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**International Workshop on Next Generation VTS**

**Tokyo, JAPAN 16 – 20 January, 2017**

**Executive Summary**

The International Workshop on Next Generation VTS was hosted by the Japan Coast Guard (JCG) in Tokyo, Japan from 16th to 20th January 2017. The purpose of the workshop was to identify and examine subjects that may be considered for next generation or future VTS by means of sharing the current situation and trends of VTS in each country.

The workshop was attended by VTS experts from Australia, Sweden, Turkey, United Kingdom, Japan and the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) World Wide Academy. An apology was received from the expert of United States due to illness.

Key components of the workshop included:

* Gaining a common understanding of the current status of VTS in each of the participating countries.
* Identifying differences in the implementation and operation of VTS between countries.
* Identifying elements that may require further consideration to achieve the next generation or future VTS.

The results of a questionnaire circulated by JCG prior to the workshop provided invaluable input to the workshop discussions.

The workshop was structured as four days of discussion and a one day study tour to the Yokohama Port Signal Office, with public events on Japanese tradition and culture which the international experts enjoyed.

The workshop highlighted that the international framework for VTS is clearly defined in SOLAS regulation V/12. However, noting that the international guidance for VTS as provided within IMO Resolution A.857(20) has not been updated in the past twenty years, the following topics were identified which may assist in further discussions on the consideration of future VTS policy and operation:

1. Operation

1. Balancing the safety and efficiency of vessel traffic:

Desired improvements in efficiency should not compromise safety.

1. Effective data and information exchange/sharing and its management:

Data and information exchange/sharing is becoming increasingly important for improving the safety and efficiency of vessel traffic. The operational management of data and information exchange/sharing should be considered.

1. Operating VTS beyond traditional boundaries (e.g. coastal or regional):

The 2016 IALA VTS questionnaire identified that 25% of respondents operated VTS beyond the territorial sea. Some VTSs also operate Ship Reporting Systems.

1. VTS awareness, including quantification of its benefits:

VTS awareness amongst authorities, mariners and the public could be improved. Consideration should be given to adopting measures to demonstrate the effectiveness of VTS and communicate these as appropriate.

1. Delivering VTS within the scope of IMO Resolution A.857(20):

Does the Resolution constrain or pose barriers to the future development of VTS?

1. Communication and phraseology:

Standardized communication and phraseology are crucial for effective interaction between bridge and VTS.

2. Technology

1. AIS and new digital communication tools such as VDES:

Some VTSs use AIS as a communication tool and new digital communication tools such as VDES are now being developed.

1. Technology of shipborne navigational systems and equipment such as Minimum Keyboard Displays (MKD):

Some shipborne navigational systems and equipment, such as MKD, have limited capability for the portrayal of digital information.

1. e-navigation:

How will future VTS embrace e-navigation and emerging concepts?

1. New technology for decision support tools:

New technology, such as route prediction and the use of big data, is becoming available for use as decision support tools.

1. Autonomous ships:

The study and development of autonomous shipping has commenced and its emergence will have an impact on vessel traffic.

3. Education and Training

3.1. Human factors and developing procedures:

Development of new procedures should always involve careful consideration of human factors.

3.2. Mandatory training/certification and global competency:

VTS training/certification should be mandatory, in conjunction with increased standardization.

3.3. Training trainers and instructors:

In order to conduct proper education and training for VTS operators, trainers and instructors should be appropriately trained and certified.

4. Others

1. IMO Member States Audit Scheme (IMSAS):

Under IMSAS, contracting governments to SOLAS are required to demonstrate they give effect to their SOLAS obligations for VTS.

1. Expectations from authorities, the public, mariners, allied services and other stakeholders:

Development of future VTS should recognize increased expectations from authorities, the public, mariners, allied services and other stakeholders.