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WORK PROGRAMME

Development of guidelines for harmonized communication and electronic exchange of operational data for port calls

Submitted by China, Liberia, Morocco, Singapore, BIMCO, IAPH, IHMA, IPCSA

SUMMARY

Executive summary: This document contains a proposal for inclusion of a new output in the agenda of the FAL Committee to develop guidelines for harmonized communication and electronic exchange of operational data for port calls

Strategic direction, if 5 applicable:

Output: Not applicable

Action to be taken: Paragraph 31

Related documents: FAL.5/Circ.41; MSC.1/Circ.1610 and EGDH 1/13

Introduction

1 This document is submitted in accordance with the provisions of paragraph 4.7 of the *Organization and method of work of the Facilitation Committee* (FAL.3/Circ.214) and proposes a new output to develop guidelines for harmonized communication and electronic exchange of operational data for port calls.

2 In recent years various projects and initiatives have been carried out to enable digitalized and standardized communication between ship and port. The focus of the proposed guidelines is the port call optimization, and in particular the implementation of the Organization's framework on Just-In-Time (JIT) Arrivals, related to resolution MEPC.323(74), which encourages voluntary cooperation between the port and shipping sectors to contribute to reducing GHG emissions from ships. Port call optimization can contribute to reducing emissions and can increase safety of operations. A more efficient port call can be achieved when the necessary information is exchanged between relevant actors in a timely, robust, clear and unambiguous manner.

3 Harmonization of existing industry standards and ensuring their sustainable maintenance is one of the objectives of this proposal. An important incentive for stakeholders to invest in efficiency and improvements is that the standards are already used by the customers of the port (e.g. shipping lines, shippers and cargo owners) and maintained by international organizations recognized by IMO, as this will ensure that the investment is successful and sustainable.

4 These guidelines are focused on the operational data of the ship/port interface, e.g. safe operation of the ship in the port, and not with the administration data exchange, e.g. FAL forms.

Background

5 An efficient, safe and environmentally sustainable port call depends on clear communication between all actors in the ship-shore interface before, during and after operations are carried out. Actors include shipowners, ship operators, charterers, ship agents, port state control, terminal operators, towage companies, pilotage companies, mooring companies, port and other authorities etc. Harmonized communication between all actors is needed, as any gap in communication may lead to operational inefficiency or even incidents that jeopardize safety and/or protection of the environment.

6 The Organization has already adopted some decisions on the harmonization of communication and electronic exchange of operational data:

- .1 the Expert Group on Data Harmonization has already discussed the data set related to the port logistic operational data related to the JIT concept, and it is expected that FAL 44 will approve it in a revised version of the IMO Compendium on Facilitation and Electronic Business (EGDH 1/13, chapter 8 and annex 5). The data set related to port logistic operational data and real time data will be discussed at a later stage (EGDH 1/13, annex 6).
- .2 MSC 101 approved the *Initial Descriptions of Maritime Services in the context of e-navigation* (MSC.1/Circ.1610), and in particular Maritime Service 4, port support service (PSS).

IMO objectives

7 Digitalization plays an important role in the strategic directions on which the Organization will focus in the period 2018 to 2023, in particular the electronic transmission of relevant information between ships, ports and authorities (A 30/Res.1110, SD 5 points 29 and 30).

8 However, as mentioned in the strategic directions of the Organization, the challenge is to ensure that information is transmitted in a universally accepted form. To take full advantage of the electronic exchange of information, closer cooperation is needed among all actors in the maritime supply chain.

9 A number of IMO resolutions have already addressed this matter, recommending to:

- .1 improve a sustainable end to end supply chain as per resolution MEPC.304(72): to further optimize the logistic chain and its planning, including ports (paragraph 4.7.8);

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- .2 improve the ship-port interface as per resolution MEPC.323(74): supporting the industry's collective efforts to improve quality and availability of data and develop necessary global digital data standards that would allow reliable and efficient data exchange between ship and shore as well as enhanced slot allocation policies thereby optimizing voyages and port calls and facilitating Just-In-Time arrivals of ships (paragraph 2.4); and
 - .3 Improve safe berth-to-berth navigation as per IMO resolution A.893(21).

Compelling need

10 Availability and use of high-quality data (operational data as well as administrative data for notifications and declarations) is necessary to improve a port call. Standards for data and standards for data sharing are therefore key to the success.

11 The proposed guidelines for harmonized communication and electronic exchange of operational data for port calls will help to enable efficient data exchange between actors ashore and on board thereby providing a tool for port call optimization.

Analysis of the issue

12 Efficient operational ship-port data exchange is a cost-effective measure to improve safe navigation from berth to berth and contribute to reduce emissions in the supply chain from manufacturer to customer. A lack of standardization of information of port services to ships and coordination between organizations responsible for providing the information may lead to a duplication of efforts.

13 Currently, a ship is mandated to report to port, e.g. 72 and 24 hours, before arriving to a port area; the information exchanged is primarily based on SOLAS and FAL requirements. However, the ship already has an operational data exchange with the port stakeholders days before the port call.

14 For instance, improving the operational data exchange to include unambiguous identification of relevant locations and their availability (e.g. the berth and its availability) and limitations (e.g. maximum draught or the maximum allowed height of the ship at the berth) can enable safer and more efficient port calls and safe berth-to-berth navigation, and at the same time improve the ship's energy efficiency and port air quality.

15 Introduction of guidelines will improve harmonized communication worldwide from which the global supply chain will benefit. The use of the same standards worldwide will have a positive impact on the operational management.

16 The guidelines complement the work of the EGDH by including starting and completion times of services while the ship is alongside the berth and by offering guidance on how the exchange of operational data can be organized in a port.

17 The guidelines would be a high-level document which is not prescriptive to any particular port.

Benefits

18 Benefits for developing guidelines for harmonized communication and electronic exchange of operational data for port calls:

- .1 actors engaged in ship-port interface activities can interact efficiently, using unambiguous data sets and data elements that enable Just-In-Time Arrival;
- .2 ships will be able to improve the planning of loading and discharging operations as well as berth-to-berth navigation;
- .3 facilitate berth planning by terminals;
- .4 shipping companies and ship operators can enhance their port connectivity and follow the progress of operations of their ships in real time;
- .5 port State and coastal State authorities can monitor the port passage of all ships in detail;
- .6 standardized communication between different ports can optimize the operation of ships operating between them;
- .7 actors can share situational awareness emerging from sharing of standardized time stamps associated with operational plans and milestones improving the ability for each actor to coordinate the tasks of operation;
- .8 making standardized digital information on plans, outcomes, and disruptions available throughout the maritime supply chain will enable actors to expand the planning horizons for port call operations;
- .9 relevant port stakeholders can enhance communication with hinterland operators to enable efficient movements of goods in and out of the port;
- .10 a standardized set of identifiers will enable all actors to detect the actual location of the ship, facilitating the relevant actors to service the ship efficiently;
- .11 supply chain visibility; and
- .12 using the standardized communication can save time, reduce emissions and reduce cost in the logistic chain for all involved actors.

International standards

19 There are several locally used industry standards in place related to the communication and electronic exchange in the ship-port interface. However, many of them are not consistently used or implemented globally, although it is commonly acknowledged that improving quality and availability of real-time operational data serves to facilitate the arrival, stay and departure of ships, persons and cargo from ports.

Scope of proposal and output

20 Electronic exchange of information is high on the agenda of the industry, however guidance for all actors for global harmonized communication during port calls is missing, resulting in a proliferation of regional and local solutions.

21 More than 95,000 different ships operate between approximately 9,000 different ports. To implement the 'Just-in-Time' concept and to improve the ship in-port operation, there is an urgent need to develop guidelines for harmonized communication and electronic exchange of operational data for port calls. The timing is also important to avoid local or regional standards being implemented.

22 These proposed new guidelines will add to the ongoing work of the FAL Committee with regard to the harmonization and standardization of data formats for data elements required by the FAL forms. Together with the IMO reference data model which is already adopted by FAL (FAL.5/Circ.41), the proposed guidelines will ensure interoperability between port stakeholders and ships and facilitate electronic communication between ports worldwide.

23 The co-sponsors propose guidelines for a harmonized implementation of data standards to be used during a port call. The guidelines will refer to already established standards, encompassing the ship-port interface data elements from e.g. IHO and other international organizations and adding new data sets where necessary.

24 Use of the guidelines will enable shared situational awareness e.g. from sharing of standardized time stamps associated to operational plans and milestones, improving the ability for each actor to coordinate the tasks of operation, including unambiguous identification of relevant locations and their availability and limitations.

25 As many actors have limited resources to commence digitizing their operations, the new output should be able to deliver guidance for sharing standardized operational data between ship and shore systems facilitating the implementation of JIT arrivals for each port call.

Human element

26 The proposal is consistent with IMO objectives and takes into consideration the human element guidance and principles in Resolution A.947(23). A checklist for considering human element issues by IMO bodies is set out in annex 2.

Priority/urgency

27 This initiative should be considered by the Organization as soon as possible as Just-In-Time Arrival has been recognized by IMO as a short and mid-term measure to reduce emissions from shipping, and be included in the work programme for the 2021-2022 biennium.

28 To take full advantage of the electronic exchange of information, closer cooperation is needed between authorities, ports and the industry at the national and, in certain instances, regional levels.

29 The maritime industry needs global implementation of standards and guidance for safe berth to berth navigation and to contribute to reducing emissions in the supply chain from manufacturer to customer (e.g. relevant for the IMO approach of Just-In-Time arrivals). Such best practices and standards for ports and terminals can only be addressed by the Organization.

Estimation of the number of sessions needed to complete the work

30 Two sessions of the Facilitation Committee are estimated to be necessary to complete the work.

Action requested of the Committee

31 The Committee is invited to consider this document and justification and to include in the 2020-2021 biennial agenda of the FAL Committee the new item on "Guidelines for harmonized communication and electronic exchange of operational data for port calls", with a target completion year of 2022.

ANNEX 1

CHECKLIST FOR IDENTIFYING ADMINISTRATIVE REQUIREMENTS

This checklist should be used when preparing the analysis of implications required in submissions of proposals for inclusion of outputs. For the purpose of this analysis, the term "administrative requirements" is defined in resolution A.1043(27), i.e. administrative requirements are an obligation arising from future IMO mandatory instruments to provide or retain information or data.

Instructions:

(A) If the answer to any of the questions below is **YES**, the Member State proposing an output should provide supporting details on whether the requirements are likely to involve start-up and/or ongoing costs. The Member State should also give a brief description of the requirement and, if possible, provide recommendations for further work, e.g. would it be possible to combine the activity with an existing requirement.

(B) If the proposal for the output does not contain such an activity, answer **NR** (Not required).

(C) For any administrative requirement, full consideration should be given to electronic means of fulfilling the requirement in order to alleviate administrative burdens.

<p>1 Notification and reporting? Reporting certain events before or after the event has taken place, e.g. notification of voyage, statistical reporting for IMO Members, etc.</p>	<p>NR √</p>	<p>Yes <input type="checkbox"/> Start-up <input type="checkbox"/> Ongoing</p>
<p>Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes)</p>		
<p>2 Record keeping? Keeping statutory documents up to date, e.g. records of accidents, records of cargo, records of inspections, records of education, etc.</p>	<p>NR √</p>	<p>Yes <input type="checkbox"/> Start-up <input type="checkbox"/> Ongoing</p>
<p>Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes) The guidelines will consist of a list of standards which may be used to optimize the ship-port interface.</p>		
<p>3 Publication and documentation? Producing documents for third parties, e.g. warning signs, registration displays, publication of results of testing, etc.</p>	<p>NR √</p>	<p>Yes <input type="checkbox"/> Start-up <input type="checkbox"/> Ongoing</p>
<p>Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes)</p>		
<p>4 Permits or applications? Applying for and maintaining permission to operate, e.g. certificates, classification society costs, etc.</p>	<p>NR √</p>	<p>Yes <input type="checkbox"/> Start-up <input type="checkbox"/> Ongoing</p>
<p>Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes)</p>		
<p>5 Other identified requirements?</p>	<p>NR √</p>	<p>Yes <input type="checkbox"/> Start-up <input type="checkbox"/> Ongoing</p>
<p>Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes) Exchange of information across the maritime industry in a swiftly way is likely to reduce the administrative burdens not only for the seafarer but to all within the maritime supply chain. This will at the same time increase the availability and quality of operational data (versus administrative data for notifications and declarations).</p>		

ANNEX 2

CHECKLIST CONSIDERATION OF HUMAN ELEMENT ISSUES BY IMO BODIES

Instructions: If the answer to a question below is: (A) YES , the preparing body should provide supporting details and/or recommendation for further work. (B) NO , the preparing body should give proper justification as to why human element issues were not considered. (C) NA (Not Applicable), the preparing body should give proper justification as to why human element issues were not considered applicable.	
Subject being assessed: (e.g. resolution, instrument, circular being considered) General ship-port interface and in particular the IMO Compendium on Facilitation and Electronic Business	
Responsible Body: (e.g. committee, sub-committee, working group, correspondence group, Member State) FAL Committee	
1. Was the human element considered during development or amendment process related to this subject?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
2. Has input from seafarers or their proxies been solicited?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
3. Are the solutions proposed for the subject in agreement with existing instruments?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
4. Have human element solutions been implemented as an alternative and/or in conjunction with technical solutions?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
5. Has human element guidance on the application and/or implementation of the proposed solution been provided for the following:	
• Administrations?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
• Shipowners/managers?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
• Seafarers?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
• Surveyors?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
6. At some point, before final adoption, was the solution reviewed or considered by a relevant IMO body with relevant human element expertise?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
7. Does the solution address safeguards to avoid single person errors?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
8. Does the solution address safeguards to avoid organizational errors?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
9. If the proposal is to be directed at seafarers, is the information in a form that can be presented to and easily understood by the seafarer?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
10. Were human element experts consulted during development of the solution?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
11. HUMAN ELEMENT: Has the proposal been assessed against the factors below?	
<input type="checkbox"/> CREWING. The number of qualified personnel required and available to safely operate, maintain, support and provide training for system.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
<input type="checkbox"/> PERSONNEL. The necessary knowledge, skills, abilities and experience levels that are needed to properly perform job tasks.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
<input type="checkbox"/> TRAINING. The process and tools by which personnel acquire or improve the necessary knowledge, skills and abilities to achieve desired job/task performance.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA

<input type="checkbox"/> OCCUPATIONAL HEALTH AND SAFETY. The management systems, programmes, procedures, policies, training, documentation, equipment, etc. to properly manage risks.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
<input type="checkbox"/> WORKING ENVIRONMENT. Conditions that have an impact on the safety, health and comfort of those working on board, such as noise, vibration, lighting, climate and other factors that affect crew endurance, fatigue, alertness and morale.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
<input type="checkbox"/> HUMAN SURVIVABILITY. System features that reduce the risk of illness, injury or death in a catastrophic event such as fire, explosion, spill, collision, flooding or intentional attack. The assessment should consider desired human performance in emergency situations for detection, response, evacuation, survival and rescue and the interface with emergency procedures, systems, facilities and equipment.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
<input type="checkbox"/> HUMAN FACTORS ENGINEERING. Human/system interface to be consistent with the physical, cognitive and sensory abilities of the user population.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
<p>Comments: (1) Justification if answers are NO or Not Applicable. (2) Recommendations for additional human element assessment needed. (3) Key risk management strategies employed. (4) Other comments. (5) Supporting documentation.</p> <p>The target audience for the guidelines is not seafarers.</p>	