

The Concept of a Single Window in e-Navigation and According to the EU Regulations

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ABSTRACT: Term single window can mean the point of contact for communication in relation: ship – shore and shore – ship. In this sense, it is mentioned for example in the IMO Resolution A.950(23) “Maritime Assistance Service (MAS)” adopted on 5 December 2003. It can also mean a service or institution on land that collects all information related to safety of navigation before sending them on ships, as defined in the IMO documents on e-navigation. Directive 2010/65/EU of the European Parliament and of the Council of 20 October 2010 on reporting formalities for ships arriving in and/or departing from ports of the Member States and repealing Directive 2002/6/EC requires that vessels shall transmit reports mentioned in the IMO conventions and codes and European Union (EU) and national legislations only once through the national single window established in each EU member state not later than on 1 June 2015. The question is whether these different functions of above-mentioned contact points can be implemented by one shore based institution or service. The article contains an analysis of these issues and tries to answer the set question.

1 INTRODUCTION

The concept of a single window understood as a point of contact between ships and shore institutions and services is not a new idea. Maritime rescue co-ordination centre (MRCC) and sub-centre (MRSC) perform this function for the purposes of the rescue of human life at sea (search and rescue - SAR) operations. Maritime assistance service (MAS) established according to the recommendations of the IMO Resolution A.950(23) adopted on 5 December 2003 is a point of contact for communication between shore institutions and services and ship in danger other than danger to the human life at sea. Vessel traffic service (VTS) centre receiving reports transmitted by vessels in accordance with requirements of the ship reporting system (SRS) and, in particular, performing different services in order to improve the safety and efficiency of navigation, safety

of life at sea and the protection of the maritime environment and/or shore area, worksites and offshore installations from possible adverse effects of maritime traffic is a point of contact and source of information for vessels sailing in the area covered by this VTS [Resolution A.857(20)].

In the IMO documents on e-navigation may be found information on the need to establish a single point of contact, understood as a place where all information related to the safety of navigation is collected and participating in exchange of this information between ships and shore. Directive 2010/65/EU of the European Parliament and of the Council of 20 October 2010 on reporting formalities for ships arriving in and/or departing from ports of the Member States and repealing Directive 2002/6/EC requires that vessels shall transmit reports mentioned in the IMO conventions and codes and European

Union (EU) and national legislations only once through the national single window established in each EU member state not later than on 1 June 2015.

Single windows described in the IMO documents relating to e-navigation and in the Directive 2010/65/EU do not perform tasks related directly to the rescue of human life at sea, so their functions should not be performed by MRCC or MRSC. It is an open question as to what extent they duplicate the functions assigned by IMO resolutions to vessel traffic services and maritime assistance services and whether they can be implemented by those services or require new institutional arrangements.

2 CENTRES OF VESSEL TRAFFIC AND MARITIME ASSISTANCE SERVICES AS SINGLE POINT OF CONTACT

Vessel traffic service established according to the recommendations of the IMO Resolution A.857(20) "Guidelines for vessel traffic services" adopted on 27 November 1997 may perform following functions [Resolution A.857(20)]:

- broadcasting information at fixed times and intervals or when deemed necessary by the VTS operator or at the request of a vessel, containing weather information, forecast and warnings, navigational warnings, information on waterway conditions, reports on the position, identity and intension of other traffic and information on any other factors that may influence the vessel's transit to ensure that essential information becomes available in time for on-board navigational decision-making (so called information service);
- navigational assistance to assist on-board navigational decision-making and to monitor its effects;
- traffic organisation to prevent the development of dangerous maritime traffic situation and to provide for the safe and efficient movement of vessel traffic within the VTS area; and
- allied services meaning services actively involved in the safe and efficient passage of the vessel through the VTS area other than those listed above.

In order to perform information service VTS centre must receive, store and process information about current and forecast hydrological, meteorological, navigational and traffic conditions obtained from own sources of data and other services like hydrographic office, meteorological service, port authority, etc. Traffic organisation may include establishing and operating a system of traffic clearance or VTS sailing plans or both in relation to priority of movements, allocation of space, mandatory reporting of movements in the VTS area, routes to be followed, etc. One of the source of data on vessels approaching VTS area and within this area are reports transmitted by them under the ship reporting system established according to recommendations of the IMO Resolution A.851(20) "General principles for ship reporting systems and ship reporting requirements, including guidelines for reporting incidents involving dangerous goods, harmful substances and/or marine pollutants" adopted on 27 November 1997. VTS

centre is usually a designated shore station of that system.

To summarize the above information may be stated that the VTS centre is a place that collects and broadcasts all information related to shipping in the area of its responsibility provided by other services like hydrographic, meteorological, port, etc. and acts as a single point of contact for vessels in this area.

Maritime assistance service (MAS) shall help the ships in danger other than danger to the human life at sea. Assistance of MAS may be needed when the ship [Resolution A.950(23), Wawruch 2013]:

- is involved in an incident (e.g., loss of cargo, accidental discharge of oil, etc.) that does not impair its sea keeping ability but nevertheless has to be reported;
- according to its master's assessment, is in need of assistance but not in a distress situation requiring the rescue of persons on board; or
- is found to be in a distress situation and those on board have already been rescued, with the possible exception of those who have remained aboard or have been placed on board to attempt to deal with the ship's situation.

First of all MAS is a contact point. According to the IMO recommendation it shall perform following functions [Resolution A.950(23), Wawruch 2013]:

- receiving reports, consultations and notifications provided for by the relevant IMO instruments in the event of an incident involving a ship;
- monitoring the ship's situation if a report discloses an incident that may give rise to a situation where the ship is in need of assistance;
- serving as the point of contact between the master and the coastal state if the ship's situation requires exchanges of information between the ship and the this state other than a distress situation that could lead to a search and rescue operation; and
- serving as the point of contact between those involved in a marine salvage operation undertaken by private facilities at the request of the company and the coastal state if this state considers that it should monitor the conduct of the operation.

Instructions and procedures shall indicate to the organisation performing the MAS functions at a minimum [Resolution A.950(23), Wawruch 2013]:

- the authority or organization to which it shall transmit the information obtained from a ship; and
- the authority or organization from which it receives instructions concerning its action and the particulars to be transmitted to the ship.

The establishment of MAS does not necessarily entail the setting up of a new organisation. The MAS functions may be discharged by an existing organisation, e.g. an MRCC, VTS centre, a coast guard centre, a harbour master's office or another body. The allocation of MAS functions to an MRCC may be an advantageous and effective solution but will require the MRCC personnel to be well trained in distinguishing between circumstances causing a ship to find itself in a distress situation and circumstances placing a ship in a difficult situation but not in distress of human life at sea as defined in the SAR Convention and procedures arising there from. The MRCC concept entails co-ordination of search and

rescue operations, MAS is responsible for receiving and transmitting communications and monitoring the situation only [Resolution A.950(23), Wawruch 2013].

Other effective solution is allocation of MAS functions to a VTS which is a point of contact for ships operating in the area of its responsibility and cooperates with MRCC in the event of commencing a search and rescue operation.

MAS, like VTS should be operational on a 24-hour basis. It should be possible for the English language to be used in communication between a ship in need of assistance and MAS. MAS should be authorized by its respective government to exchange with each other information concerning reports received and situations involving ships which may be in need of assistance.

3 SINGLE WINDOW IN E-NAVIGATION CONCEPTION

E-navigation means the harmonized collection, integration, exchange, presentation and analysis of marine information on board and ashore by electronic means to enhance berth to berth navigation and related services for safety and security at sea and protection of the marine environment [NCSR 1/9, 2014]. Important issues to be addressed by implementing e-navigation system are, among others: modern and effective radio communication technology, information systems and an agreed common maritime data structure (CMD5).

According to the report of the correspondence group on e-navigation accepted and approved on 1st session of the IMO Sub-Committee on Navigation, Communication, Search and Rescue (NCSR) in 2014, the e-navigation strategy implementation plan (SIP) shall focus on five prioritized e-navigation solutions, two of which relate to improved communications between ships and ship-to-shore and shore-to-ship [NCSR 1/9, 2014]:

S2: means for standardized and automated reporting; and

S9: improved communication of VTS Service Portfolio, including improved and standardized shore based systems and services available for shipping.

These communications include reports and messages transmitted by ships and various shore institutions and services in accordance with the requirements of the IMO conventions and codes (so-called maritime safety information – MSI) described later in this article and operational communication for example associated with the entry of the ship into port.

During the formal safety assessment (FSA) process conducted by the mentioned correspondence group, the following risk control options (RCOs) were identified in order aid the assessment of the prioritized e-navigation solutions S2 and S9 [NAV 59/6, 2013, NCSR 1/9, 2014]:

- RCO 4: Automated and standardized ship-shore reporting (related to solution S2); and
- RCO 6: Improved shore-based services (related to solution S9).

- In RCO 4 a potential for reducing workload due to filling out and delivering reportable information has been identified. Currently forms are usually manually filled out and sent individually to each authority requesting the information or designated to receive reports and messages transmitted by vessels and a significant potential for reduction in paper work and administration exists. Designation of one contact point (single window) on shore on national and/or local level to receive ships' reports and messages in digital form will significantly reduce the ship's crew workload [NAV 59/6, 2013, NCSR 1/9, 2014].

Correspondence group on e-navigation stated that as per today information from shore-based services is mostly communicated via voice VHF and in paper form. Information transfer via voice communication can be time-consuming and distractive as navigators may need to make notes of information received and possibly consult various written documentation on the bridge. The voice communication procedure also holds a potential for incorrect transfer and misinterpretation of information. Implementation of system for automatic and digital distribution of information received from shore support services would make this information more available, updated and applicable for navigators [NCSR 1/9, 2014].

VTSs, ports and other shore-based stakeholders gather and hold a lot of information regarding navigational warnings, incidents, operations, traffic regulations, chart updates, hydro meteorological information and warnings, etc., which is often referred to as the maritime service portfolio (MSP). Part of this information is defined as maritime safety information (MSI). It may be broadcasted using voice communication (preferable in English), or in digital form for reconstitution on board the ships by data processing system (e.g. NAVTEX) and in graphic form including charts transmitted by facsimile. The obligation of collecting and transmitting them to ships is defined in following IMO conventions and codes [Wawruch, 2013]:

- 1 International Convention for the Safety of Life at Sea (SOLAS Convention), 1974, as amended:
 - Regulation V/4 (Navigational warnings) and Resolution A.706(17): World-Wide Navigational Warning Service;
 - Regulation V/5 (Meteorological services and warnings) and Resolution A.528(13): Recommendation on weather routing;
 - Regulation V/9 (Hydrographic services);
 - Regulation V/11 (Ship Reporting System – SRS) and Resolution A.851(20): General principles for ship reporting systems and ship reporting requirements, including guidelines for reporting incidents involving dangerous goods, harmful substances and/or marine pollutants;
 - Regulation V/12 (Vessel Traffic Service – VTS);
 - Regulation V/31 (Danger messages);
 - Regulation V/32 (Information required in danger messages);
 - Regulation VII/6 (Reporting of incidents involving dangerous goods);
 - Regulation VIII/12 (Accidents to nuclear ships);
 - Regulation XI/3 (Obligations of Contracting Governments with respect to security);

- Regulation XI/4 (Requirements for Companies and ships);
 - Regulation XI/6 (Ship security alert system);
 - Regulation XI/7 (Threats to ships); and
 - Regulation XI/9 (Control and compliance measures).
- 2 International Convention for the Prevention of Pollution from Ships (MARPOL Convention), 1973, as modified by the Protocol of 1978 relating thereto, as amended:
 - Article 8 (Reports on incidents involving the discharge or possible discharge of harmful substances); and
 - Protocol I (Provisions concerning reports on incidents involving the discharge or possible discharge of harmful substances (in application of article 8)).
 - 3 Articles III (a) and (f) (Consultations and notifications) of the International Convention relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969 (Intervention Convention).
 - 4 Articles 4 and 5 of the International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990 (OPRC Convention).
 - 5 Paragraphs 29 and 30 of the International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on Board Ships (INF Code).

MSI comprises wide scope of information: navigational, hydrographical, meteorological, traffic related, ship and port security related, etc. It is collected and transmitted by ships, e.g. danger message, and many shore institutions and services in different formats using various means of broadcasting. Particular types of MSI may be transmitted from shore by: ship's flag state administration, coastal state administration, hydrographic office, NAVAREA and METAREA coordinators, different governmental and private meteorological services, maritime assistance service (MAS), maritime rescue coordination centre (MRCC), counter-piracy service, coastal and port VTS, security port service, port authority, harbour master's office, etc [Wawruch, 2013].

A maritime service portfolio (MSP) defines and describes the set of operational and technical services and their level of service provided by stakeholders in a given sea area, waterway or port, as appropriate. An MSP may also be construed as a set of "products" provided by a stakeholder. Several elements of the MSP concept could be examples that fit with e-navigation Solution 9, which describes the improved communication of a VTS service portfolio. The MSPs could provide potential opportunities for digital information and communication services on board and ashore. The development of MSPs will require a communication infrastructure capacity that can provide information services. It was noted that elements of the MSPs are sometimes organised differently in the different countries. In the future as technology and opportunity allows it may for example be advantageous to consider combining some MSP elements such as MSI, hydrographic and meteorological services. Examples of elements of MSPs mentioned in IMO documents on e-navigation

include 16 items listed in document Nav 59/9 [NAV 59/6, 2013, NCSR 1/9, 2014]:

- (MSP 1) VTS information service (IS);
- (MSP 2) VTS navigation assistance service (NAS);
- (MSP 3) VTS traffic organization service (TOS);
- (MSP 4) local port service (LPS);
- (MSP 5) maritime safety information (MSI) service;
- (MSP 6) pilotage service;
- (MSP 7) tugs service;
- (MSP 8) vessel shore reporting;
- (MSP 9) remote monitoring of ships systems;
- (MSP 10) telemedical maritime assistance service (TMAS);
- (MSP 11) maritime assistance service (MAS);
- (MSP 12) nautical chart service;
- (MSP 13) nautical publications service;
- (MSP 14) ice navigation service;
- (MSP 15) meteorological information service;
- (MSP 16) real-time hydrographic and environmental information services; and
- (MSP 17) search and rescue (SAR) service.

Correspondence group on e-navigation stated that MSI is essential for enhancing maritime safety and that there is a particularly high expectation to improve the dissemination of MSI and its integration within bridge systems and shore systems. As it was mentioned today there are different onshore services involved in the production of MSI and consequently several MSP will be involved. Each of these services shall collect process and broadcast the information to ships and other users. It will be much easier to do that using single window understood as the single point of contact which should integrate computerized flow management systems [NCSR 1/9, 2014].

4 SINGLE WINDOW ACCORDING TO THE DIRECTIVE 2010/65/EU

The purpose of the Directive 2010/65/EU of 20 October 2010 is to simplify and harmonise the administrative procedures applied to maritime transport by making the electronic transmission of information standard and by rationalising reporting formalities. This Directive shall apply to the reporting formalities applicable to maritime transport for ships arriving in and ships departing from ports situated in EU member states. It shall not apply to ships exempted from reporting formalities. Reporting formalities means [Directive 2010/65/EU]:

- 1 Reporting formalities resulting from legal acts of the European Union:
 - 1 Notification for ships arriving in and departing from ports of the EU member states as described in the Article 4 of Directive 2002/59/EC of the European Parliament and of the Council of 27 June 2002 establishing a Community vessel traffic monitoring and information system [Directive 2002/59/EC].
 - 2 Border checks on persons as required by the Article 7 of Regulation (EC) No 562/2006 of the European Parliament and of the Council of 15 March 2006 establishing a Community Code on the rules governing the movement of persons across borders (Schengen Borders Code).
 - 3 Notification of dangerous or polluting goods carried on board as described in the Article 13

of Directive 2002/59/EC of the European Parliament and of the Council of 27 June 2002 establishing a Community vessel traffic monitoring and information system.

- 4 Notification of waste and residues according to the Article 6 of Directive 2000/59/EC of the European Parliament and of the Council of 27 November 2000 on port reception facilities for ship-generated waste and cargo residues.
 - 5 Notification of security information as required by the Article 6 of Regulation (EC) No 725/2004 of the European Parliament and of the Council of 31 March 2004 on enhancing ship and port facility security.
 - 6 Entry summary declaration mentioned in the Article 36a of Council Regulation (EEC) No 2913/92 of 12 October 1992 establishing the Community Customs Code and Article 87 of Regulation (EC) No 450/2008 of the European Parliament and of the Council of 23 April 2008 laying down the Community Customs Code (Modernised Customs Code).
- 2 FAL forms and formalities resulting from international (IMO) legal instruments: general declaration, cargo declaration, ship's stores declaration, crew's effects declaration, crew list, passenger list, dangerous goods list (FAL forms: 1, 2, 3, 4, 5, 6 and 7) and maritime declaration of health [FAL, 1965].
 - 3 Any relevant national legislation; EU member states may include in this category the information which shall be provided by electronic means in accordance with their national legislation.

Subject to specific provisions on notification provided for in the applicable legal acts of the European Union or under international legal instruments applicable to maritime transport and binding on the EU member states, including provisions on control of persons and goods, EU member states shall ensure that the master or any other person duly authorised by the operator of the ship provides notification, prior to arriving in a port situated in a member state, of the above mentioned information required under the reporting formalities to the competent authority designated by that member state only once [Directive 2010/65/EU]:

- at least 24 hours in advance; or
- at the latest, at the time the ship leaves the previous port, if the voyage time is less than 24 hours; or
- if the port of call is not known or it is changed during the voyage, as soon as this information is available.

EU member states should accept the fulfilment of reporting formalities in electronic format and their transmission via a single window no later than 1 June 2015. This single window, linking SafeSeaNet, e-Customs and other electronic systems, shall be the place where, in accordance with the Directive, all information is reported once and made available to various competent authorities and the EU member states. Where reporting formalities are required by legal acts of the European Union and to the extent necessary for the good functioning of the single window, the electronic systems must be interoperable, accessible and compatible with the SafeSeaNet system established in accordance with the

Directive 2002/59/EC and, where applicable, with the computer systems mentioned in Decision No 70/2008/EC of the European Parliament and of the Council of 15 January 2008 on a paperless environment for customs and trade. Without prejudice to specific provisions on customs and border control set out in Regulation (EEC) No 2913/92 and Regulation (EC) No 562/2006, EU member states shall consult economic operators and inform the European Commission of progress made using the methods stipulated in Decision No 70/2008/EC. Additionally EU member states shall ensure that information received in accordance with the reporting formalities provided in a legal act of the European Union is made available in their national SafeSeaNet systems and shall make relevant parts of such information available to other EU member states via the SafeSeaNet system. States shall ensure that the received information is accessible, upon request, to the relevant national authorities. The underlying digital format of the messages to be used within national SafeSeaNet systems shall be established in accordance with Article 22a of Directive 2002/59/EC. Member states should provide relevant access to the required information either through a national single window via an electronic data exchange system or through the national SafeSeaNet systems. They shall, in accordance with the applicable legal acts of the EU or national legislation, take the necessary measures to ensure the confidentiality of commercial and other confidential information exchanged in accordance with the Directive 2010/65/EU. They shall take particular care to protect commercial data collected under this directive. In respect of personal data, EU member states shall ensure that they comply with Directive 95/46/EC and the EU institutions and bodies shall ensure that they comply with Regulation (EC) No 45/2001. Member states shall ensure that ships falling within the scope of Directive 2002/59/EC and operating between ports situated in the customs territory of the EU, but which do not come from, call at or are headed towards a port situated outside that territory, are exempt from the obligation to send the information referred to in the FAL forms, without prejudice to the applicable legal acts of the European Union and the possibility that EU member states may request information in the FAL forms necessary to protect internal order and security and to enforce customs, fiscal, immigration, environmental or sanitary laws [Directive 2010/65/EU].

5 CONCLUSIONS

National single window described in the Directive 2010/65/EU is established in order to receive by port authorities, customs and border, security and sanitary services of the port state, electronic reports required by the international (IMO), EU and local legislations transmitted by ships engaged on international voyages. These reports were previously received by harbour authorities or port VTS centres and may be considered as an extension of the information transmitted within the maritime service portfolio (MSP) listed in the e-navigation documents [NAV 59/6, 2013, NCSR 1/9, 2014]. It means, that the function of national single windows mentioned in the

EU directives and e-navigation concept, can be performed by one institution or service, preferably by the national centre of a vessel traffic monitoring and information system (VTMIS) established according to requirements of the Directive 2002/59/ EC of the European Parliament and of the Council of 27 June 2002 as amended by the Directives: 2009/17/EC and 2009/18/EC of 23 April 2009, 2011/15/EU of 23 February 2011 and 2014/100/EU of 28 October 2014. The same centre may be designated as a point of contact required by the IMO Resolution A.950(23) "Maritime Assistance Services" adopted on 5 December 2003. Additionally it shall co-operate with MRCC in the event of commencing a search and rescue operation and assist MRCC as a source of data on situation (weather current condition and forecast, traffic conditions, etc.) during this operation.

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