Input paper for the following Committee(s):	check as appropriate	Purpose of paper:
✓ ARM □ ENG □ PAP		✓ Input
□ ENAV □ VTS		□ Information

Agenda item [2] (from agenda)	10
Workplan Task Number[2]	5.2.2
Working Group	WG 2
Author(s) / Submitter(s)	Fred Pot, Secretary, Ship Reporting Correspondence Group

Description of Ship Report Registry

1   SUMMARY

This paper describes the Ship Report Registry
- Why do we need it?
- Who should pay for its development and maintenance?
- Who should govern it?
- How could it be developed and maintained?
- What role will it play in cyber security?
- What is in it?

1.1   Purpose of the document

The purpose of this description is to provide the Committee with information that will enable it to consider taking the lead in its development and maintenance in coordination with other stakeholders:

- Shore-based stakeholders who require ship reports (including IALA National Members)
- Bridge Teams who submit ship reports
- Ship owners/operators that employ Bridge Teams and fund their Ship Reporting ICT Tools
- Vendors that develop, test, maintain and market Ship Reporting ICT tools
- The IMO/IMO FAL Committee

1.2   Related documents

Draft Data Dictionary and Entity Relationship Diagram for the Ship Report Registry.

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1 Input document number, to be assigned by the Committee Secretary

2 Input papers should be assigned to a work task as listed in the Committee work plan which is available in input papers. Leave open if uncertain but consider how the paper is to be processed if not relevant to a work task

2   BACKGROUND

The description of the Ship Report Registry represents the consensus of Members of the Ship Reporting Correspondence Group (SRCG). Its Members are interested in offering effective and affordable products and services that address ship reporting needs both for bridge teams and for shore-based stakeholders:

- Airbus
- Chartworld
- Fulcrum-Maritime
- Kongsberg
- NAVTOR
- Pole Star
- Raytheon Anschütz
- SIRM
- Telko
- Transas
- Inmarsat (Observer)

3   DISCUSSION

The description of the Ship Report Registry is in ANNEX 1 below.

4   REFERENCES

[1]   ARM8-10.2 Ship reporting ARM Task 5.2.2 v1.2

[2]   ARM8-10.2.1 (PAP34-8.1.2) Liaison from ENAV to PAP on ship reporting

[3]   ARM8-10.2.2 Ship Reporting CG Charter v1.3

5   ACTION REQUESTED OF THE COMMITTEE

The Ship Reporting Correspondence Group invites the Committee to take the lead in the development and maintenance of the Ship Report Registry.

1   The Ship Report Registry is an on-line repository that contains details about reports that ships are required to submit to shore-based stakeholders, which includes most IALA National Members.

2   By publishing (changes to) their ship reporting requirements in the registry, shore-based stakeholders will improve compliance. It will ensure that ships will submit the correct information in the correct format by the reporting deadline to the appropriate stakeholder.

3   Tools that are part of the Maritime Connectivity Platform will be used to allow shore-based stakeholders to authenticate report originators and allow ship owners/operators to control access to sensitive ship report information. The registry could be used to assign the required security certificates to shore-based stakeholders. Similarly ship reporting ICT tools could be used to assign the required security certificates to ships.

4   The Ship Reporting ICT Tools that ships will use to generate ship reports will need to have access to the registry possibly for a nominal fee that defrays the costs associated with development and maintenance of the registry.

ANNEX 1

1. DESCRIPTION OF SHIP REPORT REGISTRY

1.1. WHY DO WE NEED A SHIP REPORT REGISTRY?

Bridge Teams use Electronic Nautical Charts (ENC's) on Electronic Display and Information Systems (ECDIS) to plan their voyages and safely navigate their ship. ECDIS helps them in avoiding groundings and allisions by identifying nearby shoals, rocks, reefs, wrecks along with aids to navigation.

Bridge Teams will use Ship Reporting Tools to overcome administrative hurdles much like they use ECDIS to avoid groundings an allisions.

Just like ECDIS uses ENC's to identify shoals, rocks, reefs and wrecks, Ship Reporting Tools will use the Ship Report Registry to identify administrative hurdles for each port on the ship's voyage plan and generate the required reports automatically as much as possible.

ENC's need to be updated on a regular basis to reflect changes in shoals, aids to navigation, etc.

The Ship Report Registry, just like an ENC, is a database that contains information about which shore-based stakeholder requires what reports, when and in what format. It, too, will need to be updated on a regular basis to stay abreast of changes in reporting requirements.

1.2. WHO PAYS FOR DEVELOPMENT AND MAINTENANCE OF THE SHIP REPORT REGISTRY?

National Hydrographic Offices develop and maintain ENC's and distributors provide Bridge Teams with access to them, often through a Pay As You Sail (PAYS) subscription. National Hydrographic Offices perform surveys to update their ENC's.

Similarly, the entity that will publish the Ship Report Registry will need to collect and maintain details on ship reporting requirements from shore-based stakeholders. To fund these efforts, it could charge ships a nominal fee for Pay As You Sail subscriptions to the registry similar to PAYS subscriptions to ENC's.

1.3. WHO WILL GOVERN THE SHIP REPORT REGISTRY?

The main groups of stakeholders in ship reporting are:
1. Shore-based stakeholders who require reports
2. Bridge Teams who submit ship reports
3. Ship owners/operators that fund Bridge Teams and their Ship Reporting Tools
4. Vendors that develop, test, maintain and market ship reporting ICT tools
5. The IMO/IMO FAL Committee

1.3.1. SHORE-BASED STAKEHOLDERS

The interests of shore-based stakeholders are most likely best represented by a country's Competent Authority. Most if not all of them are National Members of IALA. For this reason, IALA delegates should be part of the Ship Report Registry governance.

IALA has added a work item for ship reporting to the ARM committee's 2018-2022 Work Program (5.2.2). The deliverables of this item includes "Ship Report Template Registry specifications and governance".

1.3.2.BRIDGE TEAMS

Many Bridge Team Members belong to the Nautical Institute. Therefore, it might be appropriate to ask a delegate of the Nautical Institute to be part of the governance of the Ship Report Registry.

1.3.3.SHIP OWNERS/OPERATORS

Bridge Teams, however, will not fund access to the Ship Report Registry or for Ship Reporting Tools. Ship owners/operators will. For this reason, it is imperative that they are part of the governance. Their interest could be represented by their proxies from ICS, BIMCO, INTERTANKO, CLIA, etc.

1.3.4.VENDORS OF SHIP REPORTING TOOLS

Vendors, just like they had to agree on S-57 for ENC's, need to agree on a common Ship Report Registry. They need to ensure that it will support development, marketing and maintenance of affordable Ship Reporting Tools. Most of them are Members of CIRM, therefore, their interests in the Ship Report Registry could well be represented by a delegate from CIRM.

Most if not all vendors also belong to the "Ship Reporting Correspondence Group (SRCG)" that was recently formed to address hurdles preventing them from offering effective and affordable Ship Reporting Tools. A delegate from this CG might be able to more directly represent their interest in the Ship Report Registry.

1.3.5.IMO FAL COMMITTEE

IMO has ultimate responsibility for development and implementation of the e-Navigation Strategy Implementation Plan, Solution 2 "Standardized and Automated Reporting". Also, the IMO FAL Committee has a stake in standardizing ship reports. Therefore, representatives from IMO/IMO FAL should be part of the governance of the Ship Report Registry.

1.4. HOW DO YOU DEVELOP AND MAINTAIN A SHIP REPORT REGISTRY?

A survey of shore-based stakeholders and their reporting requirements could be used to develop the initial version of the Ship Report Registry. During the survey, shore-based stakeholders should be invited to submit details about their reporting requirements to the on-line Ship Report Registry and to update their requirements as they change over time.

Shore-based stakeholders, however, are unlikely to do so if the publisher of the Ship Report Registry is a commercial for-profit entity. They are more likely to submit their reporting requirements to the registry if its publisher is an internationally recognized organization like IALA. IALA could furthermore legitimize submission of reporting requirements if it develops and adopts an internationally recognized standard for specification of reporting requirements.

## 1.5. WHAT ROLE WILL THE SHIP REPORT REGISTRY PLAY IN CYBER SECURITY?

Not only do electronic ship reports contain sensitive personal crew and passenger information, they also contain trade secrets about the cargo carried. Ship owners need to retain control over who has access to such information.

The Ship Report Registry will contain a list of shore-based stakeholders. Ship Reporting Tools will use a local copy of this list to control access to electronic ship reports.

The Maritime Connectivity Platform (MCP) is expected to be adopted by the Maritime Industry as secure environment to exchange electronic information. IALA should consider acting as a trusted "Federated Broker" for MCP and assume responsibility to assign shore-based stakeholders a (X.509) security certificate as well as log-in credentials for access to MCP. Doing so will enable ship owners to control access to sensitive ship reporting information by allowing them to authenticate shore-based stakeholders and encrypt ship reports.

1.6. WHAT IS IN THE SHIP REPORT REGISTRY?

The registry contains a list of shore-based stakeholders, their reporting requirements and a list of report templates.
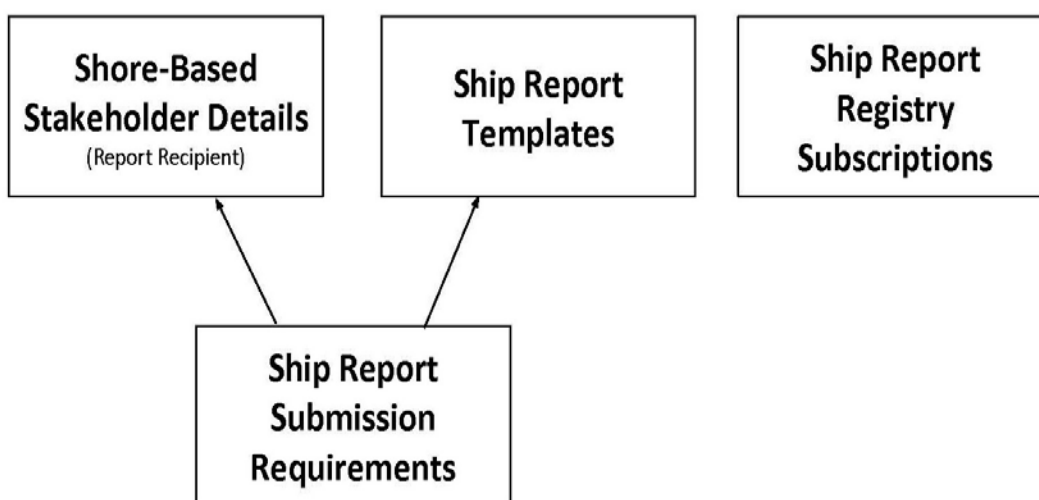
1.6.1. SHORE-BASED STAKEHOLDERS

This list contains up-to-date contact information for shore-based stakeholders that require ship reports along with details about their electronic security certificate.

1.6.2. REPORT TEMPLATES

This list identifies both standard templates (i.e. FAL 1-7) as well as non-standard templates. There are well over 1000 non-standard templates.

Templates identify form headers, footers, body lay-out, data elements, their units of measure, etc. All templates are also captured in a SAP Crystal Reports template that can be used to automatically generate ship reports in the required format.

1.6.3. REPORT SUBMISSION REQUIREMENTS

This list identifies the shore-based stakeholder that requires the report, the report template to use, and details about how it should be submitted, when and in what format:
- Printed form
- Fax
- e-Mail
- PDF

- XML
- etc.