



**Articles from
the “Ocean Newsletter”**

Learning about the Ocean through the Multi-purpose MDA Service "Umi Shiru"

[KEYWORDS] MDA / WebGIS / Marine Cadastre

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On April 17, 2019, Japan opened up for public use its WebGIS service, popularly known as "Umi Shiru," to strengthen its Maritime Domain Awareness (MDA) capabilities. Umi Shiru is a leading edge WebGIS service that compiles maritime data provided by various ocean related organizations; it is operated by the Japan Coast Guard, with overall coordination by the Office of Comprehensive Ocean Policy Promotion within the Cabinet, and is the successor to the Marine Cadastre service. We believe it is an initiative that will continue to contribute to Japan's various ocean measures.

A Multi-Purpose MDA service "Ocean Status Indication System (nicknamed "Umi Shiru")

MDA Situational Indication Linkages ("Umi Shiru") is the government's multipurpose maritime WebGIS (online geospatial information system) service. The Japan Coast Guard operates this service under the overall coordination of the Cabinet Office's National Ocean Policy Secretariat. Umi Shiru is a part of the data platform for the Ministry of Land, Infrastructure, Transport and Tourism's Productivity Revolution Project. It is also positioned as a core information system based on the capability improvements provided by Maritime Domain Awareness, an initiative promoted by the Japanese government as a whole. Umi Shiru is an advanced WebGIS service that aggregates and serves data from marine-related organizations.

Historical Background of Providing Marine Information

The Japan Coast Guard's Hydrographic and Oceanographic Department took over from the pre-war Naval Hydrographic Department to provide charts and other information related to navigation safety. The Japan Oceanographic Data Center (JODC) was established in 1965 to offer a variety of information. In 1995 the center rapidly adopted internet-based information provision services. Efforts to utilize GIS have included the establishment of the WebGIS-based information provision environment in the 2000s. In 2003, CeisNet, a WebGIS service that collects information on environmental conservation in coastal waters for responding to issues such as oil spills, began operating. The aggregation of oceanographic data by maritime agencies has continued on an as-needed basis.

Coordination of measures related to the ocean is based on the UN Convention on the Law of the Sea, which entered into force in 1994 and was ratified by Japan in 1996. When countries around the world began to implement the Convention in the 2000s, there was an expectation that the Japanese government would promote ocean-related policies. This change led to the Basic Act on Ocean Policy being

enacted in 2007. In 2012, the Japan Coast Guard began operating a WebGIS service called Marine Cadastre, based on the act's framework for comprehensive cross-ministry marine information provision services.

Marine Cadastre was an advanced WebGIS service for the time. It allowed users to freely select and display a variety of information overlaid on maps, such as seafloor topography, shipping routes, and ocean currents. The internet changed dramatically in the five years after operations commenced, allowing for larger amounts of real-time information to be handled. In response, a new WebGIS service called Umi Shiru was launched in April 2019. It has been developed to address not only non-real-time information from around Japan, such as with the Marine Cadastre, but real-time information from the entire world. It has 200 available categories, twice the number available on Marine Cadastre.

Outline of Umi Shiru

Umi Shiru is characterized by its ability to provide global information on the world's oceans, alongside real-time information such as weather maps and sea surface temperatures. More than 200 categories of information are

Figure 1: Top page of Umi Shiru <https://www.msil.go.jp/>



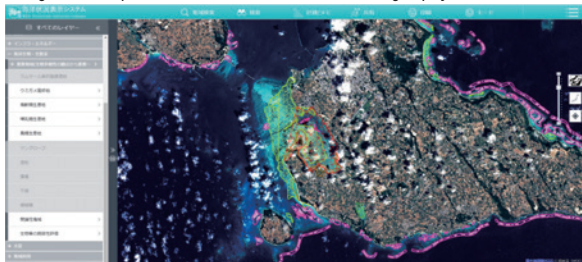
Learning about the Ocean through the Multi-purpose MDA Service "Umi Shiru"

provided through collaboration with the Japan Coast Guard and domestic/international government agencies. Data includes satellite images of clouds, weather maps, precipitation information, sea surface temperatures, currents, wave heights, earthquake-related information, maps from the Geospatial Information Authority, and submarine geological maps.

The top page of "Umi Shiru" (Figure 1) has links to the Japanese and English versions of the site and links to thematic maps. Since there are about 200 items of information on the site, thematic maps are available at just a click. These maps display information related to the theme, such as oil removal, offshore wind power generation, and marine leisure. Figure 2 shows an example of information about the oceanic environment. Environmental data such as Ramsar Convention registered wetlands, biological habitat information, seaweed beds, and tidal flats are overlaid on satellite images, allowing users to understand marine environments at a glance.

Umi Shiru allows users to freely select information and create maps by combining the information they require, such as overlaying information in an easy-to-view manner using transparency functions. Information related to the sea is obtained and used in various marine-related fields, such as maritime safety, marine development, marine environmental conservation, fisheries, etc. Registering information that can be shared with other fields in Umi Shiru allows for data to be effectively utilized.

■ Figure 2: Example of marine environment information being displayed



Source: Created from Umi Shiru overlays showing Ramsar Convention registered wetlands, mangroves, wetlands, seaweed beds, tidal flats, and coral reefs.

Information provided by Geospatial Information Authority of Japan, Ministry of the Environment, Japan Coast Guard

Direction of Initiatives Related to Umi Shiru

Umi Shiru is an initiative to promote the reciprocal distribution of ocean data acquired by various ocean-related fields. Registering ocean data on Umi Shiru allows for other fields to learn of its existence. The platform will enable those working in ocean-related fields to contribute to ocean-related policies by promoting solutions to varying problems through coordinating ocean data. New uses of data might also be found, distinct from the original objec-

tive, enabling further developments in different fields.

Challenges for Umi Shiru, which began operating in April 2019, include content enhancement, improving functions in line with user needs, and expanding the project's scope through collaborating with local governments and other organizations.

Umi Shiru was launched through collaboration amongst national government agencies, and while information on offshore areas is relatively complete, information on coastal areas is not always sufficient. Many users require detailed information on these areas but acquiring this data will require cooperation from relevant local governments and other organizations.

The use of Umi Shiru as a platform for collecting and sharing detailed information on marine phenomena in coastal areas will enable information to be enhanced in line with users' needs. Therefore, it is essential to deepen cooperation with local governments and other organizations by providing individual briefing sessions and forums, etc., accurately incorporating their requirements, and enabling the appropriate enhancement of information and functions. Efforts will continue to be made to integrate a variety of ocean data, contributing to various ocean-related policies in Japan. ■

Initiatives and Prospects for Barrier-Free Maritime Transport Facilities

[KEYWORDS] passenger ships / passenger terminals / barrier-free

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The movement for barrier-free passenger ships, the mainstay of maritime transport, is supported by a broad spectrum of passengers, from residents on remote islands who use ferries as their primary means of transportation to hospitals, schools and shopping, to those who prefer ships for long distance travel, to those who enjoy sightseeing and restaurant cruises. However, compared to conditions in other means of transport, progress has lagged. In response, and for the purpose of facilitating easier transportation for elderly and handicapped passengers, we are providing financial support to barrier free projects undertaken by the maritime transport industry as part of their passenger vessel improvement plans.

The Promotion of Barrier-Free Facilities for Maritime Transportation

The Foundation for Promoting Personal Mobility and Ecological Transportation (Eco-Mo Foundation) was established in 1994 with support from the Nippon Foundation, transportation companies, and other organizations. We provide grants, publicity, and research to develop barrier-free facilities and equipment, such as elevators and escalators, at railroad stations, airports, bus terminals, passenger ships, and passenger ship terminals. These improvements help the elderly and those with disabilities to use public transportation safely and comfortably.

While activities in equipping railway stations with barrier-free facilities have concluded, since 2002 our focus has been on the Promotion of Barrier-Free Facilities for Maritime Transportation project subsidized by the Nippon Foundation, which aims to develop barrier-free facilities and equipment for passenger ships and passenger ship terminals (hereinafter “passenger ship facilities”).

The program subsidizes the construction of barrier-free facilities and installation of equipment on passenger ships and other vessels used for general passenger liner services and tramp services under the Marine Transportation Act, thereby promoting barrier-free access. Priority is given to 1. Passenger ships (especially small ships) operating on remote island routes, 2. Passenger ships that have been damaged by natural disasters, and 3. Passenger ships meeting recommended standards such as barrier-free guidelines.

Subsidies also cover the installation of facilities and equipment that are safer and easier for the elderly and disabled to use, such as elevators, barrier-free lavatories (that are wheelchair accessible), barrier-free seating, and devices for showing route information¹⁾.

Legal Standing Relating to Barrier-Free Passenger Ships, etc.

In the year 2000, the Act on Promotion of Smooth Trans-

portation, etc. of Elderly Persons, Disabled Persons, etc. (hereinafter the “Barrier-Free Transportation Act”) made it compulsory to provide barrier-free transportation on facilities such as passenger ships. Later, in 2006, this Act was integrated with the Act on Buildings Accessible and Usable by the Elderly and Physically Handicapped (hereinafter the “Heart Building Law”) and expanded as the Act on Promotion of Smooth Transportation, etc. of Elderly Persons, Disabled Persons, etc. (hereinafter the “Barrier-Free Act”). These laws were partially amended in May 2018 and are still in effect.

Based on the Barrier-Free Act, “Ministerial ordinances to determine criteria on the structure and equipment of passenger facilities and vehicles necessary for smooth accessibility” (hereinafter “accessibility standards”) have been enacted, and development standards have been prescribed. Public transportation agencies have published guidelines for barrier-free transportation, enabling public transportation operators to meet the diverse needs of the elderly, disabled, and other users. These guidelines provide specific details on the development of barrier-free transportation. Details for passenger ships are provided in the “Barrier-Free Guidelines for Passenger Ships” and those for passenger terminals in the “Barrier-Free Development Guidelines (Passenger

Table 1: Trends in the Barrier-Free Status of Passenger Ships
(Source: Prepared by the author from the website of the Ministry of Land, Infrastructure, Transport and Tourism)



Initiatives and Prospects for Barrier-Free Maritime Transport Facilities

Facilities)".

Barrier-free access to passenger ships has been gradually increasing, but improvements are slow compared to other public transportation systems. This is due to unfavorable business conditions resulting from decreased passenger traffic caused by declining populations. As of the end of March 2019, only 46.2% of ships (308) were barrier-free. Since almost no government support is provided for barrier-free access on passenger ships, passenger ship operators must bear all the costs.

The Situation Amongst Remote Islands

According to the Ministry of Land, Infrastructure, Transport and Tourism, there are 6,847 remote islands in Japan, of which four hundred and sixteen are inhabited. These islands play an important role in protecting and promoting the interests of Japan and its citizens. They help preserve Japan's territory and exclusive economic zones, enable marine resources to be utilized, preserve diverse cultures, help protect the natural environment, provide places and opportunities for contact with nature, and ensure a stable supply of food.

In recent years, the importance of remote border islands has been reaffirmed with the Act on Preservation of Areas of Remote, Inhabited Islands Establishing Territorial Seas and Maintenance of Local Societies on Areas of Specified Remote, Inhabited Islands Establishing Territorial Seas enacted in April 2017. The act designates "specified inhabited remote border island zones" amongst inhabited



The hull of "Mermaid II," (Ajishima Line Co., Ltd.) a vessel subsidized in fiscal year 2018. The photo on the right shows the ship's barrier-free lavatory (the entrance and exit doors are automatic for easy access by wheelchair users, and the lavatory has space for wheelchairs to turn).

remote border island areas. These are zones for which it is deemed particularly necessary to maintain local communities by improving their environments to enable continuous residence. Measures such as lowering fares for regular service routes for domestic, general passengers are being implemented in response. According to the White Paper on Aging Society, the percentage of elderly in Japan is 28.1% (as of October 2018), but this is over 40% in the remote islands, reaching as high as 80% on some of them.

Past Achievements Relating to Barrier-Free Construction

To date, subsidies for the construction of barrier-free facilities and equipment have been provided to a total of 214 passenger ships and 107 passenger ship terminals by the Promotion of Barrier-Free Facilities for Maritime Transportation project. This means that support has been provided to about 70% of the current barrier-free vessels. Some passenger ship operators were initially reluctant to make their ships barrier-free because of physical restraints and the number of people with disabilities using their ships. However, changes to the social environment, such as the declining birthrate and aging population, have led to these facilities being actively adopted in recent years.

The aging of the population on these remote islands will continue to make business even more difficult for passenger ship operators as it would be problematic for new barrier-free initiatives to proceed without public support. Therefore, the continuation and implementation of this project will contribute significantly to enabling elderly and disabled people living in these remote islands to access transportation. By focusing on not only general passenger liner services but also tramp services, we hope to facilitate the smooth use of passenger ships by all people whatever their mobility difficulties. ■

1) Development of Barrier-Free Facilities for Maritime Transportation <http://www.ecomo.or.jp/barrierfree/barifuri-ship/index.html>

Promoting Sustainable Ocean Economies and International Partnership —An International Webinar Video Message—

[KEYWORDS] High Level Panel / offshore wind power generation / marine plastic litter

SUGA Yoshihide

Prime Minister of Japan.

(Ocean Newsletter No. 490, 5 January 2021)

The “High Level Panel for a Sustainable Ocean Economy,” comprised of world leaders from 14 countries, including Japan, and 15 Special Envoys of the Secretary-General of the United Nations, was established in 2018 to stimulate the economy through the conservation and sustainable use of the ocean. The “Ocean Panel’s Policy Recommendations: Promoting Sustainable Ocean Economies and International Partnership” international webinar was hosted to widely publicize the summit report released as a product of the Panel’s work. This article is the video message delivered by Prime Minister Suga Yoshihide for the international webinar.

We, the leaders of the 14-member ocean states of the High-Level Panel for a Sustainable Ocean Economy, have released a leaders’ document entitled “Transformations for a Sustainable Ocean Economy.” It is the first attempt to formulate a leaders’ statement by the High-Level Panel that comprehensively addresses the issues of conservation and sustainable use of the ocean.

We would like to express our profound respect to Prime Minister Erna Solberg of Norway and President Tommy Remengesau Jr. of the Republic of Palau for their leadership. Japan has now adopted its 4th Basic Plan on Ocean Policy, which is aligned with the leaders’ statement, and is making efforts towards building a sustainable ocean economy.

Under this plan, Japan is committed to sustainably managing the ocean areas under its jurisdiction in order to ensure that future generations can benefit from flourishing ocean resources. We plan to further advance these efforts. To realize a sustainable ocean economy, we must take ambitious actions toward mitigating climate change, such as through leveraging ocean-based renewable energy. My administration has declared that by 2050 Japan will aim to reduce greenhouse gas emissions to net-zero and realize a carbon-neutral society. By accelerating a virtuous cycle of the economy and the environment through innovation, and capitalizing upon the potential of the ocean, such as through offshore wind power generation, Japan will lead international efforts to achieve the decarbonized world aimed at by the Paris Agreement.

In our view, collaborating with the international community on the issue of marine plastic litter is also indispensable toward facilitating ocean conservation. Japan launched the “Osaka Blue Ocean Vision” at the G20 Osaka Summit last year. The Vision aims to reduce additional pollution by marine plastic litter to zero by 2050. To realize this Vision, Japan will actively tackle this problem with relevant partner organizations, such as the International Environmental Technology Centre of the United Nations Environment

Programme (UNEP-IETC) headquartered in Osaka and facilitate technical assistance to developing countries.

It is my hope that this leaders’ document will serve as a compass toward building a sustainable ocean economy and lead to concrete actions in passing on our flourishing ocean resources to future generations. ■

*Explanatory Note:

The High-Level Panel for a Sustainable Ocean Economy (Figure 1) was established in 2018 under the leadership of the Norwegian government to tackle a variety of ocean issues verging on crisis, such as depleting fishery resources, rising ocean temperatures, and increasing marine plastic litter, as well as to stimulate the economy through the conservation and sustainable use of the ocean. The Panel is comprised of world leaders from 14 countries and United Nations Secretary-General’s Special Envoy for the Ocean, including: Prime Minister Suga Yoshihide who replaces former Prime Minister Abe Shinzo. Prime Minister Suga Yoshihide joined the High-Level Panel as a member in the autumn of 2020. The outcome of the 3 years of activities was synthesized as a policy recommendation document and released as a leaders’ statement on December 2, 2020 (<https://www.oceanpanel.org/ocean-action/transformations.html>).

In order to widely disseminate the leaders’ statement, on December 3, 2020, the international webinar “Ocean Panel’s Policy Recommendations: Promoting Sustainable Ocean Economies and International Partnership” was co-organized by the Ministry of Foreign Affairs of Japan and The Ocean Policy Research Institute, The Sasakawa Peace Foundation in cooperation with the Embassy of the Republic of Palau and the Embassy of Norway in Japan (for a summary of the event, see <https://www.spf.org/opri-intl/blogs/event-report/20201215.html>).

Promoting Sustainable Ocean Economies and International Partnership —An International Webinar Video Message—



Figure 1: Members of the High-Level Panel for a Sustainable Ocean Economy
(Excerpt from the document of the Secretariat for the High-Level Panel)

● The above text is based on the video message delivered by Prime Minister Suga Yoshihide for the international webinar, with editorial adjustments by OPRI-SPF.

The Case of the Diamond Princess Cruise Ship and the Role of Japan

[KEYWORDS] COVID-19 / International health regulations / port state

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(Ocean Newsletter No. 490, 5 January 2021)

The February 2020 outbreaks of COVID-19 on the Diamond Princess cruise ship revealed the conflict between the national legal interests of coastal states in preventing the spread of infections and international legal interests in maintaining the stability of maritime traffic. As there are many issues that cannot be resolved alone by the port state where a ship has called, and as international cooperation between a vessel's flag state and its operators' country is crucial, new international rules need to be established.

Flaw Revealed in Laws

The World Health Organization (WHO) declared COVID-19 to be a "Public Health Emergency of International Concern" (PHEIC) on January 30, 2020. Shortly after, on February 3, the Ministry of Health, Labor and Welfare ordered the Yokohama Quarantine Station to quarantine the Diamond Princess, a large cruise ship, after discovering that a passenger who disembarked in Hong Kong was infected with COVID-19. PCR tests for COVID-19 were conducted on all passengers and crew. Positive test results were then discovered one after another, bringing the total cases to 712 (13 of whom died).

The Diamond Princess's flag state was the United Kingdom, but its operating company was a U.S. corporation, and its country of operation was the United States. The ship called at the port of Yokohama, making Japan a port state. The incident revealed a lack of clarity under international law regarding which country, the flag state, the operating country, or the port state, has primary responsibility for preventing the spread of infectious diseases. It also raised questions regarding what level of coercive measures a port state can take. Specifically, whether a port state country can compel medicine to be transported to patients without the consent of the vessel's captain.

Conflicts Between the Interests of Coastal States and the Interests of International Law

The spread of COVID-19 aboard the Diamond Princess highlights the conflict between coastal states' legal interests in preventing the spread of infectious diseases and international legal interests in maintaining the stability of maritime traffic. To begin with, must coastal states allow ships to dock with large numbers of patients with contagious diseases? After all, these states also have a legal interest in preventing the entry of infectious diseases.

On February 7, 2020, Japan refused to allow the Westerdam (flag state: Netherlands), a large cruise ship carrying passengers infected with COVID-19, to make a scheduled call at Naha port. Coastal states have sovereignty over their ports, and foreign vessels do not have freedom of entry.

Thus, coastal states have no legal obligation to allow foreign ships to enter their ports. The exceptions are emergencies and cases of force majeure, such as when a vessel is in distress or during rough weather.

Suppose a coastal state has concluded a commerce and navigation treaty with another state and is obligated to open its ports to the state. In that case, it is obligated to allow foreign vessels to enter its ports. The question then becomes, what about ships with infectious disease patients on board?

In the 14th century, the merchant fleets and coastal city-states involved in maritime transportation around the Mediterranean and Adriatic seas learned first-hand that infectious pathogens can accompany the movement of ships, people, and goods. Quarantine measures were created to prevent the spread of the feared Black Death plague.

After the plague epidemic of 1347, Venice adopted the practice of quarantining potentially contaminated ships, crews, and cargo in its ports, only allowing them to enter if there was no outbreak of plague during that time. In 1377, the quarantine period was 30 days, but this was extended to 40 days in 1448. The Italian word for "40" became the origin of the word quarantine.

In the 21st century, the International Health Regulations adopted by the WHO govern this issue. However, the COVID-19 pandemic saw no end to the number of countries preventing crew members from boarding or disembarking for replacement and refusing entry to ports. As the UN Secretary-General stated at a press conference on June 17, 2020, this meant several hundred thousand of the world's two million seafarers were stranded at sea for months with nowhere to land, a serious situation that impacted the stability of ocean traffic and the human rights of seafarers.

International Health Regulations and Japan's Quarantine Act and Infectious Disease Law

PHEICs are certified under the International Health Regulations, with COVID-19 being the sixth PHEIC declared. The International Health Regulations require Member States to notify WHO within 24 hours of becoming aware of any event, regardless of cause, that poses an international

The Case of the Diamond Princess Cruise Ship and the Role of Japan

public health threat (Article 6).

In response to a notification, the WHO will recommend that Member States can restrict the entry and exit of persons infected or suspected of being infected with the disease and deny entry under certain conditions. As a result, although quarantine can be implemented as "Actions at designated airports, seaports, and land border crossing points," as in Appendix 1-1 (b) of these regulations, Article 2 of the International Health Regulations states that the purpose of quarantine is to avoid impediments to international traffic and to prevent the global spread of diseases.

In Japan, the Quarantine Act and the Infectious Disease Law provide a domestic implementation of the International Health Regulations. Japan established the Quarantine Act to prevent infectious diseases from entering the country. Its purpose is to "prevent pathogens of infectious diseases that are not endemic in Japan from entering the country via vessels or aircrafts, as well as to take other necessary measures concerning vessels or aircrafts to prevent infectious diseases" (Article 1). It specifies 11 diseases as either Class I (e.g., Ebola virus infection and plague), Class II (H1N1 influenza and avian influenza), or Class IV (dengue fever and malaria).

Article 34 of the Quarantine Act stipulates that if there is an outbreak of an infectious disease other than a Quarantinable Infectious Disease overseas, and there is a risk of pathogens thereof entering Japan or significant harm to the lives and health of the people unless it is quarantined, all or some of the provisions may apply *mutatis mutandis* to the infectious disease by specifying a type of infectious disease by Cabinet Order, for a period not exceeding one year.

On January 28, 2020, Japan established the term "novel coronavirus infection," classifying it as a Class II infectious disease based on the "Cabinet Order to Designate the Novel Coronavirus Infection as an Infectious Disease." Quarantine is carried out at 89 quarantine ports throughout Japan, as listed in Appendix 1 of the Quarantine Act Enforcement Order. All vessels from foreign countries entering Japanese ports are subject to quarantine, and entry, landing, and unloading of cargo are only allowed after quarantine (Article 4, Paragraph 1).

It should be noted that Article 25 of the International Health Regulations stipulates that contracting states shall not take public health measures against ships passing through their jurisdictional waters without calling at a port.

Japan's Role

The Diamond Princess case revealed a deficiency in the law governing the relationship between the rights and obligations of the flag state, the operating state, and the port



The Diamond Princess, a major cruise ship (Vladivostok port, 2019)

state to prevent the spread of infectious diseases. Many of the problems faced by Japan during this incident cannot be solved by port states alone. International cooperation with related countries, such as flag states and operating countries, is therefore essential. However, new international rules are required for this purpose.

In forming these new rules, Japan, which was a port state in this incident, seems to be in a position to suggest what new rules are needed, especially in the area of the Law of the Sea. This is because Japan acted not only to protect its legal interests as a coastal state in preventing the entry of infectious diseases; as a maritime nation, it also has a legal interest in maintaining ocean traffic stability, in other words, ensuring freedom of navigation. Japan is in the best position to create new, balanced rules for order on the seas. I hope that it will take advantage of its strengths to play a leading role in this process. ■