

5th IHO-HSSC Meeting**Shanghai, China 4-8 November 2013****Information Paper for Noting by HSSC****Environment Marine Information Overlays (E-MIO) for East Asia ENC**

Submitted by:	EAHC E-MIO Working Group
Executive Summary:	The East Asia Hydrographic Commission (EAHC) established an E-MIO Working Group (WG) in Jan 2013 to examine the limitations of S-57 and to assess the use of S-100/x for the development of symbologies for the display of marine environmental information on ECDIS. This paper reports on the work plan and status of the development by the EAHC's E-MIO WG.
Related Documents:	None
Related Projects:	Marine Electronic Highway (MEH) of the Straits of Malacca and Singapore

1 Introduction/ Background

1.1 At the EAHC Coordinating Meeting held in Jan 2013 in Busan, South Korea, the EAHC recognized the importance of the blue economy as well as the need to protect the marine environment. The EAHC E_MIO Working Group headed by Republic of Korea was tasked to produce a test bed marine environment ENC for the East Asia region. The Member States (MS) agreed on the use of ENC/S-100/10x to be the basis for the development work.

2 E-MIO Project Principles

2.1 The principles of the E-MIO project development are as follows:

- a) The use of existing ENCs as a base;
- b) To include requirements of an Oil Spill Response Sensitivity Map;
- c) To populate the E-MIO database from port areas and then expanding outwards;
- d) Specifications used should be based on international standards, with the view to transiting to S-10x datasets;
- e) To work with other National Agencies within the EAHC for the collection of marine information such as marine environment parameters, mariculture data, etc; and
- f) The E-MIO database to be separate from ECDIS, so as not to interfere with navigational functions. The E-MIO information layer would serve as supplementary information.

The E-MIOs are seen as a customized Electronic Navigational Chart (ENC) for specialized use, for example, in inland waterways, and port and coastal areas containing information such as Marine Protected Areas and Coral Reefs.

3 E-MIO Work Plan

3.1 The EAHC E-MIO Project is divided into 3 stages as below:

3.1.1 Trial Project Stage

- a) Conduct case studies on the publication of oil spill related environment sensitive maps by the EAHC MSs and collect basic data (Completed)
- b) Complete the analysis of the ESI Map Guidelines (Completed)
- c) Select areas for the trials of the E-MIOs (Completed)
- d) Draft E-MIO product specifications for oil spills (In Progress)
- e) Produce test data for the E-MIOs (Being Planned)
- f) Develop an E-MIO viewer (Completed)
- g) Prepare a review report and product guidelines for the E-MIOs
- h) Prepare and present a report on the results of the pilot production for the E-MIOs.

3.1.2 Actual Project Stage

- a) Review the results of the pilot production for the E-MIOs
- b) Establish a detailed schedule of the actual business stage

3.1.3 S-100 Standard Application Stage

- a) Develop S-10X standards for the E-MIOs
- b) Establish an E-MIO S-10X dataset on a trial basis

4 E-MIO Demonstration Area (Oil Spill Response)

4.1 The purpose of the demonstration data set is to allow MS to appreciate the usefulness of the E-MIOs. In this regard, ENCs of the Korean and Singapore waters would be used as a base for the development of E-MIOs for use in, for example, in an oil spill response presentation. The “IMO/IPIECA/OGP, Sensitivity mapping for oil spill response” and “NOAA, Environmental Sensitivity Index Guidelines” would be used to populate the E-MIO. The main contents of the E-MIO are:

- a) Shorelines which reflect environmental sensitivity indexes;

- b) Status of biological resources; and
- c) Status of socio-economic resources.

4.2 As there is synergy with the Straits of Malacca and Singapore Marine Electronic Highway Project, the EAHC E-MIO Working Group also worked with the 3 littoral States of Indonesia, Malaysia and Singapore to further develop the E-MIOs covering Malacca and Singapore Straits (MSS). However, due to the limitation of S-57, not all parameters could be produced for display. In parallel, the EAHC will take on the task to develop the E-MIO using S-100 Standards.

5 Progress Updates

5.1 The EAHC E-MIO Working Group is presently preparing the E-MIO Demonstration area and will be presenting the outcome of the demonstration at the next EAHC Steering Committee Meeting in early 2014. The Working Group also plans to submit a paper on the E-MIOs development at the next Extra-Ordinary International Hydrographic Conference in 2014.

5.2 An EAHC E-MIO website has been set up to allow MS to access information such as the Working Group's work plan, project progress and discussion.

6 Action Required of HSSC

6.1 The HSSC is invited to **note** the information in this paper.