



# Proceedings

## Indo-Pacific Maritime Security Exchange (IMSE) 2023

### A Webinar - August 3-4, 2023



The enduring theme of IMSE is *Building Partnerships for Security, Stability, and Prosperity*. The focus area for 2023 was Ensuring Free Access to the Maritime Commons. Topics included illegal, unreported and unregulated fishing (IUUF) and its links to transnational crime, understanding the economic impacts of IUUF, enabling effective maritime engagement and partnerships, emerging maritime capabilities and capacities, and ever increasing transparency of the maritime domain.

A simple definition of maritime security has four key elements: freedom of navigation, unrestricted flow of commerce, the protection of ocean resources, and the exclusive rights of sovereign nations in their Exclusive Economic Zones (EEZs).

The on-line conference was introduced by Larry Osborn, CAPT, USN (Ret.), the IMSE chair.

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#### Day 1 - August 3, 2023

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### I. ILLEGAL, UNREPORTED, AND UNREGULATED (IUU) FISHING AND TRANSNATIONAL CRIME

#### Session 1-1 Keynote Address - Admiral Sakai Ryo, Japan Maritime Self-Defense Force



The Keynote address was by **Admiral Sakai Ryo**, Chief of Staff for the Japanese Maritime Self Defense Forces (JMSDF). He emphasized that the Indo-Pacific region was a vital hub for trade with critical sea lines of communication vital for economic growth. Freedom of navigation is essential for security. Japan's goal he said was to develop mutual understandings among like-minded countries. The region faces a changed environment with serious challenges from political competition, overt provocations by some, and expanding hybrid warfare incidents, such as in the cyber realm. Admiral Ryo spoke of Japan's previous involvement in international efforts to curb piracy off Somalia, its disaster relief efforts in the Pacific, and today modernizing the JMSDF warfighting capabilities, the nation's missile defenses, its capabilities for interoperability and international combined command. His was a comprehensive address of Japan's national direction.

#### Session 1-2 UNCLOS Notes on IUU Fishing

**Dr. Camille Goodman** of the University of Wollongong and the Australian National Centre for Ocean Resources (ANCORS), reviewed the legal basis for fisheries enforcement, including the relevant provisions of the UN Conference on Law of the Sea (UNCLOS), the UN Fisheries Stocks Agreement (UNFSA), the rules of Regional Fisheries Management Organizations (RFMOs), and bilateral agreements between nations. She explained the various zones relevant to enforcement of fishing, including territorial waters, and Exclusive Economic Zones (EEZs), both of which fall under the jurisdiction of the coastal state, and the high seas, which only are liable to the flag state of the vessel. She also explained what was "innocent passage" and "archipelagic sea lanes passage" for foreign vessels. The rules are complex, but under exceptional cases, she noted, non-flag state enforcement is possible with the permission of the flag state.



### Session 1-3 Foreign Malign Influence

Following Dr. Goodman, **John Parks**, of the USAID Sustainable Fish Asia Technical Support project, introduced several presentations addressing foreign malign influences related to IUU fishing and associated maritime crimes in the Pacific. He noted that increasing fish scarcities have prompted higher levels of competition resulting in increasing conflict, especially with Distant Water Fleets (DWF). He also noted that IUU fishing is being used as a form of power projection by sponsoring states. The goal of the USAID project is to improve management of marine biodiversity and fisheries involving 10 ASEAN countries plus Papua New Guinea, the Solomon



### Session 1-4 Role of Foreign State Actors in the South China Sea and Sulu- Sulawesi Seascape

Next was a presentation on the role of state actors in the South China Sea and Sulu-Sulawesi

seascape of Indonesia. Speakers included **Brian Eyster** of the Stimson Center, director of the center's USAID program. Other presenters were **Lily Schlieman**, research assistant; **Regan Kwan**, research associate; and **Sally Yozell**, the director of environmental and security program. They addressed the roles of state actors in the regions of contested boundaries. The PRC's island building efforts in the South China Sea has destroyed fish habitats, its coast guard and maritime militia have



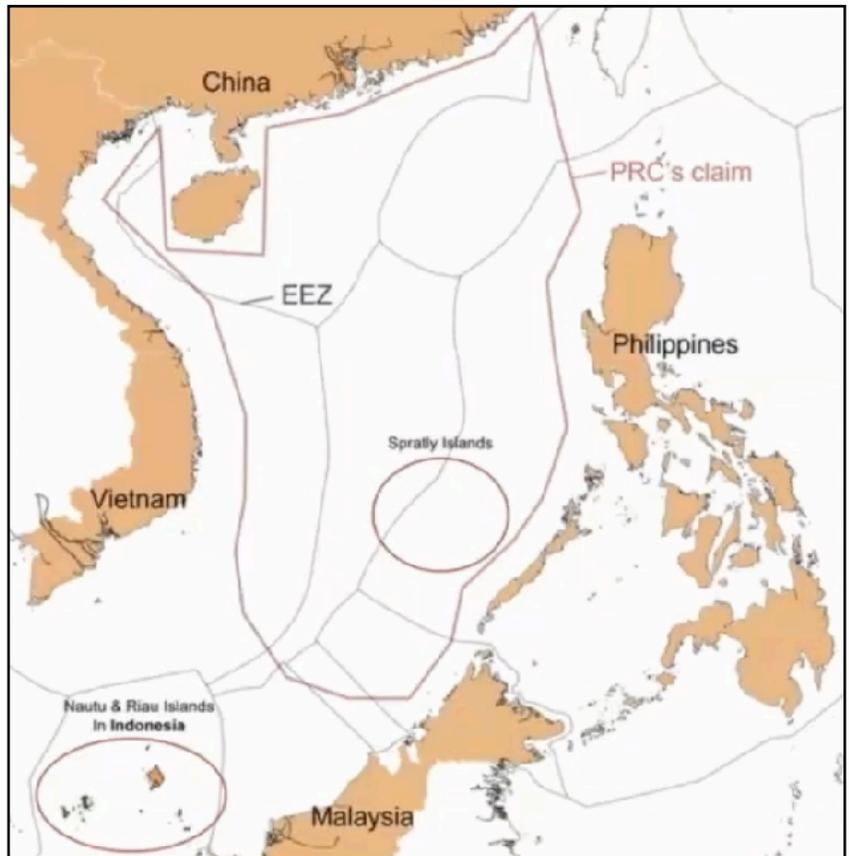
blocked the Scarborough Shoal region within the Philippines' EEZ despite the International Court of Justices ruling against China. Additionally, the PRC has enforced a closed season within the EEZs of Vietnam and the Philippines.

PRC "research vessels" surreptitiously violate the territorial waters of Indonesia and Malaysia and in the Sulu-Sulawesi region, turning off the required Automatic Identification System (AIS) transponders. Vietnam's 1,000+ "blue boat" fleet poaches fish stocks within



Indonesia's EEZ and in the Sula-Sulawesi waters.

Vietnam does little to control this activity.



## Session 1-5 Economic Impacts of IUU Fishing by Distant Water Fleet Operations



Three speakers, **Dr. Soojung Ahn, PhD**, and **Professor Robert Pomeroy** of the University of Connecticut and **T. Van Phuong, PhD**, of Vietnam's Nha Trang University analyzed the economic impacts of IUU fishing by the distant water fleets' operations on the livelihoods of small-scale fishers in Southeast Asian waters. They examined food security, incomes, employment, and market impacts. Since 2005 incidents involving DWF fleets have increased due to weak governance and spotty enforcement. Most impacted by DWFs are local fishers.



## Session 1-6 Role of Foreign State Actors within Marginalized Fishing Communities

Researchers **Anny Barlow** and **Joey Pedrajas**, supporting the USAID program, spoke about the role of foreign state actors within marginalized fishing communities in the South China Sea and Sulu-Sulawesi Seascape. They examined small-scale fisher folk, especially the "Sama" (or sea gypsies), who live on stick houses and small boats, are migratory, often stateless, and experience extreme poverty, to determine their vulnerability to malign actors. PRC encroachment and organized crime was not at levels feared on the Philippine Sula-Sulawesi region. Over fishing was mostly from local fishers, who did not know of the law or fishing regulations. Their study identified many needs, including the establishment of schools, provision of fishing technology, social programs, and mitigation efforts for climate-related changes, such as sea level rise, warming oceans, and dangerous weather.



## Session 1-7 Panel Discussion

**John Parks** hosted the session's panel discussion to answer submitted questions. Researchers noted concerns about geo-politics affected their work as some nations did not want to get involved in a US-China debate. It was also noted that vessels departing from the PRC had changed their vessel flags. Also, surprising were the number of Vietnamese vessels involved in illegal activities. When asked to predict how matters might be in three to five years respondents believed that ocean resources would continue to decline and conflicts would increase. Food security problems would increase. The illegal wildlife trade would flourish due to poor governance and enforcement. And despite conservation efforts small fishers would increasingly be hurt. When asked what to do, respondents indicated that increasing the capacity of nations to surveil their national waters and of international organizations to promote beneficial policies are important. Proving that fish are legally caught when offloaded in port would help curb illegal fishing.



## Session 1-8 Taking an Ecosystem Approach to Fisheries Management

**Professor Robert Pomeroy** and **Joey Pedrajas** discussed taking an ecosystem approach to fisheries management in the Southeast Asian Sea (aka South China Sea) to address the issues of state sponsored illegal fishing and associated maritime crime. Professor Pomeroy noted that the South China Sea is classified as high risk due to the competition for fish, which has and will continue to lead to conflict. Today there is no fisheries governance for the region, which accounts for 12% of global fish catch and has 50% of the world's fishing vessels. Fish stocks have fallen between 70% and 90% since 1950 in the region. His efforts propose developing a multi-national strategy and fisheries management unit to initially discuss common needs and concerns leading to a multi-national integrated fishing management plan. Work has begun with the Philippines, Malaysia, Indonesia and Vietnam. The PRC has no ostensible national fisheries plan but has imposed unilaterally a May to August fishing ban in the South China Sea enforced in part by its armed maritime militia.



## Session 1-9 Reimagining Fisherfolk Engagement through Scenario-based Training

**Alexander Min** and **Vincent Nguyen**, former US Navy and Coast Guard officers, spoke about reimagining fisherfolk engagement through scenario-based training exercises. The purpose is to educate and train the fisherfolk of the region, some 30 million strong, how to recognize and report illegal fishing and DWF incursions and harassment. They are developing a "Fishers Guide for Reporting Illegal, Unreported, and Unregulated Fishing." Taking a grass roots approach through various regional organizations and NGOs their efforts to train the trainers recognize that in combatting IUU fishing and other malign activities fisherfolk are part of the solution.



## Session 1-10 Barriers, Opportunities, and Emerging Solutions in Applying Artificial Intelligence and Machine Learning

**Stuart Green** of Blue Green Advisors reported on his research with **Farid Maruf** that interviewed 50 experts on Artificial Intelligence and Machine Learning technologies with a focus on barriers, opportunities, and emerging solutions in applying AI and ML to the problem of maritime illegalities. They noted that governments in the region and the fishing sector lag in the application of these technologies due to a number of barriers - difficult communications, lack of electrical power on many fishing boats, legal impediments, and a regional brain drain to regions of high technology, such as Singapore and the US. They noted the opportunities for AI and ML related to fishing, including tracking fishing vessels; identifying violations of EEZs; supporting analysis for policy deliberations by Regional Fishing predictive Management Organizations; modeling and determination of trends; supply chain monitoring to identify sources of illegal fishing and development of certification systems, as well as labor violations and human trafficking; and improvement of safety at sea.



## Session 1-11 Panel Discussion



This section of the conference ended with a live panel, moderated by **John Parks**, to address questions that had been submitted. Professor Pomeroy was asked about his not using “South China Sea” and whether this had political implications. He noted other organizations were seeking different nomenclature to signal that the waters were not the province of the PRC. Other questions posed elicited panelists’ comments on the criticality of small fishers being able and educated to communicating with law enforcement when observing illegal fishing or being harassed by foreign malign actors.

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Day 2 - August 4, 2023

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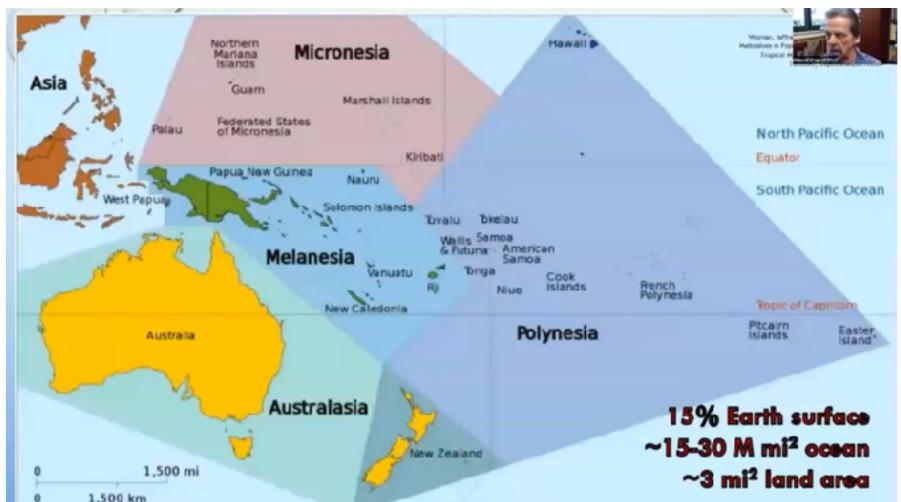
## II. ENABLING EFFECTIVE MARITIME ENGAGEMENT AND PARTNERSHIPS

Day 2 of IMSE 2023 focused on the maritime elements in the Indo-Pacific region and on emerging capacities and technologies relevant to maritime domain awareness.

### Session 2-1 Overview of the Pacific Islands of Micronesia, Melanesia, Australasia, and Polynesia.



**Dr. Ethan Allen** of the Daniel K. Inouye Asia-Pacific Center for Security Studies gave an overview of the Pacific Islands of Micronesia, Melanesia, Australasia, and Polynesia. Historically these islands were settled differently and therefore have different cultures and separate language. One example is Yap that has a population of 10,000 but four different island languages. The islands have different governances. Some are in free association with the US, others with New Zealand. It is difficult for the islands to be economically viable with small landmass and populations. Some, like Nauru, were exploited for their resources. Eighty percent of Nauru was mined for fertilizer, leaving little else. Dr. Allen noted that the Pacific islands have huge EEZs, which together form the concept of a “Blue Continent.” Through regional organizations, such as the Pacific Islands Forum, they are pursuing solutions to common concerns, including illegal fishing, at sea crime, and preservation of maritime resources. A new concern is deep sea mining for minerals. While the opportunities to “rent” out parts of an EEZ is economically attractive, there are concerns of the long-term effects on the maritime ecosystem. International political issues have also affected island relationships. The Solomon Islands and Kiribati have recognized the PRC and there are concerns over the opaque policing and military agreements that have been reached.



## Session 2-2 Challenge of Enforcing IUUF from the Deckplate Level



Repeated in IMSE 2023 is a presentation by **Captain Holly Harrison**, USCG, that was given in IMSE 2021. Captain Harrison was the skipper of the USCGC Kimball which was involved in at-sea enforcement of fishing-related laws. She provided a deckplate perspective on at-sea enforcement operations. She addressed the "tyranny of distance," and the considerations a skipper must assess - ship speed, time, distance, fuel state, weather, remote and limited logistics, and the possibility of help, all related to the need to be self-sufficient. She emphasized the complexity of boarding operations and the importance of intelligence and the value of surveillance assets, such as the ScanEagle remotely piloted aerial vehicle that enables covert surveillance of IUU fishing vessels. She emphasized the key nature of partnerships for language interpreters, fish stock experts, and information sharing.



## Session 2-2 China's Belt and Road Initiative

**Dr. John Hemmings**, Senior director for Indo-Pacific programs at the Pacific Forum addressed the PRC's Belt and Road Initiative (BRI). Following the earlier concept of the Silk Road, in 2013 the BRI emerged as a major Chinese infrastructure and development strategy. While initial guesstimates were that China would invest trillions of dollars, by 2019, the Council on Foreign Relations indicated spending totaled \$80 billion. China has signed 45 BRI cooperative agreements as a major element of its foreign policy. Many of these agreements are secretive. According to Hemmings the Maritime Silk Road and Digital Silk Road components of the BRI are the most significant. Via the Maritime Silk Road China owns, leases, and operates many critically positioned ports and harbors worldwide. The Digital Silk Road provides modern communications technologies for these ports and for cities. The inclusion of surveillance technologies allows for real-time management of operations. These, of course, rely on Chinese technical standards.



Criticisms of China's BRI have grown, especially as its loans to Third World countries have saddled them with heavy debt. Hemmings noted that BRI efforts involve loans, not grants, and the monies

go to domestic Chinese companies that perform the infrastructure work. This is a means of exporting large numbers of Chinese workers who otherwise would be unemployed in China. Hemmings described this economic statecraft of being coercive in many ways. As to the future he perceived China, due to its domestic economic slowdown, may lessen its foreign investments. The BRI has, and will, bring benefits to China in access to foreign markets, technologies, and geopolitical influence.

### III. EMERGING MARITIME CAPACITY AND CAPABILITY

#### Session 3-1 The Navy of the People's Republic of China

**Brent Sadler**, senior research fellow at the Heritage Foundation, addressed the growth and capabilities of the PLA Navy (PLAN). The speed of its growth in the numbers and types of ships has been surprising, with estimates that it may total 400 combatants in the foreseeable future. The PLAN underwent reforms starting in 2017 to be more of a joint force, with aircraft carriers, cruisers, destroyers, and submarines. A third carrier is under construction. The question is whether it will be nuclear or diesel powered. If the latter, Sadler opined, it would indicate an urgency on the part of Beijing. The PLAN is expanding its ballistic missile nuclear submarines but needs an improved SLBM to fully hold the US at risk. Sadler noted the development of unmanned submersibles, one a carbon copy of the US Sea Hunter. The PLAN seeks to be a global, blue water force Sadler concluded.



#### Session 3-2 The Chinese Maritime Militia

**Greg Poling** of the Center for Strategic and International Studies (CSIS) then addressed the Chinese maritime militia. In 2013 President Xi announced that China would become a maritime power. One thrust was to expand and professionalize the Peoples Armed Forces Maritime Militia, which is an element of the state. Its members wear military uniforms and fall under the command and control of the state. Estimates are that there are approximately 200 vessels in the militia. It is used for coercive operations against the various states bordering the South China Sea. There is another maritime militia, the Spratley Backbone Station. It is composed of some 300-500 privately owned vessels that are required to spend 280 days per year in the Spratley Island chain, portions of which are claimed by Vietnam, Malaysia, Taiwan, the Philippines and Brunei. These un-uniformed militia do not fish commercially; each vessel, often with only a skeleton crew, is subsidized heavily by the Chinese government to portray presence in the region it claims.



### Session 3-3 Keynote Address - Rear Admiral Christopher Smith, Royal Australian Navy

**Rear Admiral Christopher Smith**, Commander of the Australian Fleet, Royal Australian Navy, addressed Australia's rationale for its military forces, naval policy and the recent Defense Strategy Review. He noted that a navy is essential for economic prosperity, uninterrupted trade, and security of communications, especially via undersea cables. Freedom of the sea for a nation like Australia, far removed from many of its allies, is essential. He noted this is under strain today and that the Indo-Pacific has become a center of competition between those who adhere to a rules-based order and those that do not. He also noted that the recent AUKUS agreement on providing Australia with nuclear-powered submarines is a reaction to recent world changes. He summarized the Defense Strategy Review's goals - defend Australia from attack, deter enemies from the north through denial of operations, protect essential sea lines of communication, and follow the established rules-based order. He noted that future decisions need to be made about the Australian Navy surface fleet and modernization of capabilities.



### Session 3-4 Taiwan Maritime Forces

**Dr. Bill Sharp**, an associate of the Center for Chinese Studies at the University of Hawaii at Manoa, addressed the maritime forces of Taiwan. He noted that President Tsai Ing-wen is a promoter of the military and instituted a new shipbuilding program, including domestic submarines and a wide variety of missiles. Conscriptioin has been increased to one year. However, Sharp noted that there is an internal dispute over strategy and whether large platform ships are better than "porcupine" measures to deter PRC aggression. The ROC navy has the mission of countering a blockage of the island and protecting sea lines of communication. Sharp also noted the persistent problem of PRC espionage often aimed at Taiwanese flag officers. He blames a poor security clearance process and weak counterintelligence. He also recommends returning the military justice system to the military from the civilian court system.



### Session 3-5 Republic of Korea Navy

The Republic of Korea Navy organization, capabilities, challenges and future plans of the Republic of Korea Navy was laid out by **Captain Soonkun Oh**, the Naval Attaché to the Indo-Pacific Command in Hawaii. He emphasized the #1 challenge is from North Korean nuclear and missile systems. He noted other challenges, including regional instability in the Western Pacific, the paradigm changes in warfare, such as cyber and new technological applications, and Korea's low birth rate, which is a future concern. Captain Oh discussed the ROK Navy's participation in international exercises, including RIMPAC and Talisman Saber, led by Australia. He also outlined future priorities. Number 1 is the Defense Innovation Plan 4.0, aimed at developing AI-based superior capabilities and unmanned systems, as well as all domain command and control and cyber and electromagnetic capabilities. High priority is given to countering North Korean nuclear missiles to include an at-sea AEGIS defense capability. Captain Oh indicated that by 2040 40% of the ROK Navy's vessels will be autonomous and equipped with modern weapons.



### Session 3-6 The Navies of Southeast Asia



An overview of the Navies of Southeast Asia was presented by **Captain Edward Lundquist**, USN (Ret.), who is a senior defense correspondent. He noted that many countries have smaller navies that more closely resemble coast guards. Those with many islands also have ships that are capable for humanitarian assistance and disaster relief in the region, which has many natural disasters such as typhoons and volcanic eruptions. He addressed the orders of battle of Bangladesh, Brunei, Indonesia, Malaysia, Myanmar, Sri Lanka, Thailand, the Philippines, and Vietnam.

## IV. MARITIME DOMAIN AWARENESS; INCREASING TRANSPARENCY ON THE HIGH SEAS

### Session 4-1 The Legal Regime for Unmanned Maritime Systems in International Waters



**Dr. Natalie Klein** of the University of New South Wales Sydney Faculty of Law spoke about the emerging legal regime in international waters and questions related to maritime autonomous vehicles (MAV). The advent of MAV has raised questions such as What is a ship? What is a warship? Various organizations have developed different definitions, including the International Maritime Organization (IMO) that focuses on cargo ships, and Lloyds of London, which issues insurance to vessels. UNCLOS defines a warship as a vessel under the command of an officer and with a crew. Does an operator in a remote control facility and his/her staff constitute the same as being on-board? There are conditions for law enforcement to pursue into international waters a suspected violator of national laws. A ship must be clearly identifiable as a government vessel. How does this apply to a MAV? Can a MAV signal a suspected violator vessel to stop? International law requires vessels to give "due regard" to others. How does a MAV do this? Many of these questions are unresolved today.

### Session 4-2 Technology Panel - Collectors, Aggregators, Sensors, and Platforms

Two panels concluded Day 2 of IMSE. The first was a technology panel looking at some of the new systems and technologies for data collection and aggregation related to maritime domain awareness. Panelist were **Adam Watters** of Saildrone, Inc., the builder of autonomous sea vessels used for surveillance; **Mat Brown** of Starboard Maritime Intelligence, a New Zealand company; **Matan Peled** of Windward AI, founder of an Israeli company that provides AI-driven maritime insights; and **James McAden** of Hawkeye 360, a US space company providing worldwide surveillance of the radio frequency spectrum.



Saildrone's products include three autonomous vessels, some of which are capable of a year-long deployment. These vessels have been used for scientific research, weather data gathering, and maritime surveillance. The vessels employ sensors for collecting Automatic Identification System (AIS) data, radar, video (including infrared), and passive acoustics. These data are provided to others who are aggregators and analysts.

Starboard Maritime Intelligence supports regional fishing management organizations (RFMOs) and fishing management agencies, using AIS, radio frequency data, synthetic aperture radar and visible satellite imagery compared with





International Maritime Organization and Standards and Poors data to identify individual vessels that have been engaged in suspicious or illegal activities. Their analyses have led countries to refuse port entry to such vessels to unload their catch. The power of multi-source data for determining vessel activities was emphasized by Windward AI's presentation. It showed an example of identifying suspicious behavior in the Persian Gulf-Arabian Sea region, tying together multiple sources of data, in a way that was invisible to the targeted vessel, not requiring on-scene surveillance for confirmation. Lastly, HawkEye 360 demonstrated its signals intelligence capabilities, including against non-cooperative vessels, using various techniques for VHF, L-band (satellite phones), and UHF communications and X- and S-band navigation radars. The company has in beta test unique signal recognition capabilities, tied to specific vessels. Its data is provided to the US Government, the international Fisheries Forum Agency, and Australia.



### Session 4-3 Panel Discussion - Implications of Increased Maritime Domain Transparency

The second was a panel of experts who discussed the implications of increased future maritime transparency. Panelists included **Matan Peled**, **Brent Sadler**, and **Professor Denny Roy** of the East-West Center at the University of Hawaii at Manoa. Denny Roy



stated that the China-US competition has become the dominant issue in the Indo-Pacific. Each sees the other as an adversary, which has altered the equation for cooperative relations. As the power gap has narrowed each, suspicious of the other, evaluates how cooperation may benefit the adversary more than itself, which is what underlies current policy on semi-conductor exports and investment portfolios. Professor Roy sees that the future will involve an arms race between surveillance technologies and



camouflaging countermeasures. The US and China will strive to create the international order in their own contrasting images, and geo-strategic issues will predominate. Brent Sadler noted that as the PRC increases its relative military power it becomes more confident in its behavior and willing to take risks. The US needs to



improve its Indo-Pacific presence to counter China's "gray zone" activities employing its maritime militia, coast guard, and navy to intimidate its neighbors. Matan Peled added that increased amounts of data do not necessarily equate to better insights. Data will be used and abused.

In response to a question of how to better respond to Chinese gray Zone activities Brent Sadler emphasized the need to have adequate presence to keep the PRC from dominating regions. He also stressed the importance of economic statecraft.

Professor Roy said that the US has not been creative in its response to Chinese activities and needs to re-think its approaches. Matan Peled pointed out that there are commercial, non-commercial, and government-sponsored vessels involved in maritime illegal activities. He identified refer vessels, oilers that refuel IUU fishers, and other support craft, most of which are not Chinese flagged. These vessels are involved in other illegal activities, such as human

trafficking and slavery. He posited that law enforcement should concentrate on these vessels, and their owners, which would cripple much of the IUU fishing.

In closing, Matan Peled observed that in the broad ocean the US can pick its place to counter Chinese illegal activities. The increasing use of the PLA Navy instead of its maritime militia and coast guard has raised the risks of confrontation. Comparing numbers of navy ships, he opined, is "old think." We can be more agile in responding to Chinese gray zone aggression. Brent Sadler agreed that we can pick where to confront Chinese illegal activities. Citing the example of when a massive Chinese DWF violated Ecuador's EEZ around the Galapagos, he posited that the US could provide early warning to other countries via surveillance of the DWF allowing the gathering of forces to enforce sovereignty and legal fishing. Professor Roy concluded that the US ought to welcome greater transparency and sharing of data, emphasizing diplomatically that it is for the common good and not petty self-interest.

This concluded IMSE 2023.

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### **IMSE 2023 Attendance**

The IMSE 2023 audience included 300 registered attendees from more than 40 nations.

### **IMSE On-line Library**

IMSE maintains on-line a library of documents related to the 2023 Webinar. It includes US and allied government documents and releases, relevant articles, and videos. These can be accessed at [www.imsehawaii.org](http://www.imsehawaii.org).

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### **About IMSE**

IMSE is produced by Navy League of the United States Honolulu Council, in cooperation with the Daniel K. Inouye Asia-Pacific Center for Security Studies, the East-West Center at the University of Hawaii at Manoa, the Pacific Forum, and the US Agency for International Development. The enduring IMSE theme is *Building Partnerships for Security, Stability and Prosperity*. IMSE's purpose is to provide a forum for senior leaders, subject matter experts, and interested members of the general public to engage in dialogue about maritime security in the Indo-Pacific region.

The enduring IMSE theme is *Building Partnerships for Security, Stability and Prosperity*. Each year Navy League Honolulu Council draws support from one or more of the sea services (U.S. Navy, U.S. Marine Corps, U.S. Coast Guard, and the Merchant Marine) to produce IMSE. In order to ensure a rich and diverse program, other relevant organizations (think tanks, government agencies, NGOs, industry, and academia) are invited to participate in program development and event execution. The views expressed in IMSE symposia are solely those of the participants.

Each occurrence of IMSE has a specific focus. For example, the inaugural IMSE conference in 2018 concentrated on Humanitarian Assistance and Disaster Relief. Due to the COVID pandemic, IMSE 2020, which was to have addressed a "Free and Open Pacific" and collaboration and capacity building with a number of heads of large navies in the region, was cancelled. IMSE 2021 explored Illegal, Unreported, and Unregulated (IUU) fishing - why it is a big problem in the

region and how it can be combatted. IMSE 2022 focused on the Rim of the Pacific (RIMPAC) exercise, emphasizing information sharing and interoperability between navies, information sharing for combating IUU fishing, Indo-Pacific partnerships for maritime domain awareness, and the future that technology promises for effective information sharing.

All presentations for the 2023 IMSE webinar are at [www.imsehawaii.org](http://www.imsehawaii.org).

Peter C. Oleson, a member of the IMSE Executive Committee, drafted these proceedings.