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APPLICATION OF SINGLE-WINDOW CONCEPT

Implementation of the maritime single window (MSW) system under the Single Window for Facilitation of Trade (SWiFT) Project in Angola – a Singapore-IMO project

Submitted by Angola and Singapore

	SUMMARY
Executive summary:	This document provides information on the implementation of the MSW system under the SWiFT Project in the Port of Lobito, Angola. The document further describes the software developed in the project.
Strategic direction, if applicable:	5
Output:	5.1
Action to be taken:	Paragraph 24
Related documents:	FAL 47/22; FAL 46/24 and FAL 43/6/1

Introduction

1   Facilitating the establishment of electronic systems for the electronic exchange of information is vital to the optimization of port calls for shipping and for the facilitation of maritime trade. Avoiding duplication and enabling parallel reporting through a robust maritime single window (MSW) system are important elements that reduce the administrative burden for ship masters as well as maritime and port administrations.

2   Following the adoption of resolution FAL.12(40) of new compulsory requirements on Electronic Data Interchange, FAL 47 adopted amendments to the FAL Convention through resolution FAL.14(46), making compulsory the use of single window systems in ports from 1 January 2024.

Overview of the SWiFT Project

3   In 2021, Singapore, together with IMO, initiated the SWiFT Project. The Project seeks to assist fellow IMO Member States to implement MSW systems in their ports. The Maritime and Port Authority of Singapore (MPA) was keen to leverage its experience from building and

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operating Singapore's national MSW for fellow IMO Member States intending to implement a MSW system. The pilot phase of SWiFT was scoped to support the establishment of a digitalized system for electronic exchange of information for clearance of ships entering or leaving a medium-sized port. The pilot phase was supported by in-kind contributions under the Singapore-IMO Third Country Training Programme (TCTP) and the IMO Integrated Technical Cooperation Programme (ITCP).

4   The SWiFT project would lay the foundation for scaling up the adoption of MSW, as other IMO Member States embark on the MSW journeys.

5   On 15 March 2021, IMO issued a call for expressions of interest from countries with a medium-sized port to take part in the SWiFT Project to establish an efficient digitalized system for electronic exchange of information in ports to fulfil pre-arrival, in-port and pre-departure declarations that are compliant with data standards stated in the *IMO Compendium on Facilitation and Electronic business* (IMO Compendium) (Circular Letter No.4391). Following the evaluation of applications, IMO and Singapore selected the Port of Lobito (Angola) to participate in the pilot project in October 2021. The implementation of specific activities commenced in November 2021.

6   In January 2023, at the request of the Angolan Agência Marítima Nacional (AMN), IMO conducted a mission to Angola, as part of IMO's technical assistance to support the SWiFT Project. The mission included meetings with the Port of Lobito, Port of Luanda, and other relevant stakeholders, such as the National Trade Facilitation Committee and Angolan Ministries of Foreign Affairs, Transport, Industry and Commerce. Supported by IMO's appointed consultant in Angola, the mission enabled IMO to better understand the work situation on the ground in Angola.

Development of the SWiFT Project for the Port of Lobito

7   Singapore and Angola have been the main stakeholders for the SWiFT Project, where Singapore provided in-kind support to Angola – the beneficiary country. IMO assumed a coordination role between the two countries by providing assistance during the project timeline, which helped to ease the administrative workload of both stakeholders.

8   The project was executed in three phases – project study, development of the system, and user training and system handover. Subsequently, during the development phase, the MSW platform was developed, in compliance with the IMO Convention and the IMO Compendium on Facilitation and Electronic Business.

Phase 1 – Project Study

9   In the early stages of the project, Singapore and Angola dedicated much time and resources on the project study which consisted of determining the existing processes of the Port of Lobito and gathering of their new requirements to reduce occurrence of future requirement changes, which would be more difficult to handle. MPA reached out to the various stakeholders in the Port of Lobito to understand existing workflows and the operating environment, in order to ensure that users could transit to the new system smoothly without disruptive changes to their processes. It was necessary to put together a set of user requirements and to identify the stakeholders involved in the workflows that would be built into the system. These were then translated to functional requirements of the system after comparison and integration with the standards laid out in the IMO Compendium.

10   From the study, it was observed that there were differences between the processes in the Port of Lobito and a generic port call workflow. The differences were reconciled by referencing to the reporting requirements in the IMO Convention and discussions with the Port of Lobito. The port call flow established and built into the system is as illustrated below.
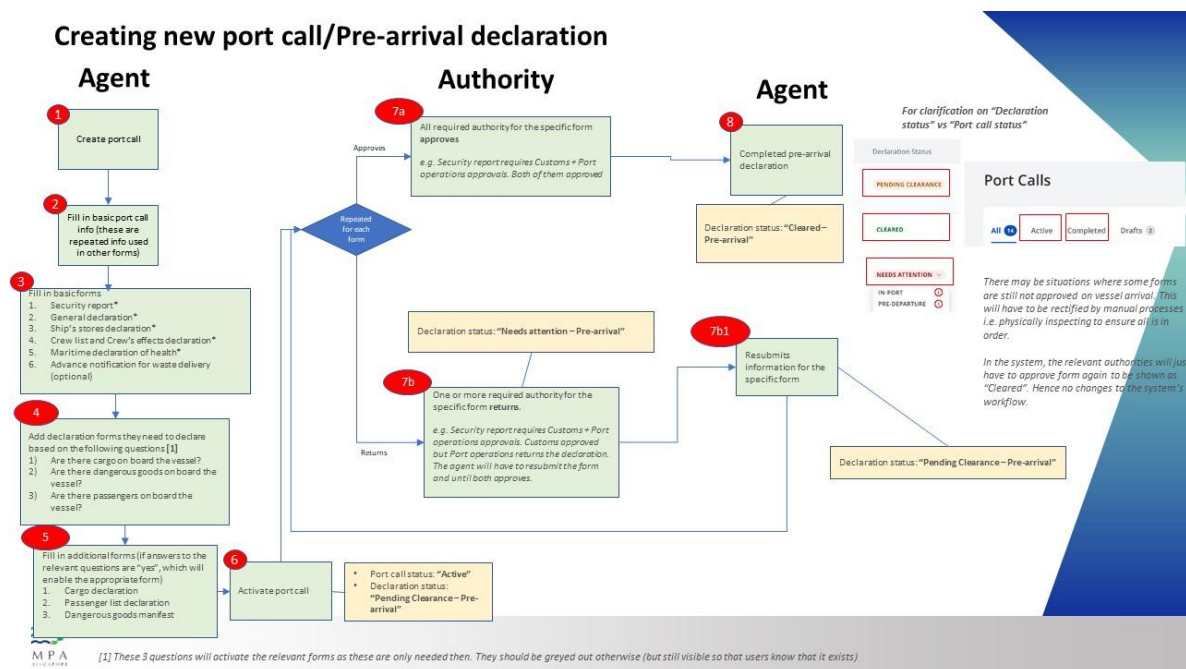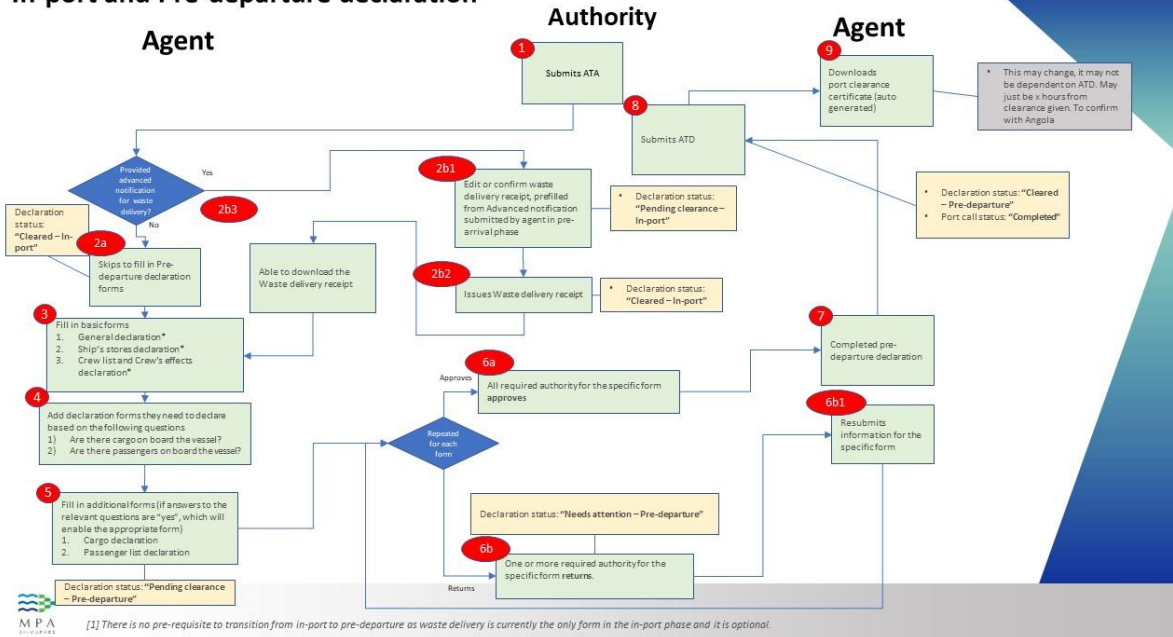
Figure 1 Port Call Flow - Pre-arrival

Figure 2 Port Call Flow – In port and Pre-departure

11   The objectives and scope were also discussed and agreed among the stakeholders. The agreed scope of the project was to develop a generic MSW system for the Port of Lobito, with the inherent ability to be modified for new stakeholders' requirements at a future date. The project scope recognized the multiple authorities and agencies involved in a MSW system such as customs, port, maritime, health, as well as border and security, functioning and interacting in a port environment. Therefore, the MSW should secure an efficient coordination and exchange of information between the various authorities, for smoother and more efficient transit of people, ships and goods, through the port.

12   The generic MSW system under the SWiFT Project would be developed primarily for the electronic transmission of data related to the reporting requirements covered by the FAL Convention, in particular the required information of the following:

> .1   General Declaration;
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> .2   Cargo Declaration;
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> .3   Ship's Stores Declaration;
>
> .4   Crew's Effects Declaration;
>
> .5   Crew List;
>
> .6   Passenger List;
>
> .7   Dangerous Goods Manifest;
>
> .8   Security Report;
>
> .9   Maritime Declaration of Health; and
>
> .10   Advanced Notification for Waste Delivery.

13   The scope of the MSW system comprises the following main functionalities:

> .1   collection of information through the MSW;
>
> .2   availability of the information to all relevant stakeholders; and
>
> .3   clearance of the ship.

14   In principle, the MSW system in the Port of Lobito must be able to provide relevant information on ship pre-arrival, in-port and pre-departure declarations to any stakeholder with the appropriate access to the system.
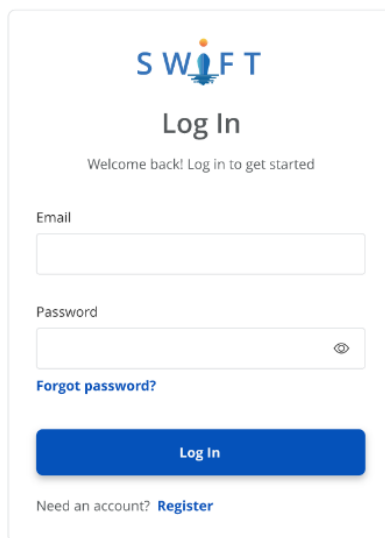
Phase 2 – Development of the system

15   Following the project study phase, the development of the system was done in an Agile software development process, i.e. through continuous requirements discovery and user feedback, solutions improvement, development, and testing of new implementations.

16   To ensure alignment of the system with the needs and expectations from the Port of Lobito as well as to cater for any changes in requirements that could surface, MPA conducted weekly meetings throughout the entire duration of the project with the Port of Lobito, and with IMO in attendance. The weekly meetings aimed to inform all relevant stakeholders on the progress of the development and to clarify any system designs and user requirements.

17   The development of wireframes and prototypes were crucial in facilitating the Agile development process. Before developing the requirements, these wireframes and prototypes served as useful tools to ensure that the flow and design of each function was reproduced as expected by demonstrating them in a visual form. This helped to save time and effort as changes to be made on the wireframes themselves were less tedious than performing them on the system itself once developed.
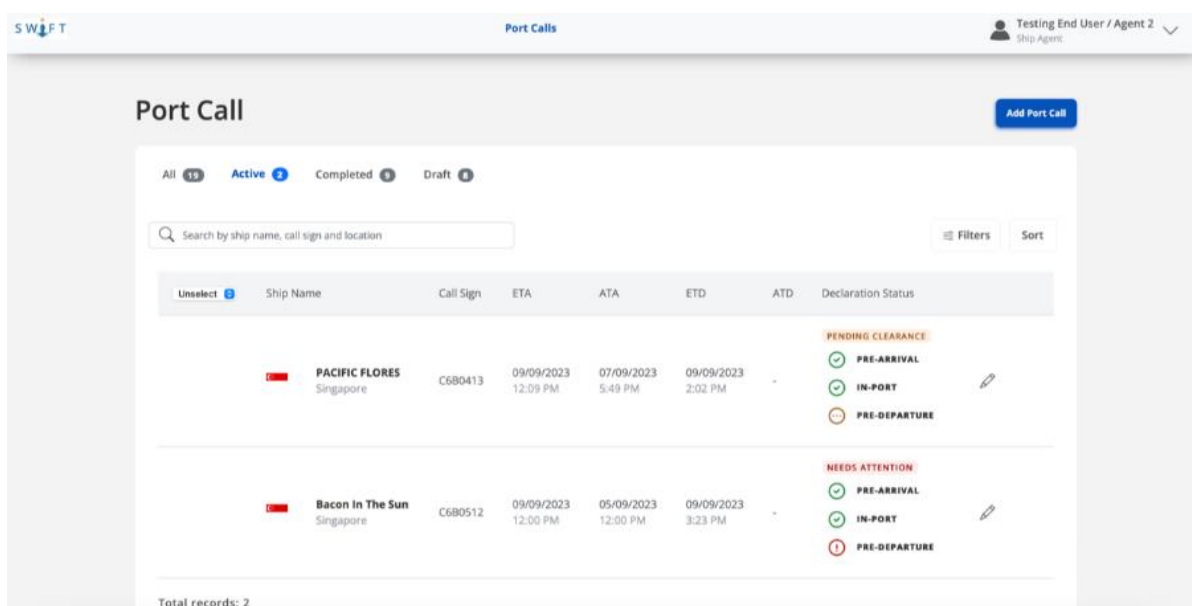
18   The entire development took 14 sprints of three-to-four-week cycles and was completed on 6 October 2023.

Figure 3 SWiFT Login Screen
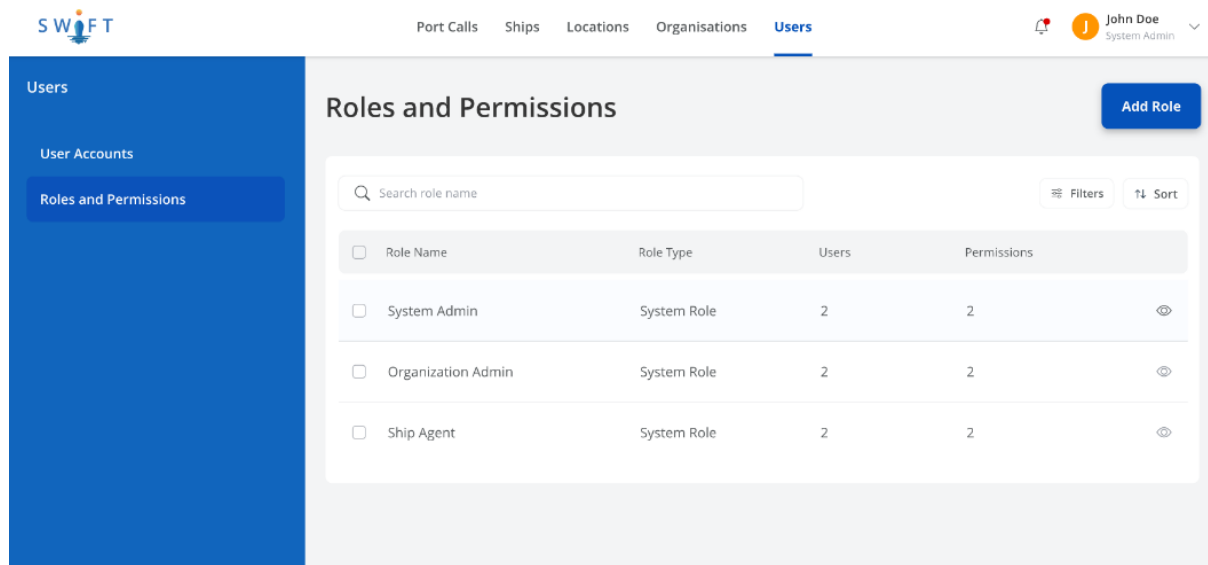

Figure 4 Port Calls Dashboard

Figure 5 Roles and Permissions

Phase 3 – Training and handover

19   To facilitate user training, Angolan representatives were invited to Singapore for a business process study trip, where different groups of stakeholders such as ship agents and the relevant approving authorities, could try out the system and provide feedback on the components that were already developed. This also helped the eventual users of the system to be familiarized with the user interface design of the system. The three-day visit also allowed the Singapore team to receive feedback on the implementation of the port call workflow and confirmed the functional requirements, especially on crucial components such as User Roles and Permissions. The feedback from the trip was incorporated into the system during the remaining of the sprint cycles.

20   In preparation of the handing over of the system, a three-day virtual User Acceptance Test (UAT) was conducted from 13 to 15 November 2023. The session was attended by 16 users from the Port of Lobito, representing stakeholders of the following roles developed in the system:

.1   System Admin;

.2   Ship Agent;

.3   Operational and Commercial;

.4   Foreign Immigration Service;

.5   Marine Sanitary;

.6   Safety and Environment;

.7   Port Operations; and

.8   Port Authority (IMPA).

21   The UAT consisted of test scripts with end-to-end flow on a variety of user interactions with the system. After each day, participants of the UAT would indicate if each function performed as expected, or indicate the errors faced if the task could not be completed successfully. At the end of day three, all test cases were successfully completed and the UAT was concluded. The MSW system was ready for handover.

Figure 6 Virtual UAT

22   To commemorate the successful development of the MSW system and to mark the completion of the project, a handover ceremony was conducted on 20 November 2023 in the Port of Lobito. The handover ceremony was attended by representatives from MPA, the Port of Lobito, AMN and IMO.

Figure 7 Handover ceremony conducted at the Port of Lobito

Conclusion

23   The experience and lessons learned from the SWiFT project provide a reference for the development and implementation of an MSW. As the SWiFT system is a generic and baseline MSW system, there is potential for the system to be adapted and implemented in other ports.

Action requested of the Committee

24   The Committee is invited to note the information provided and take action, as appropriate.

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