

A Centralized Document Processing and Support System (CeDoPSS) for Philippine Registered Vessels

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1. BACKGROUND

The Philippines counts on the maritime industry as vital to inclusive growth and socioeconomic progress [1]. Today, shipping remains the major infrastructure by which the Philippine islands are linked. It also connects the country to global commerce and trade. This signifies how important the maritime industry is here in the Philippines but is not limited to developing every aspect of it to be more productive and beneficial to the economy and the people who depend significantly on it. As technology advances, everything also adopts this progress; this includes the transformation of the manual and the conventional way of processing documents in the different offices, which could be connected to the maritime industry.

Initially, agencies and offices in which transactions are related to maritime industries such as ship operators and owners, ship builders, and port operations for passenger and cargo embarkation managed their documents with the conventional way of using paper and file storage. As these agencies and offices grow, and with the volume of documents and information, this system usually quickly reaches its limits. In addition, it is not easy to comply with the legal requirements for proper archiving. Documents must permanently be archived in the original format. It is not sufficient to print and file an electronic document. With the modern advancement of the platforms and tools present now, specifically with the use of the internet and web, most of the transactions are now made digitally. This transition has allowed us to make things easier to process and do transactions without being physically present on the site or in the office. It saves time, saving trees due to paperless transactions, minimizing the effort for physical appointments, and lessening the carbon footprint.

One of the most effective ways to solve the problem of manually filing and managing documents is to transform the conventional way of archiving into digital and online. This would ease the time consumed by filing personally and going back and forth and minimize the errors to be corrected on the documents. Also it will guide passengers and shippers with the information they need for the vessels they intend to use in transportation. Specifically, ship-related document processing will be filed efficiently online, like registration of ships, updating of ship plans, and approval of the ship plan

drawings, shipyard-related documents, dockyard schedules, and annual and intermediate surveys. The comments regarding the errors that need to be corrected online give convenience to the ship owners. This convenience will also allow the ship owners to correct the necessary documents as soon as comments are shown through online filing and registration.

Passengers will have real-time information about the vessels related to their accommodation types, time of departure, arrival, and first/second/third port of destination for connecting voyage routes, and online booking with their preferred accommodation. In the port areas, passengers and cargo are monitored upon entry and actual embarkation on the vessel. Although passenger manifests are already practiced by ship operators, however, it is still manual. Few have started computer-based passenger and cargo manifests; however, records are not centralized to the port authority and coast guard, which is in charge and responsible for vessel inspection prior to departure.

With a centralized data, it will link the three main agency and government offices, namely: MARINA, Port Authority and Coast Guard (PCG), the real-time update of newly registered vessel, expired/renewed certificate, passenger and/ cargo capacity, vessel's age, and other necessary information to be used pertaining to prevention of accidents on the sea. This digitalization would pave the way for better document archiving in the maritime industry and safety in maritime transportation.

Generally, as the title of this research states, document processing involves converting manual and analog forms of information into a digitized format to integrate them into daily business processes. Every company considers manual data to electronic document conversion a core step in their digital transformation journey. The digitalized document-processing system can help organizations digitally replicate a document's original structure, images, and layout without the hassle of compiling and storing the volume of papers and files [2].

In line with this, to further enhance the delivery of frontline services and promote the ease of doing business, the Maritime Industry Authority (MARINA) has commenced the preparation of a 4-year roadmap for its information technology. This aims to modernize its information technology equipment and facilities, integrate existing and develop new information systems, and automate its processes nationwide.[2] According to MARINA

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Administrator VADM Robert A. Empedrad AFP (Ret), the first step towards implementing digital connectivity in all MARINA offices requires the modernization of its essential office equipment, such as computers, laptops, and printers. It also demands the need to increase internet connection speed for inter and intra-office interfaces to ensure seamless, safe, and secure digital transactions of stakeholders with the Agency [2].

As of 2021, in the area of digital transaction, systems development, and deployment, the MARINA will roll out one of the initiatives which are related to shipping document processing which is "Phase I of the Integrated Domestic Shipping Information System (IDSIS-1)", an online facility that allows the filing, evaluation, payment, and processing of domestic shipping related applications such as the following: accreditation of shipowners/operators; vessel name clearance; ship acquisition; vessel plans approval; ship construction certificate; tonnage measurement certificate; issuance of the certificate of ownership/certificate of Philippine Registry; and issuance of coastwise license; bay and river license; and pleasure yacht license [2]. The mentioned initiative is part of the 4-year roadmap of MARINA for its information technology.

Currently, the MARINA is undertaking the development of the system related to shipping document processing; "Phase II of the Integrated Domestic Shipping Information System (IDSIS2)", which is the continuation of IDSIS-1 that allows the online filing, evaluation, and payment, remote encoding of ship inspection data and subsequent issuance of the different ship safety inspection certificates such as the following: Passenger Ship Safety Certificate (PSSC), Cargo Ship Safety Certificate (CSSC), Cargo Ship Safety Construction Certificate (CSSCC), Cargo Ship Safety Equipment Certificate (CSSEC), Fishing Vessel Ship Safety Certificate (FVSC), Exemption Certificate (EC), Certificate of Fitness for the Carriage of Liquefied Gases in Bulk (CFCLG), and High-Speed Craft Safety Certificate (HSCSC).

As part of its continuing effort to promote the competitiveness of the country's domestic shipping industry and to support the government's campaign to ease doing business across all sectors of the Philippine society, the Maritime Industry Authority (MARINA) has already started conducting and implementing the Phase I of the Integrated Domestic Shipping Information System (IDSIS), a web-based application that automates the filing and processing of relevant domestic shipping related applications. This initial run for the system started last March 15, 2021. This notice was given to the applicants under the jurisdiction of the Domestic Shipping Service (DSS), Shipyard Regulations Service (SRS), MARINA National Capital Region Office (MRO-NCR), MARINA Regional Office No. 1 & 2 (MRO 1 & 2), and MARINA Regional Office No. 4 (MRO 4) Regional Offices, to participate in the pilot testing by filing their applications through their website for the following transactions; (1) Accreditation of Maritime Enterprises/Entities, (2) Vessel Name Clearance, (3) Authority to Acquire Ship, (4) Vessel Plans Approval, (5) Issuance of Certificate of Ownership/ Certificate of Philippine Registry/License, (6) Issuance of Tonnage Measurement Certificate, (7) Registration of Recreational Boats. [3].

The IDSIS system implemented by MARINA does not include processing documents related to the dockyard schedules of shipyards and recording and updating surveys of ships registered in the Philippines. About MARINA Circular No. 2018-02, with a subject description of Revised Rules and Regulations

Relating to Registration and Licensing of Shipbuilding and Ship Repair Facilities and for Other Purposes, each shipyard is classified according to its facility. This includes the type of dock, the dimensions of the dock, and the different areas present within the area. This classification would be presented in the proposed Centralized Document Processing and Support System for the ship owners to determine the capacity of each shipyard that could potentially be where the owners will have their ships repaired or done for maintenance. Also, under MARINA Circular 2018-02, at Section VIII, Conditions and Obligations Attendant of the Licenses issued are stated specifically No. 12, which mentions that all licensed shipyards shall submit an electronic copy of the following records within thirty (30) days after the end of each quarter; (12.1) Drydocking Schedule booked for the next three months; (12.2) available Capacity/Utilization; Copies of Drydocking reports issued for the previous quarter; (12.3) Copies of Certificates issued for Non-availability of Dry-docking space for the previous quarter. [4] This information is yet to be digitalized and accessible to ship owners and shipping line companies. Tracking and updating the reports and documents related to the drydocking reports and schedules of the shipyard will be just a click away. It would be time-efficient, less hassle to file, and safe to keep the files. For example, if the files of a particular ship have been filed and kept for a long time, it would be easier to track when recorded online. Also, the updates done on these files online would be real-time. This research will also cover the recording and updating of the periodic drydocking and survey documents of ships registered in the Philippines through the online platform (CeDoPss).

As mentioned in the MARINA Memorandum Circular No. 152, with the subject description of the Amendments to Chapter I, Regulations I/6 of the Philippines Merchant Marine Rules and Regulations (PMMRR) 1997 on Inspection, Drydocking, and Statutory Certificates, its main objective is to ensure maritime safety and to strengthen the implementation of the PMMRR 1997 in respect to inspection and drydocking of ships by providing supplementary regulations relative to inspection and drydocking.[4] It is a must for ship owners and shipping companies to update docking reports and surveys of their ships. This is part of MARINA's requirements. It is to ensure that the ships that would traverse Philippines waters are safe and have passed the surveys done by the Authority. These documents, related to ships' surveys, drydocking schedules, vessel departure, passenger and cargo manifests through a centralized and digitized system, would benefit ship owners, shipping operators, passengers and facilitating agencies as well.

2. IMPORTANCE OF THE STUDY

As a continuation of the aim of MARINA to digitalize the processing of documents filed in their agency, the proponents propose a centralized document processing system for shipyard document records, specifically by establishing online vessel plans review committees, dockyard schedules for each shipyard, and recording and updating of the annual and intermediate survey documents of ships registered in the Philippines. This system will help the ship owners and operators to check online comments on the vessel plans submitted and required for submission, the availability of vacant shipyards in each region, and the province that would cater to the needs of their ships to be repaired or for maintenance. In the system, the ship owners will be able to see



what specific shipyards have vacancies in their dockyard, the type of ship they would be able to cater to, the services that they are offering, the particulars of the ship that would fit in the vacant dock, slipway, or graveyard. Suppose there is no available dockyard found on the schedule. In that case, the ship owners can check when they will be available and when the existing ship using the facility will end its repairs at the chosen dockyard. In connection with this matter, recording the ship's annual and intermediate survey will also benefit the ship owners.

Each ship registered in the Philippines is subject to maintenance for a given period. With this, the ship owners can ensure their ships are serviced up to date, and the ship's maintenance is recorded systematically online. Other agencies concerned with vessel operations and routes are automatically updated by this centralized and digitized system. It is easy to confirm the actual passengers onboard the vessel during incidents at sea.

3. SUMMARY

This research project will minimize the paper works upon processing of documents, vessel owners and operators aid to keep track of their documents in real-time through the online database, specifically on the shipyard documents needed for the ships, vessel passenger information, and tracking for embarkation. This will also establish the security of the ship owners to do their responsibility in servicing their ships in the given period, whether annual or intermediate. This research intends to help realize the 4-year roadmap of MARINA about digitalizing shipyard-related documents.

REFERENCES

- [1] MANPOWER REPORT The global supply and demand for seafarers in 2015. (n.d.).<https://www.ics-shipping.org/wp-content/uploads/2020/08/manpower-report-2015-executive-summary.pdf>
- [2] "Marina prepares 4-year it roadmap, pursues modernization of equipment, systems integration, automation of services nationwide," MARITIME INDUSTRY AUTHORITY, 18-Jan-2021. [Online]. Available: <https://marina.gov.ph/2021/01/18/marina-prepares-4-year-it-roadmap-pursuesmodernization-of-equipment-systems-integration-automation-of-services-nationwide/>.
- [3] Gov.ph. [Online]. Available: <https://marina.gov.ph/wpcontent/uploads/2021/03/MARINA-ADVISORY-2021-15.pdf>.
- [4] "Subject : Revised rules and regulations relating to registration and licensing of shipbuilding and ship repair facilities and for other purposes," Gov.ph. [Online]. Available: <https://marina.gov.ph/wp-content/uploads/2018/06/MC-2018-02.pdf>.
- [5] Web Publisher, "MARINA pilots auto processing of domestic shipping applications," PortCalls Asia, 16-Mar-2021. [Online]. Available: <https://www.portcalls.com/marina-pilots-auto-processing-of-domestic-shippingapplications/>.
- [6] Wmu.se. [Online]. Available: https://commons.wmu.se/cgi/viewcontent.cgi?article=1446&context=all_dissertations. [Accessed: 14-Oct-2022].
- [7] Oceans HQ Ltd, "Vessel HQ: Registration software for Marine Administrations and flag states," Oceans HQ. [Online]. Available: <https://www.oceanshq.com/products/vessel-registration>. [Accessed: 14-Oct-2022].
- [8] P. Suvadashini and P. Dandapat, "Digitalizing the maritime supply chain: The case of Rotterdam's port call operations," J. Inf. Technol. Teach. Cases, p. 204388692211267, 2022.
- [9] Y. Boullauazan, C. Sys, and T. Vanelslander, "Developing and demonstrating a maturity model for smart ports," Marit. Policy Manage., pp. 1–19, 2022.
- [10] M. R. C. Maltezo, R. B. R. Bituonan, M. L. Narisma and I. C. Valenzuela, "Integrated Port eManagement and Monitoring System Using Radio Frequency Identification," 2018 IEEE 10th International Conference on Humanoid, Nanotechnology, Information Technology, Communication and Control, Environment and Management (HNICEM), 2018, pp. 1-5, doi: 10.1109/HNICEM.2018.8666360.

