History of Accidents', Environmentalist Warns." ABC News. ABC News, September 17, 2021. https://www.abc.net.au/news/2021-09-17/nuclear-submarines-prompt-environmental-and-conflict-concern/100470362.

[14] See: "Latest Developments: Nuclear Tests (Australia v. France): International Court of Justice." Latest developments — Nuclear Tests (Australia v. France) — International Court of Justice. Accessed April 23, 2022. https://www.icj-cij.org/en/case/58.

[15] For analysis regarding Australia's nuclear-powered submarine deal and article 14 of Non-Proliferation Treaty, See: "Arms Control Today." The Australia-UK-U.S. Submarine Deal: Submarines and Safeguards — Arms Control Association. Accessed April 23, 2022. https://www.armscontrol.org/act/2021-12/features/australia-uk-us-submarine-deal-submarines-safeguards.

[16] This is especially true in the case when the new submarine will use Highly Enriched Uranium (HEU), instead of Low Enriched Uranium (LEU). See: Bergmann, Kym. "Nuclear submarines: Decision of enormous consequences taken with little analysis." Asia-Pacific Defence Reporter (2002) 47, no. 7 (2021): 12-14.

[17] An analysis by Dr. Alan Cooperman. See: Lowy Institute, AUKUS and Nuclear Non-Proliferation Seminar. YouTube. YouTube, 2022. https://www.youtube.com/watch?v=AELYOw8pa_E.

[18] Sambhi, Natalie, AuthorNatalie Sambhi is executive director of Verve Research and a non-resident fellow with the Brookings Institution's foreign policy program. Image: US Navy/Flickr., Author, and Natalie Sambhi is executive director of Verve Research and a non-resident fellow with the Brookings Institution's foreign policy program. Image: US Navy/Flickr. "Australia's Nuclear Submarines and AUKUS: The View from Jakarta." The Strategist, September 20, 2021. https://www.aspistrategist.org.au/australias-nuclear-submarines-and-aukus-the-view-from-jakarta/.

[19] Djalal, Dino P. "ASEAN Responses to AUKUS Security Dynamic." Asian Review : Diplomatic Caution, East Asia Forum Quarterly, October – December 2021, pp. 16-18.

Indonesia's concern.

3. Potential Implications of Australia's Nuclear-Powered Submarines and AUKUS on Indonesia.

A submarine is a stealth weapon. A submarine is like any other warship but in a much more vulnerable state when submerged. Once the enemy has discovered its location, it will become susceptible to attack by either a surface ship or an aircraft. It will only surface if it wants to talk to friends or go snorkeling. A submarine's battery is recharged through snorkeling. This, however, applies only to conventional submarines. Snorkeling is unnecessary in the case of a nuclear-powered submarine. A nuclear-powered submarine can dive indefinitely without coming to rest. It is simply a matter of logistics for the crews, such as the food that must be victualled. A nuclear-powered submarine has a much greater range and is much faster. Although nuclear-powered submarines are noisier than conventional submarines in some cases, their overall performance is far superior to that of their counterparts. Put another way, a nuclear-powered submarine is less vulnerable because it does not need to surface to recharge its battery.

In contrast, to surface warships, which can easily be detected using modern radar or other surveillance systems, searching for submarines while they dive under the sea is challenging. For example, it takes several days to locate the wreckage of an airliner that crashed into shallow water using the most advanced technology, let alone search for a stealthy, moving, and silent submarine in deep water. A submarine, in the past, was a type of warship that could only be used for naval warfare, targeting surface ships such as warships or merchant ships. Submarines were a nightmare for surface ships during World War I and II. A submarine today has many functions and armaments. A modern nuclear-powered submarine can even carry a nuclear warhead to destroy an entire town. Another process of a nuclear-powered submarine is to project power onto the land. A nuclear-powered submarine typically has a submarine-to-land missile capable of being launched from the depths of the ocean to land.

The most important strength of a nuclear-powered submarine compared to a conventional sub is its endurance[20]. It can go unlimited in terms of fuel[21]. With an exceptionally long stationing time, the future Australian nuclear-powered submarine could travel far north, close to Chinese waters, undetected[22]. A nuclear-powered submarine does not need to snorkel. With these two advantages, Australia's future nuclear-powered submarine will also be capable of sailing through the archipelago without snorkeling and refueling. The one thing that will make Australia's nuclear-powered submarine has a high deterrence effect is its armament, which is much better than the Collins class. She will likely carry a Tomahawk missile for a land target[23]. Even though it is not a nuclear warhead, it will still have a considerable deterrence effect[24]. With its hundred-mile range, many cities in Indonesia will certainly be within its content, including the new capital city, located on the coast of Makassar Strait. As one of the closest neighbors, Indonesia should be wary of the AUKUS agreement. Moreover, Indonesia is a vast archipelagic state with three archipelagic sea lanes and many straits and waterways that are deep and wide enough for submarine areas of operation. Even though, from a geopolitical perspective, Australia's projection is undoubtedly China[25], it should be inconvenient to see your neighbor's nuclear-powered submarine swim in front of your nose silently, significantly if it can threaten you with its subsurface-to-land cruise missiles[26].

Another dimension to these nuclear-powered submarines is how they may potentially fit in overall Indonesia's defense and security establishment consideration on the broader AUKUS agreement. First, it's not only the endurance capabilities of these nuclear-powered submarines but how Australia can ensure that it has developed an effective and independent governance regime to manage nuclear power. As the late retired admiral James Goldrick points out, 'it is not the operations of the submarines themselves that will be subject to any real loss of national autonomy in a mature system but the working of the regime's governance for nuclear power'[27]. Separately, the development of the Virginia Class SSN is also aligned with another pillar of AUKUS: the development of joint advanced undersea warfare capabilities. A noted expert on Australian defense policy has stressed that 'although the focus has been on the pathways to acquiring SSNs, this capability should be seen as a component of a system of the system in the 21st century undersea operations, whereas crewed submarines such as Virginia or SSN AUKUS boats will operate alongside smaller unmanned underwater vehicles deployed from submarines'[28]. The previous argument relates to the second, which is changes in Indonesia's maritime threat perception due to the nuclear-powered submarines. Historically, Indonesian defense establishment threat perception has been on 'Australia's sovereign

[20] Lambert, R. J. W. "Environmental Problems in Nuclear Submarines: The Nuclear Submarine Environment." (1972): 795-796.

[21] The U.S. nuclear-powered submarine for example, only need more than 30 years of replacement of its uranium. Read: Jeon, Byeongdoo, and Mojdeh Khorsand. "Energy Management System in Naval Submarines." In 2020 IEEE Transportation Electrification Conference & Expo (ITEC), pp. 802-808. IEEE, 2020.

[22] Person. "Aukus and Australia's Nuclear Submarines." The Interpreter. The Interpreter, September 27, 2021. https://www.lowyinstitute.org/the-interpreter/debate/aukus-and-australia-s-nuclear-submarines.

[23] Just like the U.K's Astute class and the U.S.'s Virginia class, Australia's future nuclear-powered submarines will also carry tomahawk cruise missile for surface and land target. See: Patrick, Aaron. "Australia's Eight Nuclear Subs Will Be Designed to Outclass China." Australian Financial Review, September 16, 2021. https://www.afr.com/policy/foreign-affairs/australia-s-eight-nuclear-subs-will-be-designed-to-outclass-china-20210916-p58s1n.

[24] Read: Mustin, Henry C. "The Sea-Launched Cruise Missile: More Than a Bargaining Chip." International Security 13, no. 3 (1988): 184-190.

[25] https://www.globaltimes.cn/page/202203/1254240.shtml

[26] The new submarines will have subsurface to land missiles which can become strategic deterrence. See: Staff, Naval News. "Leak Reveals First Details of Australia's New Aukus Submarine." Naval News, April 2, 2022. https://www.navalnews.com/naval-news/2022/04/leak-reveals-first-details-of-australias-new-aukus-submarine/.

[27] Goldrick, James, "Understanding Australia's Submarine Commitment", The Strategist, Australian Strategic Policy Institute, 9 February 2023.

[28] Davis, Malcolm, "Australian SSNs will open up opportunities for advanced undersea operations", The Strategist, Australian Strategic Policy Institute, 15 March 2023.

submarine capability.' On the other hand, it must now develop a defensive response capacity towards an 'alliance submarines capabilities' with the possible integration of undersea warfare capabilities among AUKUS members.

4. Indonesian Regulations on Archipelagic Waters and Nuclear - Powered Submarine.

Australia's nuclear-powered submarine will be highly likely to use archipelagic waters to navigate north to Australia's target projection, China[29]. Some elements of international law should be noted by navigating within the archipelagic waters. According to UNCLOS 1982, foreign nuclear-powered submarines can use innocent passage and archipelagic sea lane passage. Based on article 53(1) of UNCLOS 1982, Indonesia, as an archipelagic state, may designate archipelagic sea lanes within its archipelagic waters. This is compensation for accepting the archipelagic state concept during the 1982 UNCLOS negotiations, which converted high seas between islands into archipelagic waters[30]. So far, Indonesia has designated three archipelagic sea lanes to accommodate shipping[31]. UNCLOS 1982 regulates nuclear-powered vessels in articles 22 and 23 within Section 3 of innocent passage in the territorial sea. Article 22 states that nuclear-powered ships may be required to navigate within specific traffic separation schemes (T.S.S.). In article 23, it is stated that "nuclear-powered vessels shall carry documents and observe special precautionary measures established for such ships by international agreements." There is no special treatment for warships in this case. As long as a particular ship is a nuclear-powered vessel conducting innocent passage, she shall obey these rules. In article 30 of the convention, the coastal state can ask the incompliance warship to leave the territorial sea[32].

However, it is still unclear how the coastal state can technically check the documents of foreign nuclear-powered warships. This is especially true since states that own nuclear-powered warships are maritime powers. Regarding innocent passage within archipelagic waters, there are no specific rules. The same regulations for innocent passage within territorial seas also apply to innocent passage within archipelagic waters. This includes rules that govern nuclear-powered vessels. This is based on Article 52 of UNCLOS 1982. UNCLOS 1982 has no regulations regarding nuclear-powered vessels when conducting transit passage and archipelagic sea lane passage. This means nuclear-powered vessels have no restrictions for conducting transit passages and passages through archipelagic sea lanes. There is also no prior authorization or notification from nuclear-powered warship operator states to the coastal states needed before or during archipelagic sea lane passage.

The Indonesian government regulates innocent passage in government regulation number 36 (2002) regarding the rights and obligations of foreign ships when conducting innocent passage within Indonesian waters. Based on article 11 of the Indonesian government regulation regarding innocent passage number 36 (2002), nuclear-powered vessels shall only use four routes to conduct innocent passage[33]. It turns out that those four routes are identical to Indonesian archipelagic sea lanes based on government regulation number 37 (2002) regarding the rights and obligations of foreign ships and aircraft when conducting archipelagic sea lane passage within designated archipelagic sea lanes (see Figure 4). Those designated archipelagic sea lanes are the same as those in Indonesia's 1996 "partial submission" to I.M.O. This regulation does not differentiate between merchant vessels, government ships, or warships. Another regulation regarding foreign nuclear-powered vessels during innocent passage is Article 16 Law Number 6 (1996). It states that:

"Foreign nuclear-powered ships.... shall carry documents and observe special precautionary measures established for such ships by international agreements."[34]

No other rule governs foreign nuclear-powered vessels during the innocent passage.

Meanwhile, the Indonesian government regulates archipelagic sea lane passage in Government Regulation 37 (2002) regarding the rights and obligations of foreign ships and aircraft when conducting archipelagic sea lane passage within designated archipelagic sea lanes. Based on article 9 states that:

"Foreign nuclear-powered ships when.... conducting archipelagic sea lane passage (within designated archipelagic sea lanes) shall carry documents and observe special precautionary measures established for such ships by international agreements."[35]

[29] To go north to South China Sea or East China Sea, the best routes will be via Indonesia's archipelagic waters.

[30] Ku, Charlotte. "The archipelagic states concept and regional stability in Southeast Asia." Case W. Res. J. Int'l L. 23 (1991): 463.

[31] In 1996, Indonesia submitted "partial designation" of archipelagic sea lanes to International Maritime Organization (IMO). See: Warner, Robin. "Implementing the archipelagic regime in the International Maritime Organization." In Navigational Rights and Freedoms and the New Law of the Sea, pp. 170-187. Brill Nijhoff, 2000.

[32] Article 30 UNCLOS 1982.

[33] Those routes are as follows: a. route 1: Natuna Sea, Karimata Strait, Java Sea, and Sunda Strait. b. route 2: Makassar strait, Flores Sea, and Lombok Strait. c. route 3: Maluku Sea, Seram Sea, Banda Sea, Ombai Strait, and Sawu Sea. Based on article 11 Government regulation number 36 (2002) regarding rights and obligations of foreign ships when conducting innocent passage within Indonesian waters (Peraturan Pemerintah no 36 tahun 2002). See: "Peraturan Pemerintah Republik Indonesia - JDIH — KKP." Accessed April 21, 2022. https://jdih.kkp.go.id/peraturan/pp-36-2002.pdf.

[34] Article 16, Law number 6 (1996). In bahasa, pasal 16, Peraturan Pemerintah nomor 6 tahun 1996. It states that "Kapal asing bertenaga nuklir dan kapal yang mengangkut nuklir atau bahan lain yang karena sifatnya berbahaya atau beracun, apabila melaksanakan hak lintas damai harus membawa dokumen dan mematuhi tindakan pencegahan khusus yang ditetapkan oleh perjanjian internasional." See: Informasi, Sub Bagian Data dan. "Badan Pembinaan Hukum Nasional." BPHN. Accessed April 22, 2022. https://bphn.go.id/. The sentences in bahasa are very similar or identical with the translation of article 23 of UNCLOS 1982 regarding Foreign nuclear-powered ships during innocent passage.

[35] Article 9 government regulates archipelagic sea lane passage in Government regulation number 37 (2002) regarding rights and obligations of foreign ships and aircrafts when conducting archipelagic sea lane passage within designated archipelagic sea lanes. In Bahasa, it states that "Kapal asing bertenaga nuklir, atau yang mengangkut bahan nuklir, atau barang atau bahan lain yang karena sifatnya berbahaya atau beracun yang melaksanakan Hak Lintas Alur Kepulauan, harus membawa dokumen dan mematuhi Tindakan pencegahan khusus yang ditetapkan oleh perjanjian internasional bagi kapal-kapal yang demikian." See: PP No. 37 tahun 2002 Tentang Hak Dan Kewajiban kapal

There is no difference between merchant vessels, government ships, or warships. These regulations resemble Article 23 of UNCLOS 1982 regarding foreign nuclear-powered ships conducting innocent passage. It means that Indonesia governs foreign nuclear-powered ships when conducting archipelagic sea lane passage with innocent passage rules of the convention. Meanwhile, the available routes for innocent passage are the same as the three archipelagic sea lanes and cannot use other straits or waterways within the archipelago (see Figure 4). In other words, practically, there is no innocent passage for foreign nuclear-powered vessels, and the archipelagic sea lane passage for foreign nuclear-powered ships is downgraded to an innocent passage within the meaning of article 23 UNCLOS 1982. Another regulation is Commander of the Indonesian National Armed Forces Verdict number: skep/645/VII (1999). In article five, it states that:

"Foreign nuclear-powered warships during archipelagic sea lane passage should inform the Indonesian government (which is the Commander of the Indonesian National Armed Forces) beforehand for navigational safety."[36]

However, this rule is only hortatory without any obligation for prior notification. The suggestion to provide prior notification in the verdict is likely a relic of the draft article at the beginning of the UNCLOS 1982 negotiation process. At that time, there was a so-called A.S.G. Caracas draft article. One of its paragraphs stated:

"Prior notification of the archipelagic state is required of vessels that are nuclear-powered or carrying nuclear weapons or other dangerous substances."[37]

It can be concluded that, based on Indonesian regulation, foreign nuclear-powered warships can only pass through designated archipelagic sea lanes (which resemble four routes for innocent passage). See Figure 4. Those nuclear-powered warships must carry documents and follow generally accepted international rules of special precaution measures. Still, without any technical guidance on how to enforce those rules (there is no precedent that the Indonesian government has ever enforced regulations requiring the carrying of documents and following generally accepted international rules of special precaution measures)., there is also a hortatory regulation to give prior notification to foreign nuclear-powered warships before or during conducting passage.

Based on those rules, Australia's future nuclear-powered submarines shall navigate only within those designated archipelagic sea lanes (the same as four routes designated for foreign nuclear-powered vessels' innocent passage, see figure 4), but with restriction on innocent passage similar to article 23 of the convention. Australian nuclear-powered submarines shall bring documents and obey generally accepted international rules of special precaution measures while transiting Indonesian archipelagic sea lanes. It is unclear how the Indonesian government has consistently upheld this rule for foreign warships. How technically, Indonesia checks the documents of foreign warships while transiting within its archipelagic sea lanes. The last thing is that Australia's future nuclear-powered submarine may provide prior notification, which is unlikely because of the secret nature of submarine operations.

One incident that takes precedence in dealing with the issue of foreign nuclear-powered warship routes was the Bawean incident in 2003[38]. In this incident, a U.S. aircraft carrier, U.S.S. Carl Vinson, a nuclear-powered vessel, passed through the Java Sea from west to east, which is outside the permitted innocent passage routes by the Indonesian government for nuclear-powered ships and also outside the designated archipelagic sea lanes[39]. There are no other publicly available incidents regarding this topic. From this incident, we can draw some lessons to apply to Australia's future nuclear-powered submarines. While conducting aircraft operations, the U.S.S. Carl Vinson, a foreign nuclear-powered vessel, navigated through archipelagic waters outside the designated routes by Indonesia.

From the standpoint of the United States, the U.S.S. Carl Vinson was subject to an archipelagic sea lane passage regime based on Article 53 (**??**), which states that if an archipelagic state has not designated its archipelagic sea lanes (which Indonesia has only done partially), then all routes usually used for international navigation will be considered archipelagic sea lanes. It means that the U.S.S. Carl Vinson can legally pass through, even launching and recovering aircraft. Meanwhile, the Indonesian government viewed the U.S.S. Based on her route and position, Carl Vinson's passage is within the innocent passage regime. It means that she challenged two Indonesian rules. The first is a rule regarding the route of a foreign nuclear-powered vessel conducting innocent passage within Indonesian waters.

Foreign nuclear-powered vessels are prohibited from pass-

Dan Pesawat udara asing Dalam Melaksanakan hak Lintas Alur Laut Kepulauan Melalui Alur Laut Kepulauan Yang ditetapkan [JDIH bpk ri]. Accessed April 22, 2022. https://peraturan.bpk.go.id/Home/Details/52448. The sentences in bahasa are also very similar or identical with the translation of article 23 of UNCLOS 1982 regarding Foreign nuclear-powered ships during innocent passage (not archipelagic sea lane passage).

[36] Skep Panglima TNI Nomor: Skep/645/VII tahun 1999, 19 persyaratan melalui ALKI yang harus dipatuhi oleh kapal dan pesawat udara yang melaksanakan hak lintas ALKI. In English: Commander of the Indonesian National Armed Forces Verdict number: skep/645/VII (1999), 19 rules of Indonesian archipelagic sea lanes that has to be obeyed by ships and aircrafts conducting archipelagic sea lane passage.

[37] Draper, Jack A. "The Indonesian archipelagic state doctrine and Law of the Sea: Territorial grab or justifiable necessity." In Int'l L., vol. 11, p. 155. 1977.

[38] In this incident, U.S.S. Carl Vinson was at Java Sea, transiting from west to east outside four routes of innocent passage (which is the same as archipelagic sea lanes) which were provided for nuclear-powered vessel. The aircraft carrier also launched aircrafts while transiting. See: Bateman, Walter Samuel Grono. Security and the law of the sea in East Asia: navigational regimes and exclusive economic zones. Oxford University Press, 2006. Also see: Dirwan, A. "Analisis Masalah Pengaturan Ruang Udara Di Atas Alur Laut Kepulauan Indonesia (ALKI)." Jurnal Teknologi Kedirgantaraan 6, no. 1 (2021).

[39] This incident is well known for the launching of aircraft from aircraft carrier while transiting the Java Sea, outside those three archipelagic sea lanes. There are several issues regarding this incident. The first one is the issue of west-east archipelagic sea lanes, which is about the partial designation of archipelagic sea lanes to the IMO in 1996. The second issue is about the interpretation of "normal mode" during archipelagic sea lane passage, whether it includes launching/ recovering aircraft or not, and how far the aircraft can go. The last one is the issue of nuclear-powered vessel, which navigate outside the permitted routes by Indonesian government.

ing through other than the four designated routes. The second one, she violated the innocent passage rule by launching aircraft while conducting innocent passage (because it was conducted outside of designated archipelagic sea lanes). Suppose we apply this to future Australian nuclear-powered submarines. In that case, the potential incident will occur if those submarines navigate outside four foreign nuclear-powered vessel routes identical to Indonesian archipelagic sea lanes. It is worth noting how Indonesia will deal with an Australian nuclear-powered submarine. When Indonesia dared to intercept U.S. navy aircraft, let alone an Australian nuclear-powered submarine, when she navigated outside the routes that had been provided by Indonesia[40].

5. Another Related Issue: Unresolved East-West Archipelagic Sea Lane.

One unresolved issue regarding archipelagic sea lanes is whether the current archipelagic sea lanes are enough. Indonesia is the only archipelagic state in the world that has already designated its archipelagic sea lanes. In May 1996, Indonesia submitted a "partial submission of archipelagic sea lanes" to the International Maritime Organization (I.M.O.)[41] . During the submission, there was a heated discussion between maritime states, particularly the U.S. and Australia, on the one hand, and Indonesia, as a coastal state, on the other hand[42]. The point of contention is Article 53(4), which states that archipelagic sea lanes must include all routes normally used for navigation[43]. At the time, Indonesia only submitted three north-south archipelagic sea lanes to the International Maritime Organization (I.M.O.). Maritime states believe that it should be more than three[44].

However, both states have different views when the U.S. and Australia present the routes that are normal for navigation within the Indonesian archipelago. It means that the term "routes normally used for navigation" is subjective by nature, depending on which state's view it is. But there is one similarity between the U.S. and Australia. Both states want at least one more archipelagic sea lane from west to east. Before Indonesia submits another archipelagic sea lane, the U.S. stance is that the U.S. can use all routes usually used for international navigation based on Article 53 (12) UNCLOS 1982. This stance caused some incidents. One of the more prominent incidents was the Bawean incident in July 2003. In this incident, the U.S.S. Carl Vinson, a U.S. Navy aircraft carrier, went into "normal mode" by launching and recovering aircraft while conducting passage within "routes normally used for navigation." From the U.S. perspective, the aircraft carrier was conducting an archipelagic sea lane passage from the archipelago's western part to the archipelago's eastern part. However, from the Indonesian perspective, since the aircraft carrier was outside designated archipelagic sea lanes, she was conducting an innocent passage in which launching and recovering aircraft was prohibited.

Just like the Bawean incident, which involved an aircraft carrier, other forms of "normal mode" incidents can also happen to submarines in a scenario when in the future, Australia's nuclear-powered submarines navigate from the middle part of the Indonesian archipelago to the eastern part of the archipelago, then Australia and Indonesia will have a different view. Assuming the normal mode for submarines is submerging, then from the U.S. and Australia's perception, subs are permitted to submerge from west to east of the archipelago. From Indonesia's perception, she shall surface and show her flag during the passage since it is considered an innocent passage. There is also another requirement for nuclear-powered submarines. The nuclear-powered submarine shall carry documents and follow preventive measures based on article 23 of UNCLOS 1982 while conducting innocent passage.

6. Submerged Passage of Nuclear-Powered Submarine Under Archipelagic Sea-lane during Peacetime.

One of the biggest potential problems regarding Australia's new submarines will be the interpretation of "normal mode." If it were accepted that the normal mode for subs is submerging as *lex lata*, then Australia would have many advantages. But for Indonesia, it will have a detrimental effect. The situation and conditions for archipelagic states differ from those for strait states bordering international straits. While the archipelagic state accepts the interpretation of normal mode for submarines as submerging, it will still bear a significant loss, especially in some circumstances below.

First, by having transit with submerging, submarines will have a massive chance to deviate from the archipelagic sea lane axis without coastal state knowledge. Therefore, it will violate the coastal state's sovereignty. In a scenario when one submarine passes through an archipelagic sea lane by submerging, there is no way Indonesia can check whether that submarine obeys the coastal state's archipelagic sea lane axis or not. This is particularly true considering the underwater surveillance capability that Indonesia has. Even if Indonesia has acquired supreme underwater surveillance ability by acquiring modern technology from significant powers such as China, it will be challenging to detect Australia's nuclear-powered submarine, considering its vast area of archipelagic waters. Australia's nuclear-powered submarine can use second or third archipelagic

[40] However, the problem is that it is extremely difficult to detect a cutting-edge technology of new nuclear-powered submarines, especially considering Indonesian capability to conduct underwater surveillance.

[41] IMO is considered a "competent international organization" based on UNCLOS 1982 article 53 (9). See: Forward, Chris. "Archipelagic sea-lanes in Indonesia-their legality in international law." Austl. & NZ Mar. LJ 23 (2009): 151.

[42] Read: Puspitawati, Dhiana. "The east/west archipelagic sea lanes passage through the Indonesian archipelago." Maritime Studies 2005, no. 140 (2005): 1-13.Also read: Johnson, Constance. "A rite of passage: The IMO consideration of the Indonesian archipelagic sea-lanes submission." The International Journal of Marine and Coastal Law 15, no. 3 (2000): 317-332.

[43] See: Kumala, Masitha Tismananda, and Dina Sunyowati. "Designation of Archipelagic Sea Lanes according to the United Nations Convention on the Law of the Sea 1982 (Indonesia Archipelagic Sea Lanes Case)." International Journal of Business, Economics and Law 10, no. 48-54 (2016).

[44] The U.S. has its own presentation of routes which are considered "normally used" for international navigation. Meanwhile, Australia also has its own version of routes "normally used" for international navigation. But the similar thing between the U.S. and Australia version is a traversing route from west to east archipelago.

sea lanes as entrance points in the south. Once the sub is within the archipelagic sea lane, she can sail by submerging unstoppable from Borneo Island to Papua Island in the east. This is because these areas' relatively deep seas of archipelagic waters are suitable for submarine operations.

The second one, submerging, will have an issue with the environment in case there is an accident below the water. This is especially true for nuclear-powered submarines. Nuclear power has always become an environmental concern. Any issue or nuclear incident will have an impact on the coastal state. According to articles 54 and 42(1) UNCLOS 1982, the coastal state can regulate pollution and navigation safety. However, how can the coastal state check the obedience of a submarine if the nuclear-powered submarine can legally pass through an archipelagic sea lane by submerging? If something happens to Australia's submerged nuclear-powered submarine that causes a nuclear radiation catastrophe, it will become an environmental disaster for the coastal state. There was a case when the U.S. nuclear-powered submarine of the Seawolf class hit an underwater object in the South China Sea[45]. Because of the secrecy concern, the U.S. government did not provide the exact accident location. It is not ruled out that the accident may have taken place within Indonesian archipelagic waters. Nobody knows since it is almost impossible for Indonesia to check the situation. In a scenario where such an accident happens while submerging under an archipelagic sea lane, the coastal state will bear the burden of the radioactive issue. In the case of the Soviet nuclear-powered submarine, Komsomolets, there was a radioactive leakage found years after it sank[46]. If something happens to the nuclear reactor, it could become an environmental disaster. When a submarine causes pollution, it is impossible to know which sub-caused it while navigating below the waters.

The third one, based on articles 54 and 42(1) UNCLOS 1982, is that the coastal state can make regulations regarding the safety of navigation. When the coastal state makes a traffic separation scheme within an archipelagic sea lane, it is extremely difficult for the coastal state to check whether submarines that pass underwater obey the rule. Even though it is arguable that the coastal state created the traffic separation scheme to regulate submerged passage. However, in some cases, when, for example, there is a diving operation in a strait or cable and pipeline work, and the submarine does not obey the safety of navigation, the consequences will be detrimental. Until now, there has been no special safety navigation regulation for submarines passing through archipelagic sea lanes while submerging. Of course, when an archipelagic state makes such a regulation, it is a sign that the archipelagic state accepts the interpretation of the submarine's normal mode, including submerging passage. However, this regulation is important to prevent collisions between submarines, collisions between submarines and surface vessels, or to prevent submarines from hitting underwater objects, such as underwater mountains and shipwrecks. This is because a submarine is like a blind man who cannot see anything but hear.

7. Submerged Passage of Nuclear-Powered Submarine Under Archipelagic Sea Lane in Times of Armed Conflict.

The next one is that, in times of armed conflict, there is a vast opportunity for belligerent state submarines to use archipelagic waters as a sanctuary and a place for procrastinating. In times of war, the laws of naval warfare and the direction of the sea are mutually exclusive. In other words, both bodies of law apply. Based on the San Remo Manual (S.R.M.), which is a codification of the Law of Naval Warfare by experts in 1994, in article 28, the San Remo Manual supports the interpretation that during armed conflict, belligerent submarines can pass through a neutral state's archipelagic sea lanes by submerging. A neutral archipelagic state cannot close sea lanes for belligerents[47]. In times of armed conflict (in this context, an International Armed Conflict), archipelagic sea lanes passage continues to apply[48]. On the other hand, based on paragraph 17 of the San Remo Manual, belligerent states cannot use a neutral state's archipelagic waters as a sanctuary, nor can they use a neutral state's archipelagic waters as a place for battle[49].

However, since belligerent submarines can pass through the archipelagic sea lanes by submerging, archipelagic states can't control their archipelagic waters so as not to be used by belligerents. This is because there is no opportunity for the coastal state to detect and identify submarines that pass through its archipelagic sea lanes. By doing submerged passage, the coastal state cannot check how long that specific submarine has been within the archipelagic sea lane. There is also the possibility that the submarine deviates from the archipelagic sea lane. Based on the San Remo Manual of 1994, belligerent ships cannot use the territorial waters or archipelagic waters of neutral states as a place of sanctuary. When the neutral coastal state cannot act, the opponent state will operate by itself. Archipelagic waters can become a place of hostility between belligerents.

This is especially dangerous in the case of Australia's nuclear-powered submarines. Australia is facing China's threat by having a nuclear-powered submarine. China said that since Australia uses nuclear-powered subs, it will lose its privilege not to be attacked by submarine weapons[50]. This is because China cannot trust its potential adversaries to not use its capabilities to the maximum that they can get, especially in security matters.

[45] ABC News. "Sailors on US Nuclear Sub Injured after Collision in South China Sea." ABC News. ABC News, October 8, 2021. https://www.abc.net.au/news/2021-10-08/us-nuclear-sub-hits-object-south-china-sea/100523164.

[46] Read: Montgomery, George. "The Komsomolets Disaster." Inside CIA: Lessons in Intelligence (2004): 6. Also read: Flo, Janita Katrine. "Radioactive contamination in sediments near the sunken nuclear submarine Komsomolets, SW of Bear Island in the Norwegian Sea." Master's thesis, The University of Bergen, 2014.

[47] Paragraph 29 of SRM

[48] Paragraph 27 of SRM

[49] Paragraph 17 of SRM

[50] "'Brainless' Australia a Target for 'Nuclear War', Warns ..." Accessed April 22, 2022. https://www.news.com.au/technology/innovation/military/brainless-australia-a-target-for-nuclear-war-warns-top-china-expert/news-story/4652ab802a01b677c6df6de51479bd8d.

This will force China to send its Ship Submersible Ballistic Nuclear (SSBN) toward Australia. The best way to get to Australia is by passing through the Indonesian archipelagic waters.

In contrast, Australia will send attack submarines to monitor Chinese SSBNs in the archipelago. From Australia's perspective, it is better to counter its enemy while far from home. All of these will result in the use of archipelagic waters as a place to hide and seek Indonesia's neighbors' submarines. Belligerencies will also likely occur within archipelagic waters since Indonesia lacks the capacity to control them underwater. In this way, Indonesia will bear the cost of the spillover effect of the armed conflict between China and Australia. Not to mention when the hostilities in Indonesian waters result in the damage of SSN or even SSBN, which will significantly impact the environment.

War is all about the first move. Those who have the first move will have a considerable advantage, especially regarding the element of surprise. In a scenario where Australia is hostile to China, Australia's submarine will try to use archipelagic waters as a sanctuary and a place for procrastinating to get a tactical advantage in the first place. By doing submerged passage, the coastal state cannot check how long a submarine has already been within its archipelagic sea lane. Australia's submarine might also deviate from the archipelagic sea lane to find a place for sanctuary within the coastal state's archipelagic waters. However, it will only take advantage before the opponent state realizes this. Once the opponent is aware of this situation, Australia will stop taking advantage of it. This is because when the neutral coastal state cannot act, the opponent state will function by itself. By this time, Australia will have already stopped using archipelagic waters as a sanctuary or lingering under archipelagic sea lanes; otherwise, the opponent state can act by itself and attack Australia's submarine within a neutral archipelagic state.

In a scenario where Indonesian waters are used as a maritime battleground, these nuclear-powered submarines can go into many places undetected and attack many of the archipelagic state's coastal cities, including Indonesia's new capital city.

Since immemorial, the capital city has always been the crown jewel of a state. During warfare, the capital city is the one that becomes the main target of the enemy[51]. Once the capital city can be conquered, usually, the state will lose the war, even though, in some cases, there are so-called governments in exile[52]. Different from the old capital city of Jakarta, the future capital city of Indonesia will be much more disaster-proven. However, it will be much more vulnerable to the threat from the sea. It is especially true considering the location of the new capital city, which is on the coast of a deep and wide strait that is part of an Archipelagic Sea Lane, the playground for the neighbor's submarine.

In August 2019, Indonesia announced that it would move its capital city. Its present capital city, Jakarta, has already passed its sustainable limit for supporting its residents' lives[53]. The Indonesian government selected Penajam Paser Utara city, a countryside located on the east coast of Borneo Island, as the new capital city (see Figure 1)[54] . Unlike Malaysia and Australia, which moved their capital cities landward, the new Indonesian capital city seems to be the same coastal city as the previous one[55]. As we can see from Figure 2, Makassar Strait is a deep and wide strait. Makassar Strait, which extends from north to south, has a depth variation of hundreds of meters to a thousand meters, with the deepest reaching more than two thousand meters.

Meanwhile, it has the shortest width of around fifty-seven nautical miles in the northern part of the strait. From the tactical point of view of naval warfare, it means that this area is suitable for submarine areas of operation[56]. This is different from Jakarta, in which, even though it is in a coastal area, the water is shallow and congested (see Figure 3). It is impossible to operationalize a submarine in shallow and crowded waters near the off-Jakarta coast (see Figure 3).

Even though Jakarta has many problems maintaining its status as a capital city, in terms of submarine threats, it is much safer than its future successor. Jakarta is located far from the deep sea, which can become a submarine area of operation (see Figure 3). Jakarta is in a coastal area of the Java Sea, a sea that was part of Sundaland in the past[57]. The depth of the Java Sea around Jakarta is only a little less than 50 meters (see Figure 3). It is impossible for submarines, especially nuclear-powered submarines, which can carry sub-surface-to-land missiles, to operate there. The closest a submarine can get by submerging is to the Indian Ocean, which is more than 200 KM away. After all, the Indian Ocean is located across Jakarta, making it more challenging to get attacked by cruise missiles from sea to land[58].

[51] During many wars, capital city is main target of capture, conquer, or in the least form, terror. For example, during World-War II, once Germany subdued Paris, France was considered defeated. Germany also targeted London to spread terror. The U.S. also targeted Tokyo for terror in a famous operation called Doolittle Raid. In modern day, Russia targeted Ukraine's capital city Kiev.

[52] Several examples: France during World-War II, led by Charles de Gaulle, Indonesia during Dutch Politionele acties, or even Nationalist China by Chiang Kai Sek who govern China mainland from Taiwan.

[53] Guest, Peter. "The Impossible Fight to Save Jakarta, the Sinking Megacity." WIRED UK, October 15, 2019. https://www.wired.co.uk/article/jakarta-sinking.

[54] Maulia, Erwida. "Jokowi Announces Indonesia's New Capital in East Kalimantan." Nikkei Asia. Nikkei Asia, August 26, 2019. https://asia.nikkei.com/Politics/Jokowi-announces-Indonesia-s-new-capital-in-East-Kalimantan.

[55] Australia moved its capital city several times from Sydney to Melbourne, and now Canberra. Malaysia moved its capital city from Kuala Lumpur to Putrajaya. Both states moved capital cities landward from the previous capital city which were port cities. Indonesia on the other hand choose Penajam Paser Utara which is also coastal city same as Jakarta.

[56] Submarine, especially nuclear-powered submarine which have relatively huge body compared to its conventional counterpart, can only operate in a wide and deep area.

[57] Read: Bird, Michael I., David Taylor, and Chris Hunt. "Palaeoenvironments of insular Southeast Asia during the Last Glacial Period: a savanna corridor in Sundaland?." Quaternary Science Reviews 24, no. 20-21 (2005): 2228-2242.

[58] The farther the distance, the more difficult it will be to target an object. This is because the chance to get monitored will be bigger. Then the chance for the missile to be destroyed by anti-missile defence will be higher.

One of the new capabilities that Australia's nuclear-powered submarine has is the ability to attack land targets from sub-surface by acquiring Tomahawk missiles from the United States[59]. Based on San Remo Manual paragraph 26, when the coastal archipelagic state is at war, it cannot close its archipelagic sea lanes. The archipelagic sea lane passage still applies in times of armed conflict, including for neutral submarines. A neutral sub still has the right to submerged passage even though the archipelagic state is at war with another state. This rule will significantly contribute to Australia's ability to win the war. Australia's nuclear-powered submarine can go through the entrances of the second or third archipelagic sea lanes. It would be much better to observe and wait for other neutral states' submarines that also want to pass through archipelagic sea lanes. Then pass the entrance almost simultaneously as the neutral state's submarine.

This is because there is a hortatory San Remo Manual rule which suggests neutral states inform the belligerent archipelagic state before conducting archipelagic sea lane passage. However, since it is a hortative rule, it is unlikely that neutral conditions will uncover their secret submarine position in Indonesia. Not to mention submarines from "qualified neutrality" states that support Australia without becoming a party to the armed conflict[60]. If this rule were mandatory, there would be no chance for Australia to get this substantial strategic advantage. This is because Indonesia will be aware of all neutral submarines that pass through the entrance of archipelagic sea lanes and will leave unreported subs as a target. Once Australia's nuclear-powered submarine has passed through the opening, then it will be much easier to choose and target coastal cities in Indonesia, including the new capital city, which is located on the coast of Makassar Strait.

One of the most logical and affordable solutions for the coastal state is using anti-submarine mines. However, the blast of the nuclear-powered submarine itself could become a disaster for the coastal state. Not to mention the explosion's impact on other ships underway on their archipelagic sea lane passage. It's the same as blowing up your adversary inside your own home. In other words, once the enemy's nuclear submarine passes through archipelagic sea lanes, the coastal state cannot do anything. At best, it calculates collateral damage, proportionality principles, and military necessity at its own cost ahead of time.

8. Nuclear - Powered Submarines and Potential Regional Arms Race.

It may be true that Indonesia and Australia have no intention of fighting, but who knows what will happen in a few years when international geopolitics and internal politics in both countries have changed. From a realistic point of view, in global power politics, many times in history, the growth of power was followed by a change of attitude due to the expanding ambition of the rising power. The increasing power will demand better treatment and respect from its neighbors.[61] The one considered unthinkable today might be a logical decision in the future. Once Australia has all its nuclear-powered submarines with many other armaments and its military might, as a result of the AUKUS alliance, it will treat its neighbors differently. Australia will position itself differently from its regional counterparts.

It is impossible for Australia today to conduct Freedom of Navigation Operations (FONOPS) to challenge its neighbors as the U.S. does. Still, it might be performed when it has a much stronger position. There is a chance that Australia will challenge the hurdle of navigation across the Indonesian archipelago that it has borne before. On the other hand, the rising power will increase the anxiety of its immediate neighbors. As a result, there is a possibility that an incident will happen in the future when Australian nuclear-powered submarines challenge Indonesian authorities regarding the "four-designated innocent passage routes for foreign nuclear-powered vessels" and the "partial submission of archipelagic sea lanes" by having a submerged passage from west to east or east to west of the archipelago. Meanwhile, Indonesia will feel more threatened because of Australia's drastic increase in military capability due to the acquisition of nuclear-powered submarines.

From the theory of threat perception, the threat is always seen as a result of capabilities multiplied by intention[62]. The more capabilities your neighbor has, without any change from the "intention" factor, the higher the threat perception. It means the increase in Australia's capacity by acquiring nuclear-powered submarines will significantly escalate threat perception. Moreover, new threat perception theories add other approaches, one of which is the vulnerability-based approach[63].

[59] There was also a planning to acquire sub-surface to land missile from Collins class submarine before, but it was cancelled. Australia decided the new capability to attack land will be put in new submarine. Just like the U.K's Astute class and the U.S.'s Virginia class, Australia's future nuclear-powered submarines will also carry tomahawk cruise missile for surface and land target. See: Patrick, Aaron. "Australia's Eight Nuclear Subs Will Be Designed to Outclass China." Australian Financial Review, September 16, 2021. https://www.afr.com/policy/foreign-affairs/australia-s-eight-nuclear-subs-will-be-designed-to-outclass-china-20210916-p58s1n

[60] A state is considered "qualified neutrality" when it is not belligerent, but it supports one party of the conflict indirectly. See: Dinstein, Yoram. War, aggression, and self-defence. Cambridge University Press, 2017.

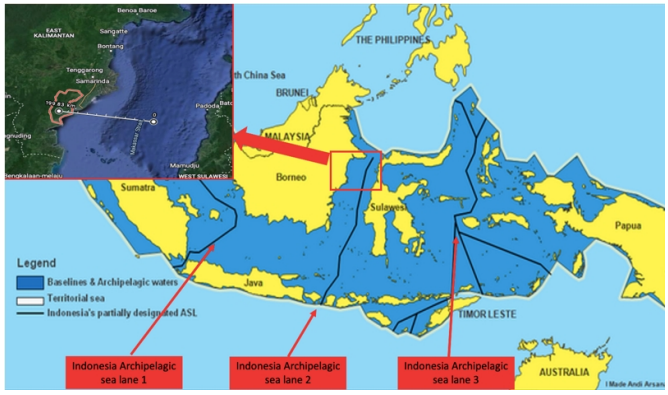
[61] In this case, Australia's attitude towards its neighbours might be changed after it has "a new bigger muscle" in the future. A realism perspective of international relations, especially structural realism, and neo-realism. Read: Mearsheimer, John J. "Structural realism." International relations theories: Discipline and diversity 83 (2007): 77-94.Also read: Donnelly, Jack. Realism and international relations. Cambridge University Press, 2000. Also read: Shimko, Keith I. "Realism, neorealism, and American liberalism." The Review of Politics 54, no. 2 (1992): 281-301.

[62] See: Singer, J. David. "Threat-perception and the armament-tension dilemma." Journal of Conflict Resolution 2, no. 1 (1958): 90-105.

[63] Threat perception of vulnerability-based approach for state actor. In his Ph.D. dissertasion, the writer provides an example of vulnerability-based approach for state actor. He mentions about the U.S. threat perception towards Soviet Union during cold war. Because the U.S. had vulnerability of nuclear attack from Soviet Union, then the threat perception would increase. See: Vandepeer, Charles. "Rethinking threat: intelligence analysis, intentions, capabilities, and the challenge of non-state actors." PhD diss., (2011): 137.

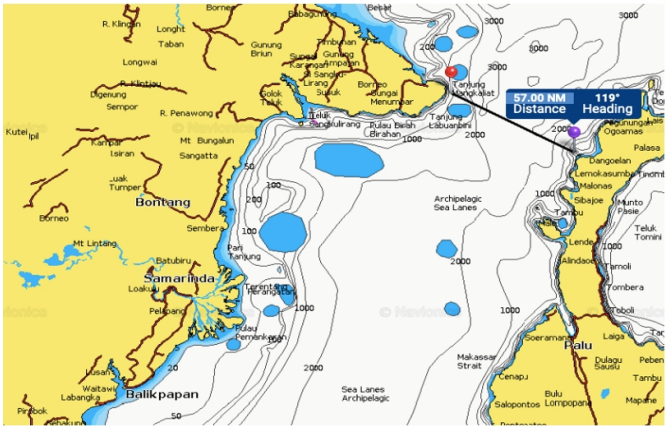
Having a new capital city located in a location vulnerable to submarine attack will relate to the supposed threat from Australia, which is the closest neighbor that can attack it. Having a new capital city prone to submarine attacks will likely increase the threat perception from Indonesia to Australia in the future. A foreseeable impact soon is that a regional arms race will happen. Also, having an incident of finding Australia's nuclear-powered submarine submerged under Indonesian straits and waterways outside those three archipelagic sea lanes, especially within the east-west axis, will likely increase Indonesia's threat perception towards Australia. But Australia's submarine is not the only one that can threaten Indonesia in the future concerning its new capital city. Many other nuclear-powered submarines from several countries will go back and forth right before Indonesia's new capital city. Australia needs to keep the "intention" factor low to get the best result in threat perception for both states. Confidence Building Measures (CBM) are one of the solutions to reduce the threat perception between both countries and to nullify the spiral effect of an arms race.

Figure 1: Location of Indonesia's new capital city at the coast of Makassar Strait which is part of Indonesia Archipelagic Sea Lane 2.



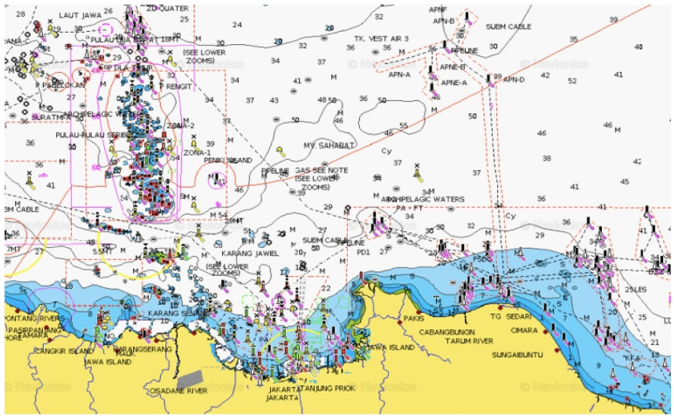
Source: Authors.

Figure 2: Makassar Strait as a deep and wide strait, which is part of second Indonesia Archipelagic Sea Lane.



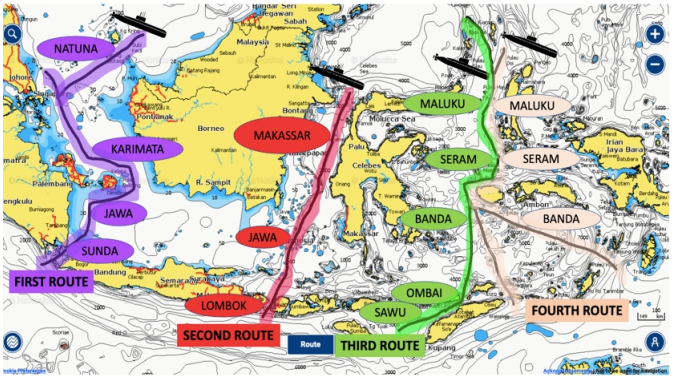
Source: Authors.

Figure 3: Jakarta is located at a shallow and congested coastal city which is safe from submarine threat.



Source: Authors.

Figure 4: (Maritime chart from Navionics chart, with changes by the author): Four innocent passage routes for foreign nuclear-powered vessels based on Government regulation 36 (2002), which resemble partial designation of Indonesian archipelagic sea lanes.



Source: Authors.

Conclusions

The article concludes that the potential ramifications of AUKUS nuclear-powered submarines towards Indonesia's right to implement its archipelagic state status must be fully realized and anticipated. In particular, Indonesia's interpretation of innocent passage routes for foreign nuclear-powered submarines, partial designation of archipelagic sea lanes, and the "normal mode" interpretation for submarines when conducting archipelagic sea lane passage needs to be taken into consideration by both Indonesia and Australia in regards to the development of nuclear-powered submarines as part of the AUKUS agreement. Despite the fact that realization of Australia's nuclear-powered submarines program as part of AUKUS will not be fully operational by early and mid-2030's. The relevance of enhanced confidence-building measures at senior officials' level between defense and security officials between both countries is required, to avoid potential misunderstanding and miscalculation. This is

imperative to minimize its potential fallout towards the durability of Indonesia-Australia maritime defense and security relations. The full comprehension of these potentialities needs to be fully realized as to minimize the potential miscalculation between threat perception and intentions between both countries.