



Security Nexus Perspectives

POPULAR MDA INITIATIVES AND IMPLICATIONS FOR ASEAN

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Summary: ASEAN countries have been offered to join multiple Maritime Domain Awareness (MDA) programs, integrating new technologies to better monitor the situation on the ground by their partners. This tendency might bring about opportunities for ASEAN to increase its capacity to deal with maritime crimes and the so-called "gray zone" challenges and meet its developmental needs. On the other hand, it offers several concerns regarding national security in cyber and sovereignty space, big powers competition, and technical incompatibility. A more concerted and categorized MDA effort, equipped with a messaging campaign based on transparency and inclusivity, aiming at long-term data-analysis capacity, should be introduced for it to be better embraced by ASEAN.

Keywords: MDA, ASEAN, South China Sea, maritime security

In recent years, the term Maritime Domain Awareness (MDA) has gained popularity because many actors, especially those with an Indo-Pacific strategy, such as the Quad members, the EU, and Canada, are pushing for MDA cooperation with ASEAN countries, sometimes with a standalone program, but often under a multilateral initiative, with somewhat overlap in terms of content. That context raises the need to answer how such MDA efforts can affect ASEAN security or better ASEAN capacity.

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An Overview of Current MDA Offers

One of the notable initiatives is the CRIMARIO program, which focuses on critical maritime routes in the Indian Ocean. Initially launched in 2015 for the Western Indian Ocean region, the program entered Phase II in 2020, extending its coverage to the Indo-Pacific. Over the course of five years, the program aims to enhance information sharing and strengthen inter-agency cooperation for maritime observation. At the center of CRIMARIO II is the web-based platform called IORIS, which collects data from the Automatic Identification System (AIS) and Skylight AI. In the future, there is potential to integrate Copernicus satellite data and radio frequency data². Several ASEAN countries, including Indonesia³, the Philippines⁴, and Vietnam⁵, have been invited to adopt IORIS.

Another one making waves is the Quad's Indo-Pacific Maritime Domain Awareness Initiative (IPMDA), announced after the Quad Summit in May 2022⁶. Quad said the aim in five years is to share information at sea with partners via new technology to track "dark shipping," "rendezvous at sea," or "climate and humanitarian events."⁷ IPMDA has integrated radio frequency and satellite data from HawkEye360's satellites⁸, and even information from unmanned aircraft systems⁹ in the future, into the web-based SeaVision system developed by the US Department of Transportation¹⁰, to provide better-quality pictures. IPMDA was demonstrated at the 2022 SEACAT exercise¹¹ and might be offered to some Southeast Asian countries¹².

There are potential offers for ASEAN from other partners, too. Canada has indicated that it will promote its Dark Vessel Detection Program to support regional maritime management against IUU¹³, as a way to implement its recently released Indo-Pacific strategy. India might as well weave its Information Fusion Centre's MDA cooperation into its Indo-Pacific Ocean Initiative (IPOI) to engage

² CRIMARIO, 2023, "IORIS: Moving from Situational Awareness to Situational Understanding and Action," https://www.crimario.eu/wp-content/uploads/2023/05/IORIS_Brochure_A5_V5.pdf

³ CRIMARIO, 2023. "First IORIS Steering Committee Meeting in Bali to move towards the common management of the platform", <https://www.crimario.eu/indonesia-eu-host-regional-talks-on-information-sharing-to-enhance-maritime-safety-and-security-in-indo-pacific/>

⁴ CRIMARIO, 2023, "Palau and the Philippines test their Standard Operating Procedures (SOPs) to respond to simulated incidents at sea using IORIS", <https://www.crimario.eu/indo-pacific-maritime-security/>

⁵ Quốc Đạt, 2022, "Quan chức EU: Việt Nam là điểm đến yêu thích của nhà đầu tư châu Âu", <https://zingnews.vn/quan-chuc-eu-viet-nam-la-diem-den-yeu-thich-cua-nha-dau-tu-chau-au-post1312920.html>

⁶ White House, 2022, "FACT SHEET: Quad Leaders' Tokyo Summit 2022". <https://www.whitehouse.gov/briefing-room/statements-releases/2022/05/23/fact-sheet-quad-leaders-tokyo-summit-2022/>

⁷ Ibid.

⁸ Ely Ratner, 2022, https://twitter.com/ASD_IndoPacific/status/1618079748026167299

⁹ Travis Sharp, 2023, "What's missing from the Quad's ISR partnership", <https://defenseone.com/ideas/2023/07/whats-missing-quads-isr-partnership/388967/>

¹⁰ Zack Cooper & Gregory Poling, 2022, "The Quad goes to sea," War on the Rocks, <https://warontherocks.com/2022/05/the-quad-goes-to-sea/>

¹¹ Ely Ratner, 2022, "Twelfth Annual South China Sea Conference: Lunch Keynote," CSIS, <https://www.csis.org/analysis/twelfth-annual-south-china-sea-conference-lunch-keynote>

¹² Al Jazeera, 2022, "Quad launches 'anti-China' maritime surveillance plan," <https://www.aljazeera.com/news/2022/5/28/why-has-the-quad-launched-an-anti-china-surveillance-plan#:~:text=Quad's%20initiative%20is%20designed%20to,Chinese%20vessels%20in%20real%20time.>

¹³ Government of Canada, 2022, "Canada's Indo-Pacific Strategy", <https://www.international.gc.ca/transparency-transparence/indo-pacific-indo-pacifique/index.aspx?lang=eng>

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with ASEAN¹⁴, particularly in the pillars of maritime security or connectivity¹⁵. Japan can also put forward its Coast Guard's MDA Situational Indication Linkages¹⁶ (MSIL) service in cooperation with ASEAN¹⁷. The UK, in its 2022 National Strategy for Maritime Security, also mentions its commitment to support MDA capacity building globally¹⁸, including with ASEAN under the newly established Dialogue Partnership.

Possible Worries from ASEAN

The offers might bring out the following concerns within ASEAN countries:

- Some might say that MDA is predominantly a US field¹⁹ as it gained popularity during the post-9/11 era under the Bush administration²⁰.
- Others contend that MDA initiatives are essentially intelligence-sharing, therefore military efforts, with a specific focus on China²¹, which could exacerbate regional militarization or strategic competition²² - something that ASEAN wants to avoid collectively as many are pursuing the so-called "hedging" or "balancing" strategy towards big powers²³.
- Sharing information through new technologies²⁴ also raises concerns about national security²⁵, given the fact that the ASEAN countries have not come up with a mutual understanding about sovereignty in cyberspace, nor a common cyber framework. There might

¹⁴ Premesha Saha & Abhishek Mishra, 2020, "The Indo-Pacific Oceans Initiative: Towards a Coherent Indo-Pacific Policy for India," ORF Online, <https://www.orfonline.org/wp-content/uploads/2020/12/OP-292n.pdf>

¹⁵ Gurjut Singh, 2022, "The India ASEAN AOIP-IPOI cooperation," ORF Online, <https://www.orfonline.org/expert-speak/the-india-asean-aoip-ipoi-cooperation/>

¹⁶ Tomohiko Tsunoda, 2019, "New Developments in Japan's Marine Information Management," Sasakawa Peace Foundation, <https://www.spf.org/opri-intl/global-data/report/perspectives/20200526070748318.pdf>

¹⁷ Japanese Ministry of Foreign Affairs, "Strengthening Maritime Domain Awareness (MDA) capacity," <https://www.mofa.go.jp/files/100482325.pdf>

¹⁸ UK Government, 2022, "National Strategy for Maritime Security", <https://assets.publishing.service.gov.uk/media/62fcbf748fa8f504bd84581f/national-strategy-for-maritime-security-print-version.pdf>

¹⁹ Mira Rapp-Hooper et al., 2016, "Networked Transparency," CNAS, <https://www.cnas.org/publications/reports/networked-transparency-constructing-a-common-operational-picture-of-the-south-china-sea>

²⁰ Steven C. Boraz, 2009, "Maritime Domain Awareness: Myths and Realities," Naval War College Review, <https://www.jstor.org/stable/26397039>

²¹ Al Jazeera, 2022, "Quad launches 'anti-China' maritime surveillance plan," <https://www.aljazeera.com/news/2022/5/28/why-has-the-quad-launched-an-anti-china-surveillance-plan#:~:text=Quad's%20initiative%20is%20designed%20to,Chinese%20vessels%20in%20real%20time.>

²² Hu Yuwei et al., 2022, "GT investigates: US uses IPMDA to stir confrontation in South China Sea, while China seeks blue economy partnerships with ASEAN," Global Times, <https://www.globaltimes.cn/page/202212/1282448.shtml>

²³ Thanh Nam and Pham Hai, 2020, "ASEAN avoids strategic competition among major powers," <https://vietnamnet.vn/en/asean-avoids-strategic-competition-among-major-powers-673937.html>

²⁴ CRIMARIO, 2020, "The IORIS Information Exchange Platform", <https://www.crimario.eu/the-ioris-information-exchange-platform/>

²⁵ Mark Valencia, 2022, "Is the Quad's maritime domain awareness initiative a trojan horse for the US military?", Pearls and Irritations, <https://johnmenadue.com/quad-maritime-domain-awareness-initiative-trojan-horse-for-the-us-military/>

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also be worries about technological dependence, as witnessed in the US' ScanEagle program in Afghanistan²⁶.

- Technical compatibility is also something for ASEAN to think about, especially how new MDA capabilities should be integrated into their existing systems²⁷ whose hardware might come from sources such as Russia²⁸.

Despite their legitimacy, the abovementioned concerns do not reflect the comprehensive picture.

First of all, it is important to recognize that, despite its origins from a US perspective, the concept of MDA has increasingly been embraced at an international level, making it less sensitive than one might think. This is evident through the involvement of various actors mentioned, such as Australia, Canada, India, Japan, and the EU, as well as international organizations like the International Maritime Organization²⁹ and the African Union³⁰. Within ASEAN, MDA is also a common topic, featured in the agenda of the ASEAN Regional Forum (ARF)³¹ and the ASEAN Defense Ministers' Meeting (ADMM)³², as well as ASEAN exercises³³. Singapore has also developed its own Information Fusion Center and introduced the Real-time Information-sharing System (IRIS) within ASEAN³⁴.

Furthermore, these MDA initiatives have not faced official political condemnation from regional countries. China, often viewed as a cause for concern, has refrained from publicly criticizing initiatives like the Quad's IPMDA and has its own similar programs, such as the Blue Ocean Information Network³⁵. Additionally, it is worth mentioning that a significant portion of intelligence today is

²⁶ Thomas Neff, 2020, "\$174 Million Afghan Drone Program Is Riddled With Problems, U.S. Report Says", NY Times, <https://www.nytimes.com/2020/07/16/world/asia/afghan-drone-program.html>

²⁷ Susan G, Hutchins, et al., "Maritime Domain Awareness: Assessment of Current Status," <https://apps.dtic.mil/sti/pdfs/ADA503174.pdf>

²⁸ David Hutt, 2022, "Why Southeast Asia continues to buy Russian weapons," <https://www.dw.com/en/why-southeast-asia-continues-to-buy-russian-weapons/a-61364950>

²⁹ IMO, 2018, "Enhancing maritime domain awareness in West Indian Ocean and Gulf of Aden," <https://www.imo.org/en/MediaCentre/Pages/WhatsNew-1203.aspx>. As the "effective understanding of anything associated with the maritime domain that could impact security, safety, the economy or the marine environment."

³⁰ African Union, 2016, "African Charter on maritime security and safety and development in Africa," https://au.int/sites/default/files/treaties/37286-treaty-african_charter_on_maritime_security.pdf

³¹ Japanese Ministry of Foreign Affairs, 2020, "2nd ARF Workshop on International Cooperation on Maritime Domain Awareness (MDA)", https://www.mofa.go.jp/press/release/press6e_000213.html

³² Ministry of Defense of Singapore, 2019, "RSN's Information-Sharing System Main Platform Used At Inaugural ASEAN-US Maritime Exercise", https://www.mindef.gov.sg/web/portal/mindef/news-and-events/latest-releases/article-detail/2019/September/02sep19_nr

³³ Thanh Niên, 2019, "Việt Nam tham gia diễn tập hàng hải chung ASEAN - Mỹ", <https://thanhnien.vn/viet-nam-tham-gia-dien-tap-hang-hai-chung-asean-my-185880327.htm>

³⁴ Ministry of Defense of Singapore, 2019, "RSN's Information-Sharing System Main Platform Used At Inaugural ASEAN-US Maritime Exercise", https://www.mindef.gov.sg/web/portal/mindef/news-and-events/latest-releases/article-detail/2019/September/02sep19_nr

³⁵ Felix Chang, 2021, "China's Maritime Intelligence, Surveillance, and Reconnaissance Capability in the South China Sea", FPRI, <https://www.fpri.org/article/2021/05/chinas-maritime-intelligence-surveillance-and-reconnaissance-capability-in-the-south-china-sea/>

derived from civilian-open sources³⁶, and web-based MDA tools can be adopted flexibly, regardless of hardware differences.

Potential Contribution to Regional Security Needs

More importantly, these MDA programs can help address critical ASEAN members' needs in addressing unconventional security threats, including the so-called "gray zone" tactics and illegal, unregulated, and unreported (IUU) fishing in the South China Sea.

Regarding the "gray zone," this has been a new reality, especially around unoccupied features in the Spratlys³⁷, with Vietnam and the Philippines being considered frequent targets³⁸. Last May, the Chinese survey ship XYH-10, along with its escorts made up of coast guard and potential militia vessels, entered Vietnam's exclusive economic zone. The ships' AIS could be picked up by open-source tools, but their activities were harder to decipher³⁹.

Regarding IUU, many ASEAN members are ranked in the top 50 or 60 countries with serious IUU fishing issues, according to the IUU Fishing Index⁴⁰, with Vietnam still being imposed the "yellow card" on aquamarine products by the European Commission since 2017. Vietnam has set the goal for the yellow card to be removed before the 2024 European Parliamentary elections, pressing the need for substantial progress even further⁴¹.

Against this backdrop, the offered MDA initiatives can provide multiple layers of real-time data on a large geographical scale, overcoming the limits of existing AIS-based monitoring tools by integrating databases from electro-optical, radio frequency, AI, unmanned vehicles, and so on, helping to detect vessels even when their location transmitting devices have been switched off⁴². This can help detect and understand the challenges faster and also deter new threats from happening, especially when the South China Sea is getting more and more crowded.

A situation where a similar mechanism has led to success is the case of the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP). It is reported that the number of incidents in Asia has decreased overall ever since the establishment of ReCAAP's

³⁶ PTE E, 2018, "The Tactical Application of Open Source Intelligence," <https://cove.army.gov.au/article/tactical-application-open-source-intelligence-osint#:~:text=%20Hulnick%20estimated%20that%20as%20much,to%20become%20even%20more%20robust>.

³⁷ South China Morning Post, 2021, "South China Sea: 300 Chinese 'maritime militia' vessels in Spratly Islands at any time, says US report", <https://www.scmp.com/news/china/diplomacy/article/3156720/south-china-sea-300-chinese-maritime-militia-vessels-spratly>

³⁸ Peter Lee et al., 2022, "MANY HANDS: AUSTRALIA-US CONTRIBUTIONS TO SOUTHEAST ASIAN MARITIME SECURITY RESILIENCE", USSC, <https://www.uscc.edu.au/analysis/australia-us-contributions-to-southeast-asian-maritime-security-resilience#footnote-ref-132>

³⁹ Hoang Lan and Nhat Linh, 2023, "Chinese Survey Vessel Xiang Yang Hong 10's Encroachment on Vietnam's Waters: Intention and Consequences", <https://en.nghiencuubiendong.vn/chinese-survey-vessel-xiang-yang-hong-10s-encroachment-on-vietnams-waters-intention-and-consequences.56403.anews>

⁴⁰ IUU Fishing Index, 2022, "2021 results", <https://iuufishingindex.net/ranking>

⁴¹ Chuong Phuong, 2023, "Vietnam working to have EC's 'yellow card' on IUU fishing lifted before April 30", <https://en.vneconomy.vn/vietnam-working-to-have-ecs-yellow-card-on-iuu-fishing-lifted-before-april-30.htm>

⁴² Government of Canada, 2022, "Government of Canada launches international program to track illegal fishing using satellite technology," <https://www.canada.ca/en/fisheries-oceans/news/2021/02/government-of-canada-launches-international-program-to-track-illegal-fishing-using-satellite-technology.html>

information-sharing center, which increases understanding of what goes on on the ground⁴³. In ReCAAP's 2022 report⁴⁴, the severity and frequency of armed robbery are shown to generally drop from 2018-2022, with countries like the Philippines or Indonesia making visible improvements in the 2021-2022 period⁴⁵.

New technologies in the future could also be employed for other ASEAN development needs, including: (i) tracking sea-level rise impacts – an issue of critical importance when many ASEAN cities, such as Manila or Bangkok, are said to be vulnerable to submersion⁴⁶; (ii) identifying the potential for new offshore and renewable energy sources, contributing to ASEAN's goals made in COP26 (Malaysia committed to a 45% emission reduction, Vietnam promising to achieve net-zero emissions by 2050, etc.⁴⁷); (iii) facilitating capacity to master emerging technologies in the long run, including unmanned aircraft, floating buoys, space satellites, or artificial intelligence; and (iv) maintaining navigational safety⁴⁸, especially when the South China Sea is getting busier. These could all fit under the Cooperation Areas in ASEAN's Outlook on the Indo-Pacific⁴⁹.

Connectivity in one ASEAN country could benefit from new MDA initiatives. In Vietnam, agencies participating in maritime monitoring usually utilize internal databases and locally produced software (ViShipel⁵⁰), which is AIS-based and most effective near the coastline. External databases such as Ship Finder or Marine Traffic have been introduced, but mostly for individual reference due to their commercial nature. New multilateral MDA programs can help bridge that gap by providing a one-stop shop for all commercial databases and points of contact from international partners, allowing users to interact in sharable and affordable interactive platforms.

Proposals for Better-Embraced MDA Initiatives

There is always room for more effective MDA efforts in ASEAN.

For ASEAN partners, from a political perspective, while inviting ASEAN members to join their MDA initiatives, they should:

- Make sure that substantial information is given. For example, there are still questions about IPMDA's potential scope of coverage: What new technologies will be integrated after the first

⁴³ Ruby Hassan, 2022, "Piracy and armed robbery in Asia - update," Skuld, <https://www.skuld.com/topics/port/piracy/piracy-and-armed-robbery-in-asia---update/>

⁴⁴ Maritime Cyprus, 2022, "ReCAAP Piracy and Armed Robbery against Ships in Asia, Annual report 2022", <https://maritimecyprus.com/2023/01/26/recaap-piracy-and-armed-robbery-against-ships-in-asia-annual-report-2022/>

⁴⁵ Ibid.

⁴⁶ Katharina Buchholz, 2021, "Asia's Sinking Cities," Statista, <https://www.statista.com/chart/25152/risk-of-rising-sea-levels-flooding-in-asia/>

⁴⁷ ASEAN Centre for Energy, 2021, "COP26: ASEAN's Commitment in The Energy Sector", <https://webcache.googleusercontent.com/search?q=cache:8hqF6Pxl7TEJ:https://aseanenergy.org/cop26-aseans-commitment-in-the-energy-sector/&hl=en&gl=vn>

⁴⁸ Peri Dinakar, 2023, "Quad's IPMDA a proof of our commitment to a free, open, inclusive Indo-Pacific: Navy Chief", The Hindu, <https://www.thehindu.com/news/national/quads-ipmda-a-proof-of-our-commitment-to-a-free-open-inclusive-indo-pacific-navy-chief/article67500745.ece>

⁴⁹ ASEAN, 2019, "ASEAN Outlook on the Indo-Pacific," https://asean.org/asean2020/wp-content/uploads/2021/01/ASEAN-Outlook-on-the-Indo-Pacific_FINAL_22062019.pdf

⁵⁰ Vishipel, "Giới thiệu về Vishipel", <https://vishipel.com.vn/gioi-thieu.htm>

5-year period, and how transparent can it be? Will further technological integration require users' consent? Will users be required to provide their own information later on? How secure can users' usage of online platforms be?

- Reinforce a common code of participation, including voluntary and consensual usage and contribution, inclusive membership, and long-term commitment. Multilateral MDA initiatives should leave the door open for all interested parties in ASEAN. The offering partners should also make sure that their political support for MDA cooperation will be unwavering, regardless of domestic political changes.
- Build MDA reputation around promoting public goods rather than strategic competition.

From an operational perspective, it is important to differentiate between strategic or confidential information sharing and tactical or open-source information sharing within MDA.

- Strategic or confidential information includes sensitive intelligence, classified data, and operational plans, typically shared among trusted partners through secure channels and limited to authorized personnel. Tactical or open-sourced information refers to publicly available data of a non-sensitive nature, sharable among a wider audience, including international partners, organizations, and the public.
- In this context, ASEAN countries should be able to join at their own pace, taking part in whatever category they are comfortable with, whenever they want, retaining autonomy over strategic/confidential data.
- Within the open realm, prioritized activities should include anti-IUU, piracy and smuggling, search and rescue, environmental protection, disaster prevention, and seaport connectivity, etc. instead of militarized purposes.
- Tactical cooperation should also move from information gathering toward information analysis (which is similar to the UK's MDA model) and move from sharing a platform toward sharing expertise and technology to build a platform.
- A more coordinated MDA portal via their web-based tools should be introduced to avoid functional overlap and communicational confusion for ASEAN (e.g., the EU's IORIS is similar to the US's SeaVision or Canada's Dark Vessel platform). The UK's focus on informational analysis can make up for the shortage of web-based tools for mere informational collection.

ASEAN countries should acknowledge that MDA capacity building is a real need, regardless of its label. If the term "MDA" is deemed too sensitive, then ASEAN can come up with its own term for MDA, such as "maritime informational sharing" or "maritime domain connectivity." ASEAN can also make use of its existing platforms, including ADMM, AUMX, or EAMF, to push for itself to become a potential hub for MDA connection, utilizing its strength in trust-building and its current inclusive partnership network. MDA can also be featured more heavily in ASEAN's own maritime exercises among members and with its partners.

For ASEAN countries, it is crucial to recognize the genuine need for capacity building in MDA. The following recommendations could partly help ASEAN operationalize its Indo-Pacific Outlook's elements on Maritime Security and Connectivity, as well as strengthen its Security Community pillar:

- If the term "MDA" is considered too sensitive, ASEAN should develop its own terminology, such as "maritime informational sharing" or "maritime domain connectivity."
- ASEAN can position its existing platforms, such as the ADMM or East Asia Maritime Forum (EAMF), as a potential hub for MDA collaboration, taking advantage of its strengths in trust-building and inclusive partnerships.
- ASEAN can also incorporate MDA more prominently in its maritime exercises among member states and with partner countries, including India, the US, and even Russia or China.
- In Track 1.5 or Track 2 channels, ASEAN can establish a system connecting research institutes and universities related to maritime security and technology, organizing workshops or joint research to expand the usage of MDA. It can also provide a platform for generating new policy recommendations and training in soft skills necessary for tactical cooperation, such as foreign language proficiency, international law, information analysis, and maritime strategy planning.

In general, there are multiple MDA programs offered to ASEAN countries, which can help ASEAN meet its development and security needs, as well as operationalize the elements of the ASEAN Indo-Pacific Outlook related to Maritime Security and Connectivity while reinforcing ASEAN's Security Community pillar. However, they are subject to potential technical and political concerns. ASEAN's partners should find a way to coordinate with each other first, presenting to ASEAN a more coordinated and transparent offer, taking advantage of individual strength, moving towards data analysis rather than just data collection, and saving space for flexible usage.



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