

IHB File No. S3/8152

CIRCULAR LETTER 37/1999
3 August 1999

4th WEND COMMITTEE MEETING
Sydney, Australia, 27-29 January 1999

Dear Sir,

The Summary Report of the above meeting is attached for your information. Also enclosed are a list of documents referred to at the meeting (Annex C), a list of participants (Annex D), and the Agenda (Annex E).

As a result of the 4th WEND Meeting, a list of actions to be done was established and is at Annex B. The Bureau is undertaking those tasks and actions delegated to it and Member States are requested to review this list for those actions requiring their attention.

The 5th WEND Meeting has been scheduled for 17-18 March 2000 at the IHB, Monaco, in conjunction with the Extraordinary International Hydrographic Conference which will be held on 20-24 March 2000. Member States are requested to check the Membership List attached (WEND/5/1C), and to advise the Bureau of any changes **by 1 November 1999**.

This Summary Report will be posted on the IHO Website (www.iho.shom.fr). All WEND documents, listed at Annex C are available in digital form from the IHB (info@ihb.mc).

IHB Circular Letter 12/1999 circulated a table and a chartlet showing an estimate of the status of S-57 data production by IHO Member States, as of March 1999. Comments were received from Australia, Belgium, Chile, Cuba, Denmark, Finland, India, Indonesia, Malaysia, Norway, Peru, Portugal, Singapore, Spain and USA (NIMA). They have been incorporated in the attached new version of the table and its associated chartlet, updated to June 1999. As mentioned in CL 12/1999, both items will be included in a future issue of the I.H. Bulletin and they will also be posted on the IHO Website.

On behalf of the Directing Committee
Yours sincerely,

Rear Admiral Neil GUY
Director

Encls. Summary Report of WEND/4 (English only)
WEND Membership List (English only)
Status of S-57 Data Production

4th WEND COMMITTEE MEETING Sydney, Australia, 27-29 January 1999

SUMMARY REPORT

- Notes:* 1) *The paragraph numbering is the same as in the abridged agenda (Annex E) unless otherwise specified.*
2) *A list of acronyms is provided at Annex A.*

1. OPENING AND ADMINISTRATIVE ARRANGEMENTS

- a) The following delegations from Member States attended:

Australia, Canada, Chile, China, Denmark, Finland, France, Germany, Greece, India, Indonesia, Italy, Japan, Korea (Republic of), Malaysia, New Zealand, Norway, Portugal, Singapore, Sweden, United Kingdom, United States of America.

- b) Dr. Peter EHLERS, Director of the BSH (Germany), was the Chairman.
c) RAdm Neil GUY represented the IHB, which acts as the WEND Secretariat.
d) Dr. Lee ALEXANDER, of the IEC, acted as Rapporteur.

Attachments

List of Acronyms	(Annex A)	
Action List	(Annex B)	
List of Documents	(Annex C)	(WEND/4/1A rev.3)
List of Participants	(Annex D)	(WEND/4/1B rev.2)
Abridged Agenda	(Annex E)	(WEND/4/2A rev.1)

Welcoming Address

The Welcoming Address was given by RAdm Chris RITCHIE, Maritime Commander of the Royal Australian Navy in which he also described the scope of the activities of the Australian Hydrographic Service. He then formally opened the Meeting. The WEND Chairman, Dr. EHLERS then thanked RAdm RITCHIE for his welcome and the Australian Hydrographic Office for all the arrangements that had been made for the Meeting.

The Chairman stated the objectives of the Meeting which were as follows:

- a) The Meeting had to address the urgent need for progress in the implementation of the WEND system.
b) It had to coordinate the activities of the HOs and harmonize the policies of RENCs. It was not a forum for the exchange of technical information.
c) The success of WEND would depend on the production of ENC's and the establishment of RENCs. To achieve this success the Meeting had to decide how to make progress, to analyze

problems of establishing a RENC and establish whether there were national interests that would make it difficult to achieve. This would involve international cooperation and coordination.

- d) The Meeting had to draw conclusions on how best to achieve these objectives.

Administrative Arrangements

Cdre Bob WILLIS (Chief Hydrographer of the Australian Hydrographic Service) detailed the arrangements for both the Meeting and the social events.

RAAdm GUY (IHB) referred delegates to the List of Documents (WEND/4/1A rev.2) which contained those documents received prior to the Meeting. This would be updated as documents were presented at the Meeting.

2. APPROVAL OF AGENDA

The Abridged and Annotated Agendas (WEND/4/2A rev.1 & 2B rev.2) were adopted.

3. MATTERS ARISING FROM MINUTES OF 3RD WEND MEETING

RAAdm GUY (IHB) reviewed the IHB Actions arising from the 3rd Meeting. (WEND/4/3B).

Mr. Doug BROWN (USA-NOAA) gave details of the US Hydrographic Conference to be held in Mobile, Alabama, USA, from 26-29 April 1999. Additional information is available at www.usahydrosoc.org. The Caribbean and Gulf of Mexico Hydrographic Commission ENC Working Group Meeting would follow this, at the same venue, 30 April-1 May. An IHO ENC Updating Workshop would follow from 3-4 May. Mr. Ricardo MONTANER (Chile) requested that as much notice be given of meetings as possible to facilitate national funding applications.

4. REVIEW OF THE LINKS WITH OTHER IHO COMMITTEES DEALING WITH ECDIS

RAAdm GUY (IHB) reviewed the links with other IHO Committees and Working Groups, such as CHRIS. (WEND/4/4A).

The position of RENCs within the WEND Committee proceedings was discussed but the matter was deferred for discussion under Agenda Item 11.

5. REPORT ON STATUS: ECDIS AND ENC STANDARDS/SPECIFICATIONS AND PLANS

RAAdm GUY reported on the status of IHO publications and in particular the French language versions of S-52 and S-57. (WEND/4/5A). Although progress had been made with the French translations of S-52 and its appendices the enormous task of translating S-57 into French could only be commenced when there was a suitable opportunity.

S-57

Dr. Chris DRINKWATER (UK) briefly reviewed WEND/4/5B and stressed that ENCs should not only be produced in the S-57 Ed. 3 format but they must also conform with the ENC Product Specification.

He reported that in order to permit the use of a small number of additional attribute values which certain nations had requested for ENC purposes, S-57 Ed. 3.1 will be published in November 1999

and formally adopted in November 2000. Mr. Frode KLEPSVIK (Norway) expressed concern over further changes to S-57 Ed. 3. Capt. B. R. RAO (India) asked about the impact of S-57 Ed. 3.1 on ECDIS and Dr. DRINKWATER stated that he had received confirmation from the IEC that S-57 ed. 3.1 will not cause problems for an ECDIS which had already been type approved. He also stressed that S-57 Ed. 3.1 will not contain any new information other than the new attribute values mentioned above.

RAdm GUY (IHB) raised the concern of system manufacturers that while claims were made that ENC's conformed to S-57 Ed. 3, there was incompatibility between some of the ENC's produced by different Member States. RAdm Alexander MARATOS (Greece) expressed concern over the negative image that this would give of ENC's. Mr. KLEPSVIK (Norway) asked for clarity on who would decide, and how, if an ENC conformed with the Product Specification.

The Chairman asked if any conclusions should be drawn on the consistency of ENC production and the need for a S-57 Ed. 3.1.

It was concluded that TSMAD would convene a meeting with Staff of the NE RENC (PRIMAR™) and software manufacturers to consider the approval by IHO of a suite of QA tools for ENC's. TSMAD would also consider a session of its meetings at which ENC problem solving issues would be discussed.

Action : TSMAD

Dr. ALEXANDER (IEC) reviewed the current status of the International Standard for ECDIS (WEND/4/5C) and IEC Test Standards for ECDIS. (WEND/4/5D rev 1)

ENC Test Data Sets

Dr. DRINKWATER explained the process whereby the IHO ENC Test data Set was produced and the additional steps taken to ensure IEC approval. Mr. KLEPSVIK was of the opinion that RENC's should develop their own ENC Test Data Sets. The Chairman drew attention to the importance of ECDIS Type approval for WEND.

S-52, Colours and Symbols, and the Presentation Library

Mr. Mike CASEY (Canada) reported on the ongoing sea-trials on Colours and Symbols taking place in Canada and on the C&SWG Meeting held in Hamburg, Germany, 14-15 December 1998.

Finnish Proposal on Rationalization of ENC Development.

Mr. Juha KORHONEN (Finland) gave notice of a proposal submitted to the Strategic Planning Working Group on the structure necessary to achieve the best results in ENC development. (WEND/4/5E)

It was agreed that, while WEND should take note of the proposal, it was a CHRIS matter.

Use of the term ENC

Mr. Horst HECHT (Germany) drew attention to the fact that only official data that complied with the ECDIS Performance Standard and the Product Specification contained in S-57 Ed. 3, could be referred to as "ENC".

The Meeting agreed that HOs should exercise care in using the term "ENC" when releasing data. It should be observed that only data complying strictly with the requirements set out in the definition for an ENC in the ECDIS Performance Standard should be referred to as an ENC. This implies that

the ENC should be 'official' and that it adhere fully to the relevant standards of the IHO, namely the Product Specification contained in the latest edition of S-57.

6. NATIONAL REPORTS ON THE PRODUCTION OF ENC/DNC/RNC AND PLANS

RAdm GUY (IHB) introduced the National Reports submitted to the 10th CHRIS Meeting, held in October 1998 and recommended that these be updated. (WEND/4/6A rev.1) This was agreed to.

Australia: Nothing additional to report.

Canada: Nothing additional to report.

Chile: Nothing additional to report.

China: Nothing additional to report.

Denmark: Mr. Ole BERG highlighted the need for consistency in the QC/QA tools available. This was confirmed by remarks from Germany, Portugal and the UK. Dr. DRINKWATER (UK) announced that TSMAD would investigate the matter in conjunction with QC/QA software companies.

Finland: The issuing of ENCs would commence in June 1999.

France: Will issue ENCs shortly but will not be able to provide an update service at this stage.

Germany: Updating problems are now resolved and ER updates have been resumed. Mr. HECHT advised the Meeting of the progress in electronic chart river navigation and the production of a digital waterways chart.

Greece: ENC production to start early in 1999.

India: 60 ENCs now produced and the establishment of a RENC in the region is now necessary.

Italy: Nothing additional to report.

Japan: Brochures now available on ENC production and other information.

Korea (Rep) 35 ENCs to be produced during 1998-1999.

Malaysia: Report submitted to the Meeting (WEND/4/6B)

New Zealand: Rasterization of charts to commence 1 July 1999.

Norway: Nothing additional to add except comments on the difficulty in producing ENCs that complied with Product Specification.

Portugal: Will produce first ENC cell in March 1999.

Singapore: Trials on ENC updating from terrestrial stations to be done in 1999.

Sweden: Nothing additional to report.

UK: Trials on many ENC's are in hand and the issue of ENC updates relating to the relevant NTM is being investigated.

USA: The USA is committed to ENC production but progress is hampered by budget constraints and by the fact that the USA is not on the metric system. In conjunction with a system developer, the issue of automatic conversion to metric is being investigated.

Comments:

Updating:

Mr. HECHT queried the justification in claiming that ENC's were produced when no ENC updating facility existed. In response to a query from Mr. Adam KERR (UK) as to who was responsible for updating, Mr. HECHT stated that this must be a HO's responsibility. Capt. RAO (India) pointed out that NTM via NAVTEX could be used to update ENC's daily.

Production Priorities:

Mr. BERG (Denmark) stated that paper charts were still the major concern of HOs and would probably remain so until ENC's became a carriage requirement. Mr. HECHT queried how ENC's could become a carriage requirement if they were not available in adequate numbers.

RAAdm John CLARKE (UK) pointed out that ENC production should be directed to the needs of commercial shipping and that for the first time HOs were being realistic in regard to the problems of ENC production. Mr. John SPITTAL (New Zealand) agreed and added that the costs of ENC production and updates had been seriously underestimated. Mr. Parry OEI (Singapore) recommended the "Open ECDIS Forum" as a vehicle for exchange of information and ideas.

Quality Control and Assurance:

Mr. KERR (UK) stated that it was critical that ENC be adequately quality controlled (QC) and quality assured (QA) and updated.

Mr. SPITTAL (New Zealand) queried whether the requirements of the user had been fully investigated.

After further discussion the Chairman summarized, and the meeting agreed to the following:

- a) All efforts should be directed to ENC production.*
- b) More discussions on the problems and possible solutions should take place.*
- c) Mechanisms on what can and what cannot work should be found.*
- d) WEND should focus on solutions and not only the problems.*
- e) An ENC updating service should be as frequent as the current NTM services.*
- f) Methods must be found to improve the production rate of ENC's.*
- g) The cooperation between Member States within Regional Commissions should be encouraged to improve development and production.*

*Action : All***7. REPORT ON TRIALS AND GENERAL PROGRESS ON ENC DISTRIBUTION AND UPDATING TECHNOLOGY**a) SHARED Demonstration Programme

Mr. OEI (Singapore) reported on the Programme, which is the practical use of raster and vector charts in a hybrid electronic chart system. The 2nd SHARED Meeting, held in Singapore in October 1998 agreed to extend the Programme to include 13 Member States.

b) BAFEGIS Project

Mr. HECHT (Germany) briefly updated the Report presented to the 3rd WEND meeting in Goa. Some experiences reported by the mariners involved in the Project were as follows:

- i) One of the key benefits was for harbour navigation.
- ii) Since SENC data is shown at the largest scale available, source material should be used in preference to the digitizing of paper charts.
- iii) There is interest in extending the project to other Baltic Sea areas.
- iv) ECDIS equipment fitted to the vessels lag behind in being capable of handling update messages.

c) ECHO Project

Mr. Asbjørn KYRKJEEIDE (Norway) gave a brief presentation on this Project to provide and update ENC data. The Project was completed in 1998 and, as a result, the ECC (Norway) would provide internet-based services (i.e. PRIMAR™ operations and services). Further information was available on the Internet at www.statkart.no/ecc/frecho.htm

Comments:

In reply to a question, Mr. OEI (Singapore) stated that although the SHARED Programme was capable of providing RENC services, it would depend on agreement by Member States in the region.

RAdm GUY (IHB) was of the opinion that while it was not the original intention, the SHARED Programme offered an opportunity for Member States, outside of Europe, to develop the production and distribution of ENCs.

The Meeting agreed that these projects and programmes reported on indicated ways to overcome specific problems related to ENCs and ECDIS.

8. REGIONAL REPORTS ON PROGRESS AND PLANS OF RENCs AND PROJECTS

Mediterranean and Black Seas RENC (WEND/3/7C)

RAdm MARATOS (Greece) reported on the possible formation of a RENC in the Black Sea and questioned the relationship between this RENC and the NE RENC. This gave rise to the question as to whether a Member State could be a member of more than one RENC in the same area. RAdm GUY (IHB) and Mr. FLATHEN (Norway), in his capacity as Co-Chairman of the NE RENC, felt that there should not be a problem with dual membership. RAdm CLARKE (UK) and Mr. JAKOBSEN (Denmark) agreed. Mr. KLEPSVIK (Norway) identified this as being two issues

- a) HO membership in more than one RENC
- b) A HO providing ENC data for the same geographic area to different RENCs creating overlapping areas.

After further discussion the Chairman summarized and the Meeting agreed that RENCs should not cover overlapping areas and HOs should not be members of different RENCs for the same area.

Action : All

North European RENC (WEND/4/8A)

Mr. KYRKJEEIDE (General Manager of PRIMAR) in his capacity as Manager of PRIMAR™, the organisation and service for the European RENC, reported on its creation, objectives and future plans. Ten HOs are participating at present and the service would be based in Stavanger, Norway, and staffed by 19 persons from the UKHO and ECC/SK. He stated that the establishment of the service had proved both costly and time consuming. PRIMAR™ is a non-profit organization owned by the UK and Norway. The budget for 1999 would be \$3.8 million (USA). A number of objectives and dates were given.

- a) 956 ENC cells are planned for 1999 (61 supplied as of 20 January 1999).
- b) A graphical catalogue of available ENC cells is being developed.
- c) The Trial Service would commence, free of charge, on 1 February 1999.
- d) Official Service is planned to begin operation on 1 July 1999.
- e) ENC pricing, service charges, and a security scheme are under consideration and will be announced before the official launch in June 1999.

- f) In addition to distributing data to cooperating HOs, the service to the end-users will be made available through authorized distributors and licensed service providers.

Comments and Questions

Mr. Ronald FURNESS (Australia) requested clarification on PRIMAR™, as an organization, in terms of “free and open” competition, non-exclusivity, and monopolistic concerns. Cdre WILLIS (Australia) asked how non-European States could join this RENC. RAdm CLARKE (UK), in his capacity as Co-Chairman of the NE RENC, stated that, in accordance with the Helsinki Accord, PRIMAR™ is a non-profit, governmental mechanism properly constituted within Europe for the provision of official ENC data. He also stated that PRIMAR™ was investigating how it could relate to, and cooperate with, other HOs and RENCs.

East Asia

Mr. Kunio YASHIMA (Japan) reported on the progress of this RENC as follows:

The East Asian RENC would probably be a “Virtual” RENC without a centralized facility but comprising a network of ENC databases. He reported on the progress of ENC production and services in the region of the possible RENC and stated that Japan would submit a draft plan on the establishment of a “Virtual” RENC to the next East Asian Hydrographic Commission Meeting in Beijing during mid-1999. He also commented on additional Member States in the region possibly participating in the SHARED Programme and the Marine Electronic Highway (MEH) Project.

North America

Mr. CASEY reported that the RENC concept had been discussed at Annual Canada-USA Hydrographic Commission Meetings. There were, however, no current plans to form a North American RENC. Mr. BROWN (USA) added that although there were differences in the application of cost-recovery and copyright between the two States, long-standing cooperation existed, which included similar business models and information philosophies. An example was that NDI with the CHS and MapTech with NOAA were being used for ENC and RNC distribution and servicing.

Mr. HECHT (Germany), Mr. CASEY (Canada) and Capt. David MACFARLAND (USA) were of the opinion that the North American arrangement fell within the WEND concept. Mr. KERR (UK) noted however that it was not a good example of a RENC.

Action : All

Comments and Questions

In response to questions, RAdm CLARKE (UK) stated that Canada would have to decide whether it wished to have a dealer relationship between CHS/NDI and PRIMAR™, and Capt. MACFARLAND (USA) indicated that it would be prepared to distribute its ENC data through PRIMAR™.

Baltic Sea

As there was no representative from the Baltic RECC present capable of reporting, the matter was adjourned but Mr. ASTERMO (Sweden), in his capacity as Chairman of the Baltic Sea Hydrographic Commission, commented that the position in regard to a Baltic Sea RENC was somewhat unclear.

Australia and New Zealand

Mr. FURNESS (Australia) reported the following:

- a) Australia and New Zealand have agreed to take the leadership role in the establishment of an Australasian RENC.
- b) They will encourage other members of the South West Pacific Hydrographic Commission to participate.
- c) After consideration, they may look to a closer relationship with those Member States participating in the SHARED Programme.
- d) Any Member State that wishes to participate, may advise them as soon as they wish but preferably before mid-February 1999.
- e) The first meeting is tentatively planned for late February or early March 1999 and the IHB will be advised of the details.
- f) Observers are welcome and future meetings will probably alternate between Australia and New Zealand.

Action : Australia & New Zealand

Other Regions

- a) Capt RAO (India) requested advice and possible assistance to enable the formation of a RENC in the Indian Ocean.

Comments:

A number of tasks for the IHB were identified:

- i) The IHB should assess the assistance needed in a region [Mr. OEI (Singapore)].*
- ii) The IHB should promote the establishment of RENCs [Mr. Peter JAKOBSEN (Denmark)].*

- iii) *The IHO, in conjunction with the IMO is to identify high density shipping routes to facilitate the planning of priorities for ENC production.*

Action : IHB

- b) There are three factors related to the establishment of a RENC:
- i) The proximity of chart coverage by the HOs.
 - ii) Government policies relating to the role of distributors and the private sector.
 - iii) The extent to which technology can support the integration and the distribution of the ENCs of several countries.

Role of the IHB

The future role of the IHB in the production and distribution of ENCs and the development of RENCs within the WEND Principle was discussed. RAdm GUY (IHB) requested that the Meeting give consideration to guidelines for the IHB to follow in the promotion of ENCs, ECDIS and the formation of RENCs. In addition to the two items raised in the previous Agenda Item, the following was proposed.

Mr. BERG (Denmark) proposed that a Handbook for the establishment of a RENC be prepared.

RAdm CLARKE (UK), Mr. HECHT (Germany) and Mr. KLEPSVIK (Norway) disagreed and felt that it would be better for aspirant RENC members to visit an established RENC such as PRIMAR™.

After further discussion, the Chairman summarised and the Meeting agreed as follows:

- i) *The IHB should complete the analysis of ENC production and try to identify and then to encourage States in a region to cooperate in ENC distribution by forming a RENC or to form a RENC or to distribute ENCs via an established RENC, all in accordance with the WEND Principles.*

Action : IHB

- ii) *Information should be shared between those RENCs already established and those hydrographic services that have plans.*

Action : All

The Role of a RENC

Mr. Knut FLÄTHEN (Norway) recommended that the concept of ‘one-stop shopping’, within the WEND concept, should be promoted within the maritime user community.

Mr. KERR (UK) recommended that the Meeting consider the requirements of QC/QA tools to be able to provide users with a composite set of data coupled with updating and other services.

RAdm CLARKE (UK) pointed out that unless the IHO agreed on all the ENC related standards, the future existence of the IHO was in question.

9. DISCUSSION ON FINANCIAL POLICIES, BILATERAL ARRANGEMENTS AND OTHER MATTERS RELATED TO REIMBURSEMENT FOR PROVISION OF DATA

EU/TENT-T Project (WEND/3/7D)

Mr. David MCPHERSON (UK) reported briefly on this project and the mechanism of financial assistance for ENC production and other potential sources of funding.

Reimbursement between RENCs and Participating HOs

MR. KYRKJEEIDE (Norway) commented that reimbursement was dependent on the provision of EN and ER.

Pricing for ENC Data

Mr. CASEY (Canada) explained the Canadian pricing scheme, which was a matter of public record. The cost of an ENC was 50\$ (USA) per year. This cost was derived after an analysis based on a distribution service (basic operating threshold) and the products assessed against potential sales over the next four years.

Discounts would be considered based on sales and margins. Some users were satisfied with the arrangement while others were not. Coupled with the price dissatisfaction were complaints over apparent lack of user-friendliness of the Colours and Symbols Presentation Library. This appears to be the major objection as the display is not attractive to the mariner.

The continued support of NTX data would be sub-contracted for one year as it was not possible for the CHS to support both NTX and S-57 Ed. 3.

Mr. KYRKJEEIDE (Norway) explained the pricing system within PRIMAR™ which was based on three things:

- a) A registration Fee.
- b) The price per ENC.
- c) An updating service.

The level of pricing would be finalized by June 1999 and it would be based on a cell size equivalent to one nautical chart. Mr. HECHT (Germany) felt that more information on pricing should be provided by PRIMAR™ during the Meeting.

The Meeting concluded that that this was not the appropriate time to deal with pricing harmonization policy.

10. EXAMINATION OF CONCEPTUAL MODEL FOR WEND. OPTIONS FOR ORGANIZING A WORLD WIDE DATABASE

Virtual RENC (WEND/4/10A)

Mr. YASHIMA (Japan) summarized this concept in the East Asian context:

- a) There already existed cooperation between Indonesia, Japan, Malaysia and Singapore on ENC production and distribution for the Straits of Malacca and Singapore.
- b) The basis for the establishment of a "virtual" RENC would be the distribution of ENCs through a network, for the participating HOs.

RAdm Mohd RASIP (Malaysia) further explained that the ENC databases held by the various HOs would be networked and an official distributor and agents appointed. This is under consideration at present. Updating is also under consideration but would ultimately be the responsibility of the particular HO.

WEND input into IHO Strategy

As two of the three outstanding items on the Strategic Planning Working Group Agenda, increased responsibilities of regional bodies and relationships with the private sector, appeared on the WEND Agenda, RAdm GUY (IHB) was requested to relay the feelings of the Meeting on these issues to the SPWG.

Action : IHB

11. PROPOSAL FOR THE IMPLEMENTATION OF RENCs

a) Security System (WEND/4/11A)

Mr. CASEY (Canada) reported on the work of the TAWG in regard to encryption of ENCs. He stated that there were both regulatory and policy implications to consider.

In addition to the paper presented, additional information could be found on the Open ECDIS Forum at: www.openecdis.com.

In the discussion that followed, Mr. KLEPSVIK (Norway) stated that encryption should not interfere with the basic requirement of safety of navigation. Mr. HECHT (Germany) further noted that it was the objective of the TAWG to recommend an encryption scheme for the IHO and that they complete their work before any encryption scheme was put in place. Mr. KYRKJEEIDE (Norway) and RAdm CLARKE (UK) both stated that it was the intention of PRIMAR™ to introduce a security system for their ENCs from 1 July 1999.

The Chairman summarized and the Meeting agreed that total termination was not advisable, in the event of contractual obligations not being met, and the safety of the user should be considered when acting although there was wide agreement that some action had to be taken against users who refused to renew their license.

Action : All

b) Participation of RENCs in WEND Meetings

After discussion, the Meeting agreed that RENC representatives should participate in WEND Meetings as observers.

Action : IHB

c) Participation of Regional Commissions in WEND Meetings

After discussion, the Meeting agreed that Regional Hydrographic Commissions should be requested to participate in WEND Meetings and be represented by at least one member of the Commission.

Action : IHB

12. INTERIM MEASURES TO PROVIDE DATA IN THE ABSENCE OF S-57 DATA

Referring to WEND/4/12A, RAdm GUY (IHB) reviewed the use of raster and other data as a “dual-fuel” option in ECDIS equipment as an interim solution for the lack of adequate ENC coverage. Notice was given to the Meeting of the new IHO Publication S-61, Product Specification for RNCs. Capt. Corrado FIORI and LCdr. Rosario LA PIRA (Italy) advised the Meeting of their efforts to clarify the Italian proposal to the NAV 45 Subcommittee Meeting of IMO in regard to "official" and "approved" data in order to achieve the aim of the proposal, that is to allow commercial companies to derive legal navigational recognized products from the official data, targeted to satisfy the needs of different customers. In particular the private company could act as a "service provider" for:

- a) official data issued by an HO, or on the authority of an HO,
- b) additional value-added data prepared by the company and authorized by the HO.

This was welcomed by the meeting.

13. RELATIONS WITH THE PRIVATE INDUSTRY

RAdm GUY (IHB) explained the ongoing relations with the private industry (WEND/4/13A) and sought clarification on the Meetings attitude to future relationships. Mr. FURNESS (Australia) accepted the need for these relationships to continue but Mr. MONTANER (Chile) cautioned against any perception that these relationships may indicate favouritism.

The Meeting agreed that the IHB should not show favouritism towards any private company.

Action : IHB

14. CO-OPERATION WITH OTHER INTERNATIONAL BODIES

Referring to WEND/4/14A, RAdm GUY (IHB) advised the Meeting of the ongoing relationships with international organisations such as IALA, IMO, FIG, and IAPH.

South East Asia Marine Electronic Highway

Dr. ALEXANDER (IEC) briefly explained the purpose and scope of this project. (WEND/4/14B & WEND/4/14B add 1)

Mr. KERR (UK) expressed concern that the profit margin anticipated in ENC production and services might not be of sufficient interest to private entrepreneurs. RAdm GUY (IHB) expressed the view that clarity is needed as to how exactly the SE Asia Project, for example, is to succeed and what role the HOs would have. RAdm RASIP (Malaysia) believes that the Project has merits although there are some concerns. Mr. KERR stated that the matter should be pursued and that possible financial benefits to the IHO should be investigated. It was confirmed that there would be cooperation between this Project and the proposed East Asian RENC. Mr. OEI (Singapore) remarked that the Project could be regarded as a possible source of funding for ENC producers in the region of the proposed MEH.

The Meeting agreed that the IHB should intensify their contact with the MEH Project and thoroughly monitor developments concerning marine electronic highway activities.

Action : IHB

15. FORMAT OF WEND COMMITTEE MEETINGS

Referring to WEND/4/15A, Mr. HECHT (Germany) proposed that future WEND meetings should precede an ENC technological meeting, forum or conference. This would enable discussions and cooperation on related matters to benefit both HOs and Industry.

After discussion the Chairman summarized and the Meeting agreed that WEND meetings should preferably be held in conjunction with other ECDIS related meetings and conferences and that it would be beneficial to include a workshop or symposium, including private industry.

Actions : IHB & Chairman

16. ANY OTHER BUSINESS

In response to a request from the Chairman, RAdm GUY (IHB) briefed the Meeting on the status of the Strategic Planning Working Group activities and in particular the possibility of holding an Interim IH Conference in 2000.

The Meeting felt that WEND should report to this Conference, if it is held, and that Member States should submit WEND related proposals for inclusion in such a report.

Actions : IHB & Chairman

17. SUMMARY OF ACTION ITEMS IDENTIFIED DURING THE MEETING

The Meeting reviewed all agreed action items which have been summarized at Annex B.

18. DATE AND PLACE OF NEXT MEETING

Taking into consideration the benefits of holding meetings in the various regions the venue for a WEND meeting would be influenced by whether there is to be an Interim Conference.

The Meeting agreed that if there is to be an Interim Conference, a WEND meeting should be held at that time in Monaco during March 2000, and that a report should also be submitted to the Conference. If there was not to be a Conference then the IHB is to investigate a suitable venue in South America for meeting during January/February 2000 and, failing that, the meeting would be held in Stavanger, Norway, in May.

Action : IHB

LIST OF ACRONYMS

BSH	Bundesamt für Seeschifffahrt und Hydrographie
CHS	Canadian Hydrographic Service
CHRIS	Committee on Hydrographic Requirements for Information Systems (IHO)
C&SMWG	Colour and Symbol Maintenance Working Group (IHO)
ECC	Electronic Chart Centre (Norway)
ECDIS	Electronic Chart Display and Information System
ECHO	European Chart Hub Organization (European Union)
EN	ENC New, i.e. ENC base data
ENC	Electronic Navigational Chart
ER	ENC Revision, i.e. ENC update or NtM data
EU	European Union
FIG	Fédération Internationale des Géomètres
HO	Hydrographic Office
IALA	International Association of Lighthouse Authorities
IAPH	International Association of Ports and Harbours
IEC	International Electrotechnical Commission
IHB	International Hydrographic Bureau
IHO	International Hydrographic Organization
IMO	International Maritime Organization
MEH	Marine Electronic Highway
NAV	Sub-committee on Navigation (IMO)
NAVTEX	Navigational Telex
NDI	Nautical Data International (Canada)
NHS	Norwegian Hydrographic Service

NOAA	National Oceanic and Atmospheric Administration (USA)
NTM	Notice to Mariner
OEF	Open ECDIS Forum
QA	Quality Assurance
QC	Quality Control
RENC	Regional ENC Coordinating Centre
RNC	Raster Navigational Chart
SENC	System ENC
SHARED	Singapore Hong Kong Admiralty Raster and ENC Demonstration
SPWG	Strategic Planning Working Group (IHO)
TAWG	Technology Assessment Working Group (IHO)
TEN-T	Trans-European Network - Transport (European Union)
TSMAD	Transfer Standard Maintenance and Application Development Working Group (IHO)
UKHO	United Kingdom Hydrographic Office
WEND	Worldwide Electronic Navigational Chart Data Base (IHO)

**4th WEND COMMITTEE MEETING
Sydney, Australia, 27_29 January 1999**

LIST OF ACTION ITEMS

Agenda item	Subject	Status	Comments	Action by
5	Recommended IHO QA Tools	In hand	TSMAD is requested to convene a meeting of NE RENC (PRIMAR™) staff and software manufacturers to recommend a suite of IHO approved QA tools	TSMAD
6	ENC production	On going	All efforts should be directed to: a) ENC production. b) More discussions on the problems and possible solutions in ENC production. c) Mechanisms that are workable should be identified. d) WEND should focus on solutions and not only problems. e) ENC updating service to be as frequent as current NTM service. f) Methods to improve ENC production site to be found. g) Cooperation between Member States in Regional Hydrographic Commissions should be encouraged to comprise ENC development and production.	All
8	RENC Membership	IHB to advise Member States	a) RENCs should not cover overlapping charting areas and HO's should not be members of different RENC's for the same area.	All
8	RENC plans and projects	On going	a) Assess assistance needed to improve ENC production.	All
		On going	b) Promote the establishment of RENC's.	All
		Awaiting IMO response	c) Establish with the IMO the areas that have high density shipping routes to facilitate ENC production planning.	IHB
8 (ctd)		Attached to WEND letter as an annexure	d) Complete ENC Production analysis and distribute results to encourage ENC production.	IHB

Agenda item	Subject	Status	Comments	Action by
	Exchange of RENC information	On going	e) RENC information should be shared by established RENCs with RENCs that are being developed.	All
11	Encryption Application Attendance to WEND Meetings	On going IHB to advise	a) In the event of ENC contractual obligations not being met by a user, the service should not be terminated in a manner that would be a hazard to the safety of navigation, although some action has to be taken against users who refuse to renew their license. b) i) RENC representatives should be encouraged to attend WEND Meetings as observers. ii) Regional Hydrographic Commissions should be encouraged to participate in WEND Meetings and be represented by at least one Member State.	All IHB
13		On going	Cooperate with private companies in an appropriate manner.	IHB
14		IHB to attend Singapore Conf., 14-15 October 1999	Intensify contact with MEH projects and monitor development.	IHB
15	Venue and times of WEND Meetings	In hand	WEND Meetings should be organized at the same time as other ECDIS related Meetings and Conferences.	Chairman WEND & IHB
16	Interim Conference	In hand	Should an Interim IH Conference be held during March 2000, a WEND Report should be submitted to it and Member States should submit WEND related proposals to the WEND Chairman.	Chairman WEND & IHB
17	Date and Place of next Meeting	In hand	a) Should an Interim IH Conference be held, WEND should meet immediately before or after the Conference. b) Should there be no Conference, IHB is to investigate a venue in South America for a meeting during January/February 2000. c) Should this not be possible, a Meeting is to be organized in Stavanger (Norway) during January/February 2000.	Chairman WEND & IHB

LIST OF DOCUMENTS

WEND/4/1A rev.3	List of Documents
WEND/4/1B rev.2	List of Participants
WEND/4/1C rev.3	Membership of WEND
WEND/4/2A rev.1	Abridged Agenda
WEND/4/2B rev.2	Annotated Agenda
WEND/4/3A	Summary Report of the 3 rd WEND Committee Meeting
WEND/4/3B	IHB Actions (to WEND/4/3A, Annex A)
WEND/4/3C	Terms of Reference for the WEND Committee
WEND/4/4A	Summary Report of the 10 th CHRIS Meeting
WEND/4/5A	Status of IHO Publications on ECDIS
WEND/4/5B	S-57 (Ed 3.0) and the ENC Product Specification
WEND/4/5C	International Standard for ECDIS : Current Status (January 1999)
WEND/4/5D rev.1	IEC Test Standards for ECDIS : Current Status (January 1999)
WEND/4/5E	Finnish Proposal for the Re-arrangement of the Standardization Works within the IHO CHRIS Committee
WEND/4/6A rev.1	Worldwide Production of Electronic Chart Data
WEND/4/6B	ENC Development in Malaysia
WEND/3/7C	Mediterranean and Black Seas RENC
WEND/3/7D	Status report on EU/TEN-T Project
WEND/4/8A	Status Report on North European RENC "European ENC Coordinating Centre - PRIMAR, Official ENC Service"
WEND/4/10A	Virtual RENC Concept
WEND/4/11A	TAWG Report on "Encryption and ENCs - The Technology and Policy issues"
WEND/4/12A	Interim Measures to Provide Data in the absence of S-57 Data
WEND/4/13A	Relations with the private industry
WEND/4/14A	Cooperation with other international bodies
WEND/4/14B	South East Asia Marine Electronic Highway
WEND/4/14B add.1	South East Asia Marine Electronic Highway (<i>Update</i>)
WEND/4/15A	Format of WEND Committee Meetings

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ABRIDGED AGENDA

1. Opening and administrative arrangements
 2. Approval of agenda
 3. Matters arising from minutes of 3rd WEND Meeting
 4. Review of the links with other IHO committees (e.g. CHRIS or HGE) dealing with ECDIS
 5. Report on status: ECDIS and ENC standards/specifications and plans
 6. National reports on production of ENC/DNC/RNC and plans
 7. Report on trials and general progress on ENC distribution and updating technology
 8. Regional reports on progress and plans of RENCs and projects
 9. Discussion on financial policies, bilateral arrangements and others matters related to reimbursement for provision of data
 10. Examination of conceptual model for WEND. Options for organizing a worldwide database
 11. Proposals for the implementation of RENCs
 12. Interim measures to provide data in the absence of S-57 data
 13. Relations with the private industry
 14. Co-operation with other international bodies
 15. Format of WEND Committee Meetings
 16. Any other business
 17. Summary of actions items identified during meeting
 18. Date and place of next meeting
-

**5th WEND COMMITTEE MEETING
IHB, Monaco, 17-18 March 2000**

MEMBERSHIP OF WEND

** = **Chairman**

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STATUS OF S-57 DATA PRODUCTION BY IHO MEMBER STATES
(Estimates - June 1999)

Note: Figures in the table below indicate the number of equivalent paper charts, as the terms "ENC" and "ENC Cell" appear to be differently interpreted as regards their geographical coverage.

Country	Ed.3	Ver.2	Nat.	Upd.	Com.
Australia	32 ⁽¹⁾	0	0	N ⁽⁸⁾	N
Belgium	1 ⁽¹⁾	0	8 ⁽²⁾	N ⁽⁸⁾	N
Brazil	3 ⁽¹⁾	0	0	N ⁽⁸⁾	N ⁽⁸⁾
Canada	180	0	655 ⁽²⁾	Y	Y
Chile	38 ⁽¹⁾	0	75 ⁽²⁾	N ⁽⁸⁾	N ⁽⁸⁾
China	20 ⁽¹⁾	0	20	Y	N
Cuba	5	0	0	N	N
Denmark	21	0	60 ⁽²⁾	Y ⁽⁷⁾	Y ⁽⁷⁾
Estonia	5 ⁽¹⁾	78	0	Y	N
Finland	5 ⁽¹⁾	0	35 ⁽⁴⁾	Y ⁽⁷⁾	N
France	27	0	202	Y ⁽⁷⁾	Y ⁽⁷⁾
Germany	12	0	0	Y	Y ⁽⁷⁾
Greece	Project to start 1999				
India	25 ⁽¹⁾	0	0	Y	N
Indonesia ⁽⁹⁾	0	0	20 ⁽²⁾	N	N
Italy	56 ⁽¹⁾	0	0	Y	N
Japan ⁽⁹⁾	151	0	0	Y	Y
Korea (Rep.)	200	0	0	Y	Y
Malaysia ⁽⁹⁾	-	-	-	-	-
New Zealand	Project to start 1999				
Norway (NHS)	10	26	85 ⁽³⁾	N	Y ⁽⁷⁾
Peru	85 ⁽¹⁾	0	85 ⁽²⁾	Y	N
Philippines	Project to start 1999				
Portugal	1	0	0	Y	Y ⁽⁷⁾
Russia	2000	1600	0	Y	Y

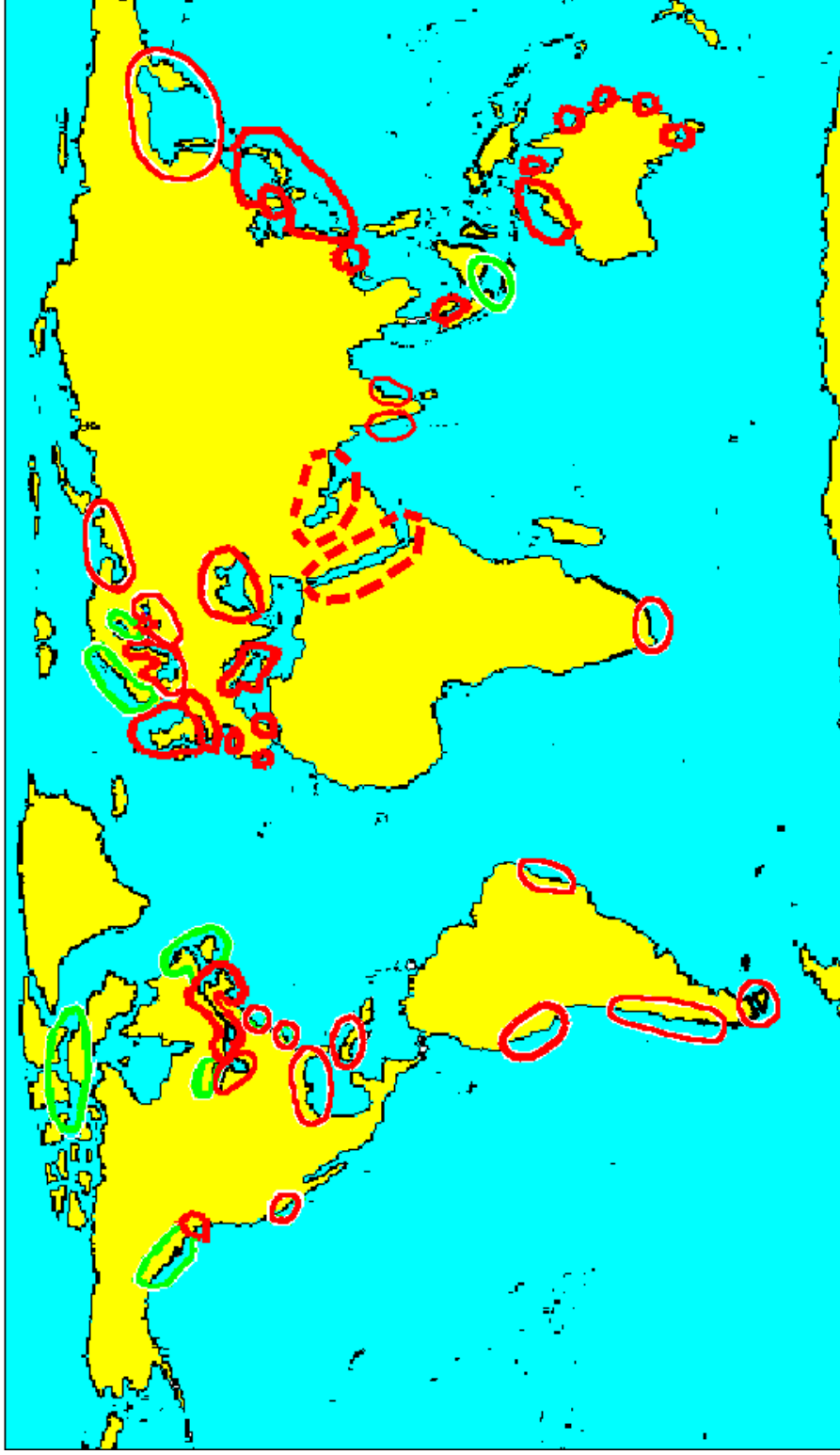
Country	Ed.3	Ver.2	Nat.	Upd.	Com.
Singapore ⁽⁹⁾	15	0	0	Y	Y
South Africa	8 ⁽¹⁾	0	0	Y	Y
Spain ⁽¹⁰⁾	4	-	50 ⁽⁶⁾	-	-
Sweden	16 ⁽¹⁾	0	0	N	N
Turkey	2 ⁽¹⁾	0	27 ⁽²⁾	Y	N
Ukraine	10 ⁽¹⁾	0	0	N	N
UK	60	0	0	Y	Y ⁽⁷⁾
USA (NIMA)	0	0	4000 ⁽⁵⁾	N ⁽¹¹⁾	N ⁽¹¹⁾
USA (NOAA)	200 ⁽¹⁾	0	0	Y	N
Latvia*	6 ⁽¹⁾	0	0	N	N

- IHO non-Member State

- (1) Trial data, (quality controlled, not yet on the market)
- (2) NTX format
- (3) NSKV format
- (4) FINGIS format
- (5) DNC in VPF format

- (6) OPT format
- (7) Through PRIMAR (European RENC)
- (8) Matter currently in discussion
- (9) Indonesia, Japan, Malaysia and Singapore have jointly produced 6 ENCs in Malacca and Singapore Straits
- (10) Distribution through PRIMAR envisaged
- (11) Planned 2nd half 1999

S-57 DATA PRODUCTION - June 1999



— Edition 3

— Version 2 or National format (Plus DNC worldwide coverage in VPF format by USA-NIMA)

- - - Envisaged

