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APPLICATION OF SINGLE-WINDOW CONCEPT

Development of a generic maritime single window system in Antigua and Barbuda: a Norwegian / Antigua and Barbuda project

Submitted by Antigua and Barbuda and Norway

SUMMARY

Executive summary:	This document provides information on the IMO single window project in Antigua and Barbuda. The document further describes the open source generic Maritime Single Window software developed in the project. Norway is offering the generic source code developed for the system established for Antigua and Barbuda to other interested Member States, via the web-based hosting service GitHub.
Strategic direction, if applicable:	5
Output:	5.1
Action to be taken:	Paragraph 36
Related documents:	FAL 39/16; FAL 40/19; FAL 41/17 and FAL 42/17

Introduction

1 Facilitating the establishment of e-systems to ensure electronic exchange of information is vital to the modernization of shipping and the facilitation of maritime trade. Avoiding duplication and parallel reporting systems by developing a robust maritime single window (MSW) system is an important element that reduces administrative burdens for shipmasters as well as maritime and port administrations.

2 FAL 40 adopted new mandatory requirements on Electronic Data Interchange in resolution FAL.12(40), amendments to the annex to the Convention on Facilitation of International Maritime Traffic, 1965 (FAL Convention). According to the new standard 1.3*bis*, Public Authorities have to establish systems for the electronic exchange of information by 8 April 2019. A period of no less than 12 months for transition to the mandatory use of the systems shall be provided from the date of the introduction of such systems.

3 The development of such systems is both complex and costly, and the FAL Committee has encouraged States advanced in MSW implementation to cooperate in

exchanging know-how and experiences with other Member States seeking assistance in developing their own MSW.

4 Norway established its national MSW (SafeSeaNet Norway (SSNN)) in 2004. The system is implemented nationwide, in close cooperation with both industry and authorities in Norway, with over 100,000 fully digitized ship reports being exchanged and distributed to the ports and authorities yearly. In addition to serving the Norwegian stakeholders, SSNN is also a participating system to the European Union's Maritime Information and Exchange System, and exchanges information with the Russian Federation though the IMO ratified Traffic Separation Scheme (TSS) north of Norway (BAREP).

5 On the international scene the SSNN platform has been used as a platform in several testbeds and pilot projects aimed at reducing administrative burdens for the shipmaster.

Development of a MSW in Antigua and Barbuda

6 Norway is dedicated to assisting and facilitating the reduction of administrative burdens in the maritime sector. Based on its experience in electronic facilitation of maritime trade, Norway agreed in 2017 to offer in-kind and financial support to IMO, under the Integrated Technical Cooperation Programme, to initiate a project for the establishment of a national MSW in Antigua and Barbuda.

7 The project was designed to facilitate the implementation of a MSW providing an electronic system for maritime transport clearance, by the deadline 8 April 2019, as a mandatory requirement according to the above mentioned Standard 1.3*bis*.

8 Antigua and Barbuda and Norway have been the main stakeholders in the project, where Norway provided in-kind and financial support to Antigua and Barbuda – the beneficiary country. IMO assumed a coordination role between the two countries by providing administrative assistance during the project timeline.

9 A Steering Committee was established consisting of representatives from Antigua and Barbuda, IMO and Norway, and chaired by the IMO Secretariat, to ensure proper conduct and monitoring of the project and encourage and maintain good cooperation among the members. Three meetings have been held since the projected started.

10 Two main groups were created for the development and implementation of the project:

1. An Operational Working Group (OWG) responsible for the national implementation of the system. The group was managed by Antigua and Barbuda and comprised representatives from the relevant domestic stakeholders.

2. A Technical Working Group (TWG) responsible for the development of the system and eventually the technical implementation locally. The technical group was managed by Norway and comprised representatives from both Antigua and Barbuda and Norway.

Project and system scope

11 The main technical deliverables of the project have been completed, and the formal handover of the project to Antigua and Barbuda is set to occur before FAL 43.

12 In the first phases of the project, detailed objectives and a definition of the scope of the final deliveries were developed and agreed amongst the stakeholders.

13 The scope of the project was to develop a generic national MSW system solution that could be adopted for the maritime transport domain, with the inherent ability to be modified for unique stakeholders' requirements at a future date. The project recognizes that authorities, such as customs, port administrations, maritime authorities, health, police and immigration, operate in the port environment, therefore a MSW secures efficient coordination between the authorities, essential for the smooth and efficient transit of people, ships and goods through the port.

14 The generic MSW system has been developed primarily for the electronic transmission of data related to the reporting requirements covered by the FAL Convention, in particular the required information for the:

.1 General Declaration;

.2 Cargo Declaration;

.3 Ship's Stores Declaration;

.4 Crew's Effects Declaration;

.5 Crew List;

.6 Passenger List;

.7 Dangerous Goods Manifest; and

.8 Security.

15 The scope of the MSW system comprised the following main functionalities:

.1 collection of information through the National MSW;

.2 availability of the information to all relevant stakeholders; and

.3 clearance of the ship.

16 In principle, the Antigua and Barbuda MSW system will be able to provide relevant information on ship reporting to any stakeholder with the appropriate access to the system. However, based on the current national port clearance mechanism, access to relevant information in the system is limited to the following onshore stakeholders:

.1 immigration;

.2 customs;

.3 maritime authorities;

.4 port authorities; and

.5 health authorities.

Project execution and deliverables

17 The project was launched in October 2017 with a series of meetings with the stakeholders in St. Johns, Antigua. The meetings gave the project team an opportunity to interact with the stakeholders in order to discuss the scope of the project, identify existing infrastructure and facilities, and conduct a needs assessment. The outcome from the meetings was a joint understanding and acceptance of the stakeholder's responsibilities as well as the objectives and scope of the project, and the way forward.

18 After a specification and preparation period, the project team in Norway started the software development in February 2018.

19 The generic MSW System design is based upon a client-server model with a distributed application structure that partitions tasks or workloads between the providers of a resource or service and service requesters.

20 To enable quick deployment and testing during the project, the generic MSW system was deployed using cloud services. However, with minor adaptations, the system could be deployed on multiple platforms on a local installation, which is the preferred option for Antigua and Barbuda when the system is fully implemented.

21 The first version of the basic generic MSW system was deployed according to the plan and introduced to the stakeholders in Antigua and Barbuda during a three-day training and workshop session in St. Johns in June 2018. The sessions included thorough stakeholder training and hands-on use and testing of the MSW system.

22 The further iterative development of the generic MSW continued during the remainder of the year, with deployment of periodic updated versions made available for the users via the cloud installation. The MSW system was made available to the end users for training, testing and feedback from the time the first version was introduced in June 2018.

23 During the latter part of the development, a technical representative from Antigua joined the system development team. The inclusion of this technician enhanced the project's efficiency and efficacy during the implementation phase, and laid the foundation for local competency to address any issues during the operational and maintenance phases respectively. The project was deployed according to the plan and within scope, and the fully functional generic MSW was delivered on 13 December 2018.

24 The final takeover of the system by Antigua and Barbuda is planned for the first week of February 2019.

Operational Implementation

25 There are several tasks to be accomplished, which have been identified as both fundamental and critical to the successful implementation, operation and maintenance of the MSW system, which each government agency in Antigua and Barbuda was required to commit dedicated and adequate resources to.

26 Consequently, the OWG has established an implementation plan that considers and provides for the:

.1 preparation of the government IT infrastructure for the installation of the software;

.2 delivery/handover of the software and source code;

.3 familiarization and training of all stakeholders;

.4 promulgation of new operational procedures for the electronic clearance of ships;

.5 finalization and implementation of a user manual;

.6 implementation of the service agreement and business rules to address multiple jurisdictional concerns;

.7 commencement of pilot project/testing of the electronic procedures/parallel to existing procedures, which is scheduled for 8 March 2019; and

.8 transition to a full-fledged electronic system, which is scheduled to coincide with the start of the 2019-2020 cruise ship season in October 2019.

Generic maritime single window

27 The costs of development and implementation were also an important parameter discussed in the preparatory work in the project planning. As mentioned above, it was decided to establish a generic open source single window solution. The project sought to utilize existing development tools and databases based on open-source software to keep costs low and to facilitate collaboration and volunteerism. The generic MSW is focused on facilitating the clearance of ships, passengers and crew members, and on connecting the cargo-related information with the custom's single window on cargo clearance already in place, using the information provided in the IMO FAL forms.

28 A generic MSW, such as the one developed in this project, consists of software that will perform many different tasks within the realm of ship reporting and information exchange. The generic system is not customized to any particular country, application or process, but will provide basic services to support the general acknowledged processes within any country that seeks to meet the obligations of the FAL Convention. These services typically relate to registering port calls and facilitating the clearance of ships, passengers and crew members. Thus the generic MSW represents a facility that allows submission of standardized information covered by the FAL Convention to a single entry point.

29 The use of publicly available open source software has been essential during the development of the generic MSW. In this context, the MSW software is, as far as possible, developed using software in which source code is released under the Open Source MIT License. This essentially grants any user the rights to study, change and distribute the software to anyone, for any purpose. Also, with appropriate access, anyone can modify and enhance the code in the current project, or in the future as the need arises.

30 In order to facilitate the implementation of the amendments to the annex of the FAL Convention adopted by FAL 40, and to encourage the establishment of MSW systems globally, Norway has decided to make available the generic source code, for the MSW system established in collaboration with Antigua and Barbuda, available on the web-based hosting service GitHub. IMO Member States may consider using the generic source code for the development of a national MSW system.

31 The MSW source code developed during the project will be released under the Open Source MIT License and made available on the web-based hosting service GitHub.

32 The source code can be found on the following URL: https://github.com/Fundator/IMO-Maritime-Single-Window

33 The MSW system can be accessed on the demo site (password protected): https://imo-msw-public-test.azurewebsites.net/

Possible future extensions

34 Even though the generic MSW developed in the project covers the requirements derived from the FAL Convention, there is still room for future extensions and improvements to the system. The current system is developed as a one-page web application, and a typical extension might be to implement an application programming interface (API) to provide possibilities for system-to-system reporting. Further development implementing modules to support more reporting requirement, i.e. Health Declaration, could be another option.

35 The developed source code is maintained in a repository on GitHub which provides an effective way to collaborate on developing further extensions or improvements to the existing MSW system. GitHub has been adopted by many large open-source projects as their primary home for collaboration and contribution. The repository has been maintained by Norway in the project period, and there is also the option of the MSW repository being maintained by an international body in the future.

Action requested of the Committee

36 The Committee is invited to note the information provided and take actions as appropriate.