WEND8-7A

# 8<sup>TH</sup> WEND COMMITTEE MEETING Tokyo, Japan, 5-6 March 2004

# Compendium of Regional Hydrographic Commissions' Reports (IHB)

SUMMARY			
Executive summary:	This document provides a compendium of all reports which have been received from Regional Hydrographic Commissions on WEND-related issues, in response to WEND Letters 2/2003 and 3/2003.		
Actions to be taken:	The meeting is invited to take note of this paper.		
Related documents:	WEND8-4E; WEND8-7B		

# I. NORTH SEA HYDROGRAPHIC COMMISSION (NSHC)

### I.1 Response to WEND Letter 2/2003

1. Provide a prioritized list of shipping routes within your region needing ENC coverage. This list may be submitted graphically using charts/GIS or as a list of ports and/or waypoint routes.

The West-European region has well defined shipping routes needing ENCs. This is taken care of by the two RENCs in the area viz. IC-ENC and PRIMAR Stavanger. Within the European Union a work is proceeding namely the trans-European transport network (TEN-T), which for many years now is taking care of the infrastructure of transports within the European Union. As new proposed priority project is "Motorways of the Sea" –see them indicated in the attached map, which however includes some minor errors in the Baltic Sea. This project concerns the waters round EU and is defined by the number "21" in the map. It is in the mission of the NSHC to take part in those areas affecting the NSHC and also to widen this area also to include Iceland and Norway, at moment outside the European Union, as well as the transatlantic routes with connection to the north-western Europe . Further information of the TEN-T projects is to be found on the web page <a href="http://europa.eu.int/comm/ten/transport/revision/hlg\_en.htm">http://europa.eu.int/comm/ten/transport/revision/hlg\_en.htm</a>.

2. Provide a small scale ENC schema for your region with assignment of Producer Hydrographic Offices. The submission should delineate ENC Cell boundaries.

Reference is given to the chart catalogues on the web pages of IC-ENC, <u>www.ic-enc.org</u>, and PRIMAR Stavanger, <u>www.primar-stavanger.org</u>.

3. Provide recommendations for bi-lateral or multi-lateral assistance projects that would increase ENC production, quality and consistency.

Within the NSHC this is taken care of by the two RENCs with the exception of Iceland. It must be discussed within the NSHC in cooperation with Iceland how assistance is to be effected.

4. Provide any Proposals from your Regional Commission for speeding up ENC production and ensuring ENC quality and consistency.

The two RENCs and their members have a good control of the work with the ENCs within the region.

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Date: 15 December 2003

Signature:

ES. Mints

# II. MEDITERRANEAN AND BLACK SEAS HYDROGRAPHIC COMMISSION (MBSHC)

# II.1 Response to both WEND Letters 2/2003 and 3/2003

There has been two main actions in 2003 concerning WEND matters.

# 1. The first was the 13<sup>th</sup> meeting of the MBSHC in June in Brest (France).

1.1 Spain made a proposal for a scheme of ENCs at small scale with an attribution of production responsibility. The way the limits were defined was in accordance with the additional WEND principles (cf IHB CL 2002/58), for which the quorum of votes was not reached at that time (adopted later). The meeting welcomed the proposal, with a reservation of Turkey concerning the precise limits which required some complementary studies in Aegean Sea.

- 1.2 The development of ENC production was presented by the participating countries. It was in June 2003 as follows:
- Serbia-Montenegro: Recently they had no longer any qualified personnel. Six people were trained in IMA, but they have currently no production capability.
- Ukraine:Has produced 46 ENC (non distributed as yet) and aim at having a portfolio of 165 ENC before 2006.
- TR: Has produced 110 ENC (non distributed as yet) and expect to distribute them via its own distribution system, V-RENC and other possible distribution way.
- TN : No progress due to lack of means.
- SI: 1<sup>st</sup> ENC produced on a global portfolio of 4 or 5 : envisage to distribute them via V-RENC or any other available RENC.
- RO: 4 have been produced and 7 are proposed to be completed before the end of this year. The global portfolio is not defined yet.
- IT: Produce their ENC from paper charts, but prepare a production from digital databases. Will distribute via V-RENC.
- FR : Priority has been given to International shipping in mainland France (75% of the goods and passengers traffic covered). Will share their future production between their overseas, their areas of international and historic responsibilities. Distribution (including E/R) is done via Primar Stavanger. France has not allowed SENC distribution due to reservations on the quality and integrity control of the ENC-SENC converters.
- AL: No ENC production. All the charts are in digital form. Expect to be users of Medchartnet.
- CY: No ENC production capacity, but has taken advantage of MEDA7 and hopes to use Medchartnet.
- HR: There are equipment (1 work station with dKart, other equipment expected in the frame of the North Adriatic Pilot Project) and people have been trained and qualified for ENC production. Work has started on nine cells which are not yet available on the market. Old hydrographic surveys will be an obstacle in the future ENC production (at least 50% of the sea areas need to be re-surveyed). They expect to solve distribution or overlapping problems through V-RENC or other international projects. For more details see HR national report.
- ES : 75 ENC produced and distributed via IC-ENC.

- GR : The production is carried out in association with private sector. The objective is 307 ENC in 2004.
- IL : No ENC, no capacity for the time being: expects to use Medchartnet.
- MA: No ENC, no capacity for the time being: expects to use Medchartnet.
- MO: Production is made by France: an administrative arrangement between States with France and taking into account the SOLAS regulations is under preparation and could be a good example in similar cases.
- USA : 3 types of electronic charts. 1/ NOAA ENCs (315 produced for a total of 1000 in the US waters): 1 up-date per month : distribution via Primar Stavanger and IC-ENC is under study. 2/ Inland ENC (rivers and waterways) 2000 miles already produced on Mississippi and Missouri rivers. 3/ NIMA DNC (5000 produced with monthly update), and DNC2 is under study. Presents in conclusion two co-operation projects for ENC in MACHC and PAIGH with 8MM\$ funding from World Bank.
- GB : 350 ENC produced of which 220 distributed by IC-ENC. 41 are under production for the areas of Malta, Gibraltar, Cyprus and Egypt. Data capture is contracted out to a company in India (IIC). All quality assurance and updating is done by the UKHO. The UKHO has the capacity to produce about 20 ENCs per month and would be pleased to assist other nations in the region with the production of their ENCs.

1.3 The history of the V-RENC has been presented from the initial idea in 1999 to the first meeting of an emerging directing board in April 2003. The objective was to be able to begin experimental distribution at the end of 2003. IT, GR, Ukraine, HR, SI, TN, Serbia and Montenegro, MA have signed the MOU constituting the V-RENC.

Primar-Stavanger principles were presented including the VPN liaison, the distribution system via encryption and then private distributors, the Members and the possibilities to be linked without being a Member (eg V-RENC).

GB gave a brief presentation on IC-ENC and explained that there was a need for hydrographic offices and RENCs to work together to improve the ENC coverage, the consistency of ENCs and the availability of ENCs through "one stop shops".

1.4 IMA gave information on Medchartnet project which concerns the interconnection of the Mediterranean states for exchange of hydrographic and cartographic data. It is intended to contribute to the production of ENC via technical assistance and as support of the V-RENC. An European call for tender was prepared, with the aim to digitize a series of 600 nautical charts selected by the italian HO, but no information was given about this selection.

It was observed that the ENC are official products (SOLAS), and therefore the problem is not merely a problem of digitization of paper charts but a problem of cartography.

# 2. The second is the answer from MBSHC to the WEND Letter 2/2003 of 15 September 2003.

2.1 Replies were received from Algeria, Bulgaria, Spain, France, Greece, UK and Tunisia (ie only 25% of the members and associate members).

Overall the responses confirmed the discussions and conclusions of the 13<sup>th</sup> MBSHC Conference.

2.2 As regards shipping routes (question 1), all those countries which have replied refer to INT Charts whether it be small scale (large shipping routes) or large scale (traffic regulations, access to ports).

2.3 For the small-scale ENC schema (question 2), the proposal made by Spain and discussed at the 13<sup>th</sup> Conference of the MBSHC for ENC of the "overview" category was largely supported as it enables to define simultaneously the limits and production responsibilities directly linked to the INT Charts, which simplifies the scheduling. Certain countries (France, UK) have started the production of the ENCs which were attributed to them under this scheme.

2.4 Question 3 concerns bilateral or multi-lateral assistance projects. Spain indicated that one possibility would be to establish agreements for an interim production in the waters of those countries which do not yet have the capability to produce ENCs. UK stated that it was ready to help those countries, who so wish, in the production of their ENCs. France underlined the obligation resulting from the new wording of Chapter V of the SOLAS Convention, which weighs on Coastal States to provide hydrographic services to mariners navigating in their waters; these States have to clearly announce how they provide these services, and if they do not yet have the necessary capability, they must indicate what intermediate solution they are using.

2.5 As regards question 4 (proposals to speed up ENC production, whilst ensuring their quality and consistency), those countries which have replied have provided the status of production in their areas of responsibility. Spain and France have practically completed the coverage of their waters for international shipping; Greece reported that their 307 cells will be complete in March 2004 (programme half completed in December 2003). UK provided its production schedule for the south east Mediterranean, based on the INT Chart scheme; this schedule covers all the charts of the INT Chart scheme and is thus complete.

The absence of a reply for the Black Sea does not allow to report on the ENC production in this area.

2.6 No comment has been made concerning ENC quality and consistency. The four countries who actually have put ENCs on the market– Spain, France, Greece and UK – are members of one of the two European RENCs and they therefore rely on these RENCs for the verification and harmonization of their production.

On behalf Ingénieur general Yves Desnoës Chairman of the Mediterranean and Black Sea Hydrographic Commission, Ingenieur général Michel Le Gouic Head of the Bureau for General Affairs

# III. EAST ASIA HYDROGRAPHIC COMMISSION (EAHC)

# III.1 Response to WEND Letter 3/2003

# **ENC PRODUCTION AND DISTRIBUTION**

# China

China completed about 200 ENCs in S57 (Version 3.1) format according to the determined ENC catalogue, covering the Chinese coastline and important harbours and waterways. Some of them have been distributed to the end users in SENC format.

Hong Kong SAR of China has completed ENCs covering Hong Kong port and on sale publicly. The South China Sea has been well surveyed. ENCs covering the main South China Sea are under developing and will be available by the end of this year. China also produced many specific ENCs using in VTS and AIS system. China will continue to study the application issues about ENC update and ENC data protect.

### Indonesia

No information

# Japan

463 ENC cells (it is equivalent to the chart of 288 sheets) are published with CD of the 15 present condition of ENC creation of Japan. Up to date for ENC is offered with CD every month.

### Malaysia

Malaysia has been producing ENC cells with limited capability. For in house ENC production, we are using NTX (interchange) format chart files with preprocessing work for the data carried out with the CARIS. The production of ENC covering Malaysian waters in Malacca Strait has been completed. We are now working on the ENC for rest of Malaysian waters.

C-MAP (Malaysia) Ltd., a joint venture between CMAP Norway and a local company was appointed to an agency for the sales and distribution of Malaysian ENC.

### Philippines

Coast and Geodetic Surveys Department of National Mapping and Resource Information Authority is currently undertaking a joint ENC development project with the Japan International Cooperation Agency (JICA). The first phase of the project started in June 2000 covered a three-year period. Due to some problems experienced during the implementation of the project, there were activities left uncompleted. It is for this reason that the project was extended until June 2005 or another two years for its second phase.

So far, there are three published ENCs that were launched on 10 December 2003. The said ENCs consist of one general (PH2NLZ40.000), one approach (PH4MCT40.000) and one harbor (PH5MHR40.000).

### **Republic of Korea**

Since 1995, National Oceanographic Research Institute (NORI) has produced ENCs covering the entire Korean waters. Until 2003, 210 new editions have been produced and 91 ENC cells revised.

The official distribution service was launched on July 1, 2001. Korean ENCs are available from two distributors appointed by NORI such as Korea Ocean Development Company (<u>www.chartkorea.com</u>) and E-Marine Logix (<u>www.emlx.co.kr</u>). Until 2003, more than 27,000 ENC cells were distributed and sold in private sectors.

#### Singapore

The Hydrographic Department of the Maritime and Port Authority of Singapore (MPA), embarked on the production of ENC data since late-1994. On 17 March 1998, the first official Singapore ENC Release 1998.1, which was fully compliant with IHO S-57 Ed. 3, was released for commercial use. The Singapore ENC covers Singapore waters and its approaches. It contains chart information necessary for safe navigation and supplementary information in addition to those in the paper charts. Monthly incremental ENC updates were made available on the MPA web page where users could download. The latest edition of the Singapore ENC (Release 2004.1) consists of 14 cells and is produced in accordance with the IHO S57 Edition 3.1 Specifications.

To further promote the use of the ENCs with ECDIS, from October 2003, MPA appointed 10 distributors to distribute the Singapore ENCS. The distributors include GMap (Norway), E\_MLX Co, Primar Stavanger, Vector Services, Motion Smith, DPM (Singapore), HanseNautic, SevenCs, Kelvin Hughes, and Korean Ocean Development Co. Monthly incremental Singapore ENC updates are sent to the distributors for them to update their users.

A pilot project commenced in April 2003 to evaluate the use of AIS transponder as an aid to navigation. This involved customization of the AIS transponder and the initial installation of the transponder on a navigational buoy equipped with RACON for evaluation. The monitoring of the AIS transponder was displayed over an ENC. The pilot project was completed in the end of 2003. We are currently evaluating the results of the pilot project. We would consider installing the transponder on other aids to navigation.

### Thailand

The Hydrographic Department of the Royal Thai Navy (HDRTN) is in the process of ENC development project which has started in the year 2000. We have acquired hardware and software for ENC production. We have produced 10 ENC charts that covered Thai waters. In 2003, we have installed ECDIS on our ship, which will be used for ENC Sea Trial this year. We also have changed the horizontal datum from Indian 1975 to WGS-84 for the new surveys. We have tried to speed up our ENC production and release them to the public. Also, we have tried to follow IHO standards and specifications about ENC production.

HDRTN have worked closely with EAHC and NIOHC concerning INT Chart and ENC Production. HDRTN have also reached an agreement with UKHO about the Exchange of Letter. HDRTN will always give better conditions to HO than to commercial companies. After HDRTN finished our ENC Project, we will cooperate with neighboring Member states in boundary areas.

# JOINT PRODUCTION OF ENC

# Singapore: Joint Production of ENCs Covering Regional Ferry Routes

In 2001, the project on the joint production of ENCs covering the Indonesian ferry terminals and routes in the Singapore Straits was initiated between the HOs of Indonesia and Singapore. The ENCs consist of 8 cells which are produced in accordance with IHO \$57 Edition 3.1 Specifications. Following the quality assurance of the ENCs, sea trials aboard regional, commercial ferries were conducted. It was agreed by both countries that the ENCs be launched during the  $2^{nd}$  International ECDIS Conference and Exhibition that would be held in Singapore from 7 - 9 October 2003.

# Malaysia

We are involved in the Four Nations Joint ENC production project of the Malacca and Singapore Straits. This project is a Cooperative Venture by three Hydrographic Offices of Indonesia, Singapore and Malaysia with technical support from Japan. Currently we have digitized 6 Common Datum Charts (CDC) of the Straits of Malacca and Singapore prepared by the Four National Joint Survey Project from 1978 to 1982. We incorporated digital data obtained from recent Joint resurvey Project from 1998 to 1999 into the ENCs. The joint ENC extends from One Fathom Bank in Malacca Strait to the Horsburgh Lighthouse at the entrance of South China Sea.

# ECDIS AND SEA TRIAL

### Thailand

By installing ECDIS on Buoy-tender vessel "HTMS. SURIYA" in Dec. 2003, the first 10 ENCs in Thai Waters will be tested on board during the time that "HTMS. SURIYA" maintains aids to Navigation in the waters both the Gulf of Thailand and Andaman Sea.

### **Singapore – ECDIS**

To further promote the use of ECDIS, the Department continued to conduct demonstrations to ferry operators and shipping companies. In this regard, MPA has taken the lead to equip our hydrographic vessels, buoy tender, fire fighting vessels and port inspection crafts with the ECDIS.

### Singapore – SHARED Programme

The SHARED (Singapore - Hong Kong - Admiralty Raster and ENC Demonstration) Programme begun as a demonstration on the use of ECDIS with integrated official raster and vector charts (ENCs) in a hybrid electronic chart system on board ships plying between Southampton, Singapore and Hong Kong was jointly initiated by MPA and UKHO in September 1996.

From the success of the demonstration, more HO's have accepted the SHARED concept and have participated in the Programme, resulting in further demonstrations being endorsed and organised including the Round-the-World Demonstration in May 2000. To date there are more than ten countries involved in the SHARED Programme. They are Australia, Chile, China, Hong Kong SAR, Indonesia, Japan, Malaysia, Philippines, South Korea, United Kingdom, United States of America and Singapore.

The  $6^{\text{th}}$  SHARED meeting was held in Hong Kong SAR in August 2002 and various issues for instance the SHARED website (ww.ecdisnow.org), the development of Edition 4 of IHO S-57, and AIS integration with ECDIS were discussed.

# CONFERENCE AND SYMPOSIUM

# 8<sup>th</sup> EAHC Conference

The 8<sup>th</sup> Conference of EAHC was held from 11 to 14 November 2003 in Shanghai, China. 8 member states were attended the Conference to discuss various issues in the region. In the Conference, China, Indonesia and Korea presented some papers regarding ENC application, production and distribution.

# 2<sup>nd</sup> International ECDIS Conference and Exhibition

The 1<sup>st</sup> International ECDIS Conference and Exhibition, jointly organised by MPA and the UKHO in October 1998 in Singapore was attended by more than three hundred participants from thirty-seven countries. Resulting from this overwhelming response, MPA and the UKHO organized the  $2^{nd}$  International ECDIS Conference and Exhibition from 7 - 9 October 2003 held in Singapore.

With the increased availability of official electronic charts, the conference aims to reinforce the Mariner's or potential user's confidence in, and to address their needs regarding the use of ECDIS. To this end, 42 papers were presented from all sectors of the industry to present a balanced view of the development of ECDIS. About 350 participants from 30 countries attended the Conference Opening Ceremony. The Conference provided a unique platform for major international players to come together to share their views, experiences and visions.

### Seminar on Publishing of ENC in the South China Sea for International Navigation

The Seminar aims to discuss charting, maintenance, publishing and cooperation on the small scale ENC in the South China Sea, where is a blank area of an official ENC, for International Navigation with the representatives from the littoral states in the South China Sea and IHO.

## **Technical Symposium**

The Republic of Korea proposed to hold a technical symposium on ENC distribution service to facilitate the usage and distribution of ENCs in the East Asia region early 2005 in Korea.

# TRAINING AND INTERNATIONAL COOPERATION

### **Singapore - Training**

The Hydrographic Department offers the following training courses annually such as ENC Production and Quality Assurance (3 weeks) and Introduction to ECDIS (2 days)

### Japan - Over sea cooperation and activities for ENC

Japan conducts technology development for ENC in the Republic of the Philippines and technical cooperation for ENC production in the Straits of Malacca and Singapore.

Jung-hyun Kim National Oceanographic Research Institute Rep. of Korea

# IV. NORDIC HYDROGRAPHIC COMMISSION (NHC)

# IV.1 Response to WEND Letter 3/2003

This Report has been prepared according to the WEND Letter 3/2003 requirement to the Regional Hydrographic Commissions to give a short report of the WEND-related activities in their regions.

The NHC has approved this report on its  $48^{th}$  Conference on  $2^{nd} - 4^{th}$  February 2004.

**WEND Task Group** asked in WEND Letter 2/2003 the RHC:s to give a report on the status of the ENC production and proposals to foster it. Mr. Juha Korhonen as the corresponding member of the NHC (and also the BSHC) has prepared a BSHC and NHC Report on behalf of the both RHCs. It has been distributed to the IHB and the NHC and BSHC members on  $15^{\text{th}}$  of December 2003.

The following summary conclusions regarding to the NHC may be drawn:

- **The ENC Production** is going on in all the NHC countries. There are prioritized production plans to cover the main areas of importance to the navigation. On the Baltic Sea there exists a Harmonised Re-survey Plan requested by the Helsinki Commission and developed by the BSHC Commission.
- The know-how and the equipment needed for production are mainly available. Private companies have been used in the ENC production in some countries, mainly with positive experiences. The varying quality of the source data is lowering the ENC production speed.
- Only Iceland has reported some case by case need for **assistance for ENC production**, mainly training. No assistance project was proposed.
- The **distribution of the ENCs** is via the PRIMAR Stavanger except Iceland.

The following proposals to speed up the ENC production were proposed:

- The IHB to prepare a high level paper to politicians describing the benefits of the ECDIS and ENC concepts and the urgent need for ENCs.
- Open issues on the EEZ border lines should be fixed by Foreign Ministries.
- Mutual meetings are needed to agree on common small-scale ENC Schemas.
- The recommendations for the ENC consistency and quality issues that have been worked on by the CHRIS Committee and the PRIMAR Stavanger and IC-ENC should be finalised. Possible common meetings within the BSHC and the NHC/NSHC may be needed to agree on common application of these recommendations.

• Possibilities to utilize more extensively private companies for the ENC production should be used. The experiences so far have been positive.

Juha Korhonen Finland Corresponding Member to WEND, for NHC and BSHC

# V. MESOAMERICAN-CARIBBEAN SEA HYDROGRAPHIC COMMISSION (MACHC)

# V.1 Response to WEND Letter 2/2003, from the Electronic Chart Working Group of MACHC

1. Provide a prioritized list of shipping routes within your region needing ENC coverage. This list may be submitted graphically using charts/GIS or as a list of ports and/or waypoint routes.

In the Attachment (a ppt presentation) are three maps of the MACHC region showing:

- i. Major commercial Shipping Routes
- ii. Major Container Ports
- *iii.* Prioritized Shipping Routes / Areas for ENC Coverage

*These were developed and discussed at the March 24 2003 MACHC – Electronic Chart Working Group (ECWG) Meeting, and are one of several initiatives to encourage the production of ENCs in the MACHC region.* 

2. Provide a small scale ENC schema for your region with assignment of Producer Hydrographic Offices. The submission should delineate ENC Cell boundaries.

Also in the Attachment is a chart scheme / coverage for small-scale INT charts (e.g. 1:1,000,000 scale) that was proposed at the March 24 MACHC-ECWG Meeting for the Meso-American and Caribbean Sea region. Current intentions are that this coverage scheme could become the basis for small-scale ENC production as well and will be further diuscussed at the next ECWG meeting.

3. Provide recommendations for bi-lateral or multi-lateral assistance projects that would increase ENC production, quality and consistency.

A major regional challenge is that many countries do not even have the capacity to produce paper charts, much less raster navigational charts (RNCs) or ENCs. Therefore the anticipated assistance by the WEND Task Group in recommending potential partners, both governmental and non-governmental, will be very welcome.

As a first step towards addressing capacity building in the MACHC region, the MACHC-ECWG has made a concerted effort to get a hydrographic component included in a proposed project for the Gulf of Honduras region that will be submitted to the Global Environment Facility (GEF) for funding. This project, called the "Environmental Protection and Maritime Transport Pollution Control in the Gulf of Honduras", contains a specific objective to:

"Enhance navigational safety of key ports and approaches with the goal of reducing marine environmental pollution by improving hydrographic capacity in terms of improved navigation safety products (e.g., nautical charts) and services (e.g., notice-to-mariners), and improving a coastal / oceanographic GIS database that can be used for an oil and chemical spill prevention and contingency planning for the Gulf of Honduras to prevent damages associated with both operational and accidental discharges at sea, and the ability to respond to accidental spills." There are three primary activities identified under this objective:

- 1) facilitate hydrographic capacity building for the three nations in the region (Belize, Honduras and Guatemala);
- 2) develop and implement a training / demonstration program for national and regional entities in hydrography to improve technical capacity; and
- 3) conduct three demonstration pilot projects that include improved navigational products (e.g., paper charts, RNCs and ENCs) and services (e.g., notice- to-mariners and Marine Information Objects (MIOs)) for marine environmental protection.

If funded by the GEF, resources will then be available to address capacity building in this part of the region that ideally will be replicable in others in the future.

4. Provide any Proposals from your Regional Commission for speeding up ENC production and ensuring ENC quality and consistency.

As indicated above in number 2, the ECWG is actively considering basing ENC production on the regional INT chart scheme, starting with the smallest scale charts. Greater interaction is also needed with cruise line and shipping companies in regard to identifying / prioritizing important ports and routes as they have the highest demand for ENC route and port coverage. This is being explored by the ECWG with a view to determining the potential overlapping interest with the ECWG priority routes already identified. An appropriate regional ENC distribution service will need to be established as well. Other regional experience / lessons learned in this area would be very valuable.

<u>Points of contact</u>: Chair: Vice-Chair: Technical Coordinator:

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**Note:** The three most important routes are numbered #1, #2 and #3. Other routes are shown in black colour, with the thickness of the line indicating the number of vessel transit and/or tonnage of goods transported.



# **ENC Production Priority in the Caribbean and Gulf of Mexico**



Note: The circled numbers (in red) indicate the priority areas for ENC production and coverage based on major shipping routes and key ports.



**Note:** Currently, it is proposed that this INT Chart Scheme for Caribbean – Gulf of Mexico region be the basis for the production of small-scale (< 1,000,000 scale) ENCs.

# V.2 Response to WEND Letter 3/2003, from the Electronic Chart Working Group of MACHC

23 February 2004

# Background

The Electronic Chart Working Group of the MesoAmerican – Caribbean Sea Hydrographic Commission (MACHC-ECWG) was formed to encourage the production of electronic chart data and to promote the use of official electronic chart data, e.g. Electronic Navigational Charts (ENCs) and Raster Navigational Charts (RNCs), for the region aboard ECDIS-equipped vessels. The overall goal is to demonstrate and facilitate the use of integrated official electronic chart data (ENCs and RNCs) for safe, efficient, and environmentally-sensitive maritime navigation. Recognizing that regional capacity to produce ENCs is currently limited, improving coastal states' ability to acquire data and produce accurate paper and electronic charts has been identified for special emphasis. Additionally, exploring opportunities for alternative uses and support for the acquisition of hydrographic data and provision of services forms an integral part of this effort.

# Objectives

- 1. Facilitate the production and use of official electronic chart data within the region, including Electronic Navigational Charts (ENCs) and Raster Navigational Charts (RNCs).
- 2. Improve hydrographic capacity of regional coastal states towards the long-term goal of producing ENCs.
- 3. Identify sources for acquiring and installing the necessary equipment, software tools and related training.
- 4. Speed up ENC coverage of the region, particularly in key ports and along major shipping routes.
- 5. Establish an EC data distribution service among Hydrographic Offices (HOs) within the region.
- 6. Increase the awareness of the benefits to using official EC data.

### Activities

At the 24 March 2003 meeting of the Electronic Chart Working Group (ECWG), two Task Groups were formed to address two critical needs within the MACHC region:

- 1. Build up national capacity for regional coastal states in need of assistance.
- 2. Increase ENC coverage of the region, particularly for major ports and shipping routes.

### Task Group #1 - MesoAmerican Pilot Project (Chair: Panama)

<u>Goal</u> – Improve capacity building of coastal state hydrographic offices in a defined area by conducting a pilot project in the Gulf of Honduras (GoH) that demonstrates the benefits of nautical chart production as a means to improve safety of navigation, efficient inter-modal transportation, natural resource management, and growth in core economic sectors of the regional economies (e.g., tourism, cruise ship industry).

The main objectives of the GoH Pilot Project (Belize, Honduras, and Guatemala) are the protection of the marine environment and contributing to the region's sustainable economic growth. However, project proposal now includes a hydrographic component to demonstrate that hydrography can be used for purposes that extend well beyond navigation. The hydrographic component has several stages, including conducting hydrographic surveys, data acquisition/management, paper nautical chart/RNC/ENC production, and development of Marine Information Objects (MIOs) associated with marine environmental protection. It is also intended that this pilot project build partnerships and establish collaborative arrangements under regional development and environmental projects that are being funded by organizations such as the World Bank, Global Environment Facility (GEF), InterAmerican Development Bank (IADB).

# Actions to Date

The GOH project has been submitted to the GEF Council for approval. If granted, the fiveyear GoH Project is expected to become operational in late 2004. Using existing hydrographic survey data for priority ports in Belize and Honduras, it is hoped that ENC production can begin during the first year of the project. Surveying and expanding the ENC coverage for Guatemala priority ports is planned during the third year. It is expected that the GoH Project will act as a catalyst to enable the production of paper charts, RNCs and ENCs for the Gulf of Honduras region at 1:50,000 scale.

# Task Group 2 - ENC Production and Distribution Task Group (Chair: Mexico)

<u>Goal</u> - Facilitate the production and distribution of ENC data for major ports and shipping routes within the MACHC region. Promote the use ENC data by major shipping companies and cruise lines thereby contributing to safety of navigation, improved efficiency of maritime transportation, and marine environmental protection.

Specific tasks include:

- Developing a process for selecting ports and routes for priority ENC coverage. More specifically, to specify appropriate selection criteria and weighting parameters.
- Identify ENC production responsibilities for the selected ports and routes.
- Recommend options for distribution of ENCs to the shipping market.
- Establish cooperative arrangements for ENC production, quality assurance and maintenance.

### Actions to Date

A Priority List of Ports and Routes for the MACHC was agreed at the 24 March 2004 meeting of the ECWG. ENC Production. Although there was general agreement on <u>what</u> ports and routes need to be produced, less certain is <u>how</u> this will be performed (e.g., digitizing existing paper charts), and <u>who</u> will do it.

One possible approach to producing large-scale ENCs has been proposed by cruise line shipping companies. They are willing to fund the cost of producing IHO S-57 ENC data for key harbours/ports that have been recently dredged/surveyed. Their interest is to ensure safety-of-navigation for their vessels. In turn, they are willing to turn this data over to the HO or port authority if it were to be issued as official ENCs. This cost would then be amortized over several years by offering a discount to those who funded the ENC production.

A practical approach to producing small-scale ENCs (1:1,00,000 scale) for the MACHC region is to base it on the INT Chart scheme. At the March 2003 meeting of the ECWG, the INT Chart scheme for the MACHC was agreed. Once the paper charts are produced, it would be a relatively easy to produce ENCs from them. This has been agreed to in principle.

Although some discussions have been held between regional HOs and the two European RENCs (e.g., IC-ENC and PRIMAR Stravanger), relatively little progress has been made toward the establishment of a RENC for the MACHC region. One possible stimulus it to have greater interaction with chart agents/distributors and regional cruise line shipping companies/ associations in regard to those ports and routes where there is currently a high demand for ENC data and services (e.g., updating).

For further information, please visit the MACHC-ECWG website: http://www.iho-cgmhc.org/

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# VI. NORTH INDIAN OCEAN HYDROGRAPHIC COMMISSION

#### VI.1 Response to WEND Letter 2/2003

1. Provide a prioritized list of shipping routes within your region needing ENC coverage. This list may be submitted graphically using charts/GIS or as a list of ports and/or waypoint routes.

A priotized list of shipping routes for the major ports of India is given below; however Member States are being requested to forward the same for their shipping routes.

1. Al Faw (Kuwait) – Okha	2. Al Faw – Mumbai
3. Al Faw – Colombo	4. Karachi – Mumbai
5. Mumbai – Colombo	6. Aden – Mumbai
7. Mombasa – Mumbai	8. Mumbai – Durban
9. Madras – Colombo	10. Madras – Rangoon
11. Madras – Chittagong	12. Madras – Kolcotta
13. Kolcotta – Rangoon	14. Madras – Singapore
15. Kolcotta – Singapore	16. Kolcotta – Freemantle
17. Aden – Colombo	18. Tuticorin – Colombo
19. Tuticorin - Kochi	

2. Provide a small scale ENC schema for your region with assignment of Producer Hydrographic Offices. The submission should delineate ENC Cell boundaries.

ENCs for two small scale Charts INT 7705 and INT 7706, for which India is producer nation, are available. The details are:

<u>Cell Name</u>	<u>Scale</u>	<u>Limits</u>	
INT7705a	3,500,000	10°20'00.96"N	43°09'57.60"E
		30°29'59.64"N	76°29'57.48"E

INT17706b	3,500,000	01°50'00.96"N	71°00'00.00"E
		22°46'27.84"N	99°00'00.00"E

3. Provide recommendations for bilateral or multi-lateral assistance projects that would increase ENC production, quality and consistency.

INHO is willing to share its experience of ENC production to other MS.We are also capable to advice technically on various issues of ENC quality, consistency and assist other MS for production & implementation of their ENCs.

4. Provide any Proposals from your Regional Commission for speeding up ENC production and ensuring ENC quality and consistency.

INHO proposes that for increasing production, quality and consistency of the ENCs, S-57 Edition 4.0 be introduced sometimes in 2008, so as to give S-57 Edition 3.1 more time to stabalize for producing coherent ENCs worldwide.

Rear Admiral Srinivasan India 15 December 2003

#### VI.2 Response to WEND Letter 3/2003

1. The following has been progressed by NIOHC on WEND matters in 2003.

(a) **<u>Third Meeting of NIOHC</u>**. All member states had given the progress on National ENC production, training, testing and distribution during the third meeting of NIOHC. Delegates from Bangladesh, Oman, Saudi Arabia, Seychelles and Sri Lanka had stated they are in the infant stage of ENC production and they will require support from other countries with technical expertise. The issue on "Provision of technical help/training by member states" who have the wherewithal, expertise and experience in ENC production was also discussed.

(b) NIOHC Circular 05/2003 on "Plan for ENC Production" was forwarded to all Member States as a follow up to WEND letter No. 2/2003. The progress made by member states on various issues pertaining to ENC is as follows: -

(i) <u>France</u>. Priority has been given to International Shipping in mainland France (75% of the goods and passengers traffic covered). Will share their future production between their overseas, their areas of international and historic responsibilities. Distribution (including E/R) is done via Primar Stavenger. France has not allowed SENC distribution due to reservation on the quality and integrity control of the ENC-SENC converters.

(ii) <u>India.</u> Produced 252 ENC, which are planned to be, distributed through C-Map, IC-ENC and through other distribution mechanisms. The priority for release of ENC to market has been based on the standard sea route areas

covering major ports. All quality assurance and updating of ENCDB will be done by NHO or through industry. In the future, NHO will have the capacity to produce about 8 to 10 ENCs per month and will update existing ENCDB regularly. India can assist other nations in the region with ENC production.

(iii) <u>Seychelles</u>: Have not started ENC production. No expertise is presently available.

(iv) <u>Sri Lanka</u>: Have not started ENC production. No expertise is presently available.

(v) <u>**Thailand**</u>, Thailand has produced 10 ENCs of small scale in Thai Waters. The sea trial of these ENCs is under process. Thailand has requested for some specific assistance on training on ENC production, updating, distribution and Hydrographic data management.

(vi) <u>UK.</u> 350 ENC produced out of which 220 are being distributed by IC-ENC. UKHO is currently in discussion with several nations regarding use of their data so as to publish ENC's in the area of the Red Sea and Gulf of Aden. Data capture is contracted out to a company in India (IIC). All quality assurance and updating is done by the UKHO. The UKHO has the capacity to produce about 20 ENCs per month and would be pleased to assist other nations in the region with the production of their ENCs.

2. The considerable experience gained by few Member States on ENC production, encryption and marketing is planned to be effectively utilized to assist other Member States of the commission, who need assistance in this regard. The methodology for implementing the same are being taken up at the next NIOHC meeting scheduled to be held from 24-25 March 2004.

Cdr TS Vasudevan NHO, India

# VII. ROPME SEA AREA HYDROGRAPHIC COMMISSION

# VII.1 Response to WEND Letter 2/2003

The following are some responses to WEND Letter 2/2003, dated 15 September 2003, concerning some questions about ENC's in different regions.

Only 3 countries, namely Iran, Pakistan and Saudi Arabia, have responded to the questionnaire in RSAHC region. Results are as follows:

Name of	<b>Prioritized List of</b>	Small scale ENC	Recommenda-	<b>Proposals from</b>
State &	Shipping Routes	scheme in your	tions for bilateral	your State to
date of	within your	region with	or multilateral	speed up ENC
response	region needing	assignment of	assistance	production.
	ENC coverage	producer	projects that	
		Hydrographic	would increase	
		Offices	ENC production,	
			quality and	
			consistency.	
I.R. of Iran	The priorities for	Iran has planned	In order to	In some
29 Dec.	ENC coverage	to transfer its	improve	circumstances, the
2003	will be the	national charts	producing	objectives of
	international	into ENC's to	Hydrographic	ENC's are not
	shipping routes for	cover most	data, bilateral &	clear enough, so
	the area of Shahib	international	multilateral	Iran recommends
	Rajaee Port, Imam	waters in Iranian	agreements will be	that a clarification
	Komaeini Port,	territorial sea.	considered with	of the objectives
	Khark Island,		the neighbouring	by IHO can speed
	Asalouye Port and		States.	up ENC
	Boushehr Port in			production by the
	the RSAHC			concerned States.
	region.			
Pakistan	ENC coverage is	For small scale	States of the	PN Hydrographic
7 Nov.	recommended for	charts, INT chart	region equipped	Department is
2003	the shipping routes	scheme can be	with ENC or	equipped with all
	originating from	taken as a	likely to acquire	the necessary
	the ports of coastal	reference Further,	the same in near	infrasctructure for
	States of the	Admiralty small	future, should	the publication of
	region, to and	scale charts of	extend their	charts. The ENC
	from Persian Gulf,	RSAHC area, may	facilities and OJT,	will be introduced
	Red Sea and	also be	etc to other States,	this year.
	Indian Ocean	considered. Each	either on bilateral	Thereafter, the
	through Gulf of	Hydrographic	basis or through	facilities should be
	Oman.	Offices of the	RSAHC. Funding	available to the
		region should	in this regard may	States of the
		produce ENC's of	be explored from	region, for
		its area including	organizations like	assistance in
		EEZ. For small-	GCC or ROPME	digital chart
		scale charts at	etc. Short training	production and
		1:500,000, a	courses on ENC	training.

		country of the	systems and	
		region may be	quality control.	
		assigned the	would prove	
		responsibility	useful	
		after mutual	userui.	
		agroomont		
Caral:	Dommom and	Intil now	For a long time	UV based
Saudi			For a long time,	UK-based
Arabia	Juball are the most	navigation in the	our waters have	company Gardline
15 Nov.	important of all.	Saudi Arabian	been left without	surveyed the area
2003	For other shipping	waters is directed	new hydrographic	and all data are
	routes in the	in accordance with	survey, with the	now with the
	RSAHC region,	the Admiralty and	exception of the	UKHO. They
	IMO should offer	NIMA charts.	approaches to Ras	promise to
	their advice		al Khafji that	produce new
	according to their		appears on BA	charts for the same
	follow up of the		chart No 3774.	area and we
	number of ships		UK-based	believe ENC
	using these routes		company Gardline	would also be easy
	to all ports and		surveyed the area	to do.
	they may give		and all data are	
	priority to that to		now with the	
	ensure the safety		UKHO. Our co-	
	of navigation in		operation with	
	the area.		<b>WEND</b> and	
			international chart	
			producers should	
			not mean that we	
			give up our legal	
			rights and royalty.	

Mr. Ghaderi Iran RSAHC Chairman