Dossier du BHI N° S3/8152

LETTRE CIRCULAIRE 23/2000
15 juin 2000

5e REUNION DU COMITE WEND
BHI, Monaco, les 16 et 17 mars 2000

RAPPORT SUCCINCT

Réf : Lettre circulaire du BHI 14/2000 en date du 30 mars 2000

Monsieur,

Vous trouverez joint en annexe, à titre d'information, le rapport succinct de la réunion susmentionnée. Celui-ci comprend la liste des documents soumis à la réunion (Annexe B), la liste des participants (Annexe C) ainsi que l'ordre du jour (Annexe D).

La liste des points nécessitant des actions, laquelle a été établie lors de cette réunion, figure dans l'Annexe E à ce rapport. La situation actuelle est précisée dans la troisième colonne. Le Bureau entreprendra l'exécution des tâches et actions qui lui incombent et il est demandé aux Etats membres d'examiner cette liste qui leur indiquera les points nécessitant leur attention.

Le Comité WEND a notamment recommandé à la 2e Conférence hydrographique internationale extraordinaire de prendre diverses décisions visant à améliorer la mise en oeuvre du concept WEND. La Conférence a décidé que les Etats membres devaient approuver par lettre circulaire les actions recommandées, et ceci a fait l'objet de la LC 14/2000 dans laquelle il était demandé aux Etats membres d'approuver les points suivants :

- Une Résolution de la WEND visant à promouvoir la mise en oeuvre du système WEND ;
- L'inclusion dans les "Principes de la WEND", d'un alinéa supplémentaire traitant du chiffrement des ENC, afin de ne pas mettre en péril la sécurité des navires;
- Un amendement au mandat du Comité WEND et l'ajout d'un alinéa supplémentaire dans les Principes de la WEND, en vue d'harmoniser les politiques des RENC et de fournir des services ENC cohérents aux utilisateurs;
- Une recommandation du Comité WEND visant à ce que les Commissions hydrographiques régionales ou les Commissions cartographiques internationales contribuent à promouvoir la production d'ENC.

Il est rappelé aux Etats membres que les réponses à la LC 14/2000 doivent parvenir au Bureau **avant le 30 juin 2000**. Au 15 juin, 15 réponses avaient été reçues des pays suivants : Argentine, Canada, Chili, Finlande, France, Allemagne, Grèce, Islande, Inde, Malaisie, Maroc, Portugal, Espagne, Suède et Turquie. Bien que l'Argentine et l'Inde aient formulé des objections sur certains points du questionnaire, l'ensemble des réponses reçues sont favorables aux propositions du Comité WEND.

Dans le cas où les Etats membres approuveraient les amendements / ajouts aux Principes et au mandat de la WEND, ainsi que la Résolution et la Recommandation de la WEND, le BHI envisagerait de les inclure dans la Publication M-3 de l'OHI (Résolutions de l'OHI), comme l'a suggéré la France. Le Bureau pense que ceci donnerait davantage de poids aux documents approuvés. Par ailleurs, ceci serait conforme à la procédure adoptée pour la CHRIS ainsi que pour d'autres organes de l'OHI.

Il est prévu que la 6e réunion de la WEND aura lieu les 25 et 26 mai 2001 à Norfolk, Virginie, USA, conjointement avec l'"US Hydrographic Conference" qui se tiendra du 21 au 24 mai 2001.

Un compte rendu résumé de la 5e réunion WEND a été mis à la disposition du public sur le site web de l'OHI, à l'adresse suivante (www.iho.shom.fr). Ce rapport succinct ainsi que l'ensemble des documents WEND (voir liste en Annexe B) ont également été mis à disposition sur le site web de l'OHI, mais dans une section accessible aux Etats membres de l'OHI, uniquement.

Veuillez agréer, Monsieur, l'assurance de ma haute considération.

Pour le Comité de direction,

Contre amiral Neil GUY
Directeur

P.J. : Rapport succinct de la 5e réunion WEND (anglais uniquement).

5th WEND COMMITTEE MEETING
IHB, Monaco, 16-17 March 2000

SUMMARY REPORT

Notes: 1) Paragraph numbering is the same as in the abridged agenda (Annex D).
2) A list of acronyms used in this report is provided at Annex A.

1. OPENING AND ADMINISTRATIVE ARRANGEMENTS

The Chairman of the WEND Committee (Dr. Peter EHLERS, President of the BSH, Germany) opened the 5th WEND Meeting. Over 60 delegates from 28 nations were in attendance (see WEND/5/1B). The Chairman briefly explained the history of why and how WEND was formed. He acknowledged that while this may be the first WEND meeting in Monaco, having WEND meetings in other regions of the world helped to promote WEND as a worldwide concept.

RAdm Giuseppe ANGRISANO (President, IHB) welcomed the delegates to Monaco. He emphasised that this meeting was particularly important to derive the best possible direction for the production and distribution of ENCs. He suggested that the WEND Committee draft a WEND Resolution for the Conference to underline the importance of the WEND system. He noted that PRIMAR (European RENC) may in fact serve other parts of the world, and he made specific mention that the proposal by Italy to establish a "virtual RENC" for the Mediterranean and Black Sea warranted particular attention.

Meeting Arrangements:

RAdm Neil GUY (IHB) described the various papers as contained in the List of Documents (see WEND/5/1A). He recalled that the IHB was acting as WEND Secretariat. Dr. Lee ALEXANDER (IEC) was appointed as Rapporteur.

Meeting Objectives

Chairman noted the scope and content of the papers that had been submitted. He stressed that the meeting needed to be more than just an update and discussion about the status of developments. He suggested that there were a number of questions to consider: What are we really aiming at? What is the real progress and status? What can we promise for the future? Is the WEND system really workable? Is it the best instrument to provide ENCs to international shipping? What are the problems and obstacles to overcome? Do we have the capacity (funds and staffing) to produce what is needed? If not, we need to be open about this. He stressed that, at this 5th WEND meeting, it was important to come to relevant conclusions and decide upon future actions.

2. APPROVAL OF AGENDA

The Abridged and Annotated Agendas (see WEND/5/2A and WEND/5/2B) were approved.

3. MATTERS ARISING FROM MINUTES OF 4TH WEND MEETING

The Final Minutes were annexed to Circular Letter 37/1999 (also as WEND/5/3A). They included 10 action items that were reviewed by the Meeting (see WEND/5/3B).

Note: The following is an update of the information provided in WEND/5/3B. Paragraph numbering ( ) refers to the minutes of the 4th meeting.

Action items:

(5) Recommended IHO QA Tools. Dr. Christopher DRINKWATER (Chairman, TSMAD) explained the basis for the list of recommended QA tests that software houses will use to determine what could become QA tools. He expected that this work would be completed by the end of the year 2000 and that initial results could be presented to the 12th CHRIS Meeting in October 2000. This list would then be issued by the IHB.

(8) RENC plans and projects. On-going

(11) Attendance to WEND Meetings. On-going

(13) Cooperation with private companies. The IHO-Industry Interface Day (18 March 2000) was noted as an outcome.

(14) SE Asia Marine Electronic Highway. This has been superseded by the Four Nations Joint ENC Production Project for the Malacca and Singapore Straits (see WEND/5/11B).

4. REVIEW OF ACTIVITIES OF OTHER IHO COMMITTEES (e.g., CHRIS) DEALING WITH ECDIS, PERTINENT TO WEND

A number of decisions relating to ENC updating, encryption, electronic chart systems (ECS) and MIO were made at the 11th CHRIS Meeting, IHB, 16-18 November 1999, which have been summarised in WEND/5/4A.

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

IHB explained the Status of IHO Publications on ECDIS (see WEND/5/5A). In particular, it was noted that a "familiarisation" version of S-57 Edition 3.1 had been made available to IHO Member States and a selected number of companies, in November 1999. This new edition of S-57 will come into force on 1 November 2000. It

was further noted that the current edition of the IHO Presentation Library was Edition 3.1, following amendments made to the PL in 1999.

Singapore commented on the usefulness of IHO S-57 Edition 3.1. USA-NOAA asked about the sales of the IHO Colours and Symbols Presentation Library (It was indicated that 36 copies had been sold to date).

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

A summary compilation is contained in WEND/5/6A. Where indicated, delegates provided additional comments/information, as follows:

Canada – 60% (400 out of 600+) completion has been achieved. Pricing is US$50/ENC per year, including updating. NDI website has availability.

Chile – 38 ENCs have now been produced. Commercial service, with updating, will start on 1 May 2000.

China - A new text was submitted for inclusion in WEND/5/6A. 81 "coastal" and "approach" ENCs have been produced for trial purpose.

Croatia – Consider themselves as being in the early stages of the process but plan to start next year.

Cuba – As of 1999, the Cuban Hydrographic and Geodetic Service produced a complete nautical charts collection for Cuban waters (portfolio of 144 Official nautical charts plus 67 charts specially designed for pleasure navigation) in Raster Format (BSB). These were produced to meet the increasing number of recreational boats navigating around Cuba and because the current price of ECS navigational systems made these easily available. Five nautical charts have been classified as prototype in vector format S-57 based and the Cuban Hydrographic and Geodetic Service is now looking for a technological alternative and know-how, to produce the main nautical charts (S-57 cells) capable of guarantying safe navigation in Cuban waters.

Germany – The BSH provides regular updating to the 15 cells produced so far. In addition, it has issued four type-approval certificates, two of which have implemented the decryption capability for the PRIMAR ENC service.

Greece – The few existing type-approved ECDIS is a major concern related to the production and provision of ENC data. In the interim, Greece believes that there is good reason to participate in a SHARED-type program.

Korea – A revised text was submitted for inclusion in WEND/5/6A.

Malaysia – A new text was submitted for inclusion in WEND/5/6A. In addition, a Four Nation report (MY, SG, ID and JP) was proposed as WEND/5/11B.

Netherlands - NLHO has started her own ENC production line of ENC. In 2000 approx. 4 ENC cells will be delivered to Primar. In edition UKHO is delivering 2 cells off the Port of Rotterdam and approaches in due course. In November 2000 the definition phase of the SHIP2 project will be complete. This will give the basis for a new production environment for the production of analogue and digital nautical publications from a object orientated database. It will also be capable of handling military data (AML's) for the Royal Netherlands Navy.

New Zealand – A new text was submitted for inclusion in WEND/5/6A.

Norway – They are now producing ER profiles (ENC updates).

Portugal – Portugal is a founder member of the Northern Europe RENC/PRIMAR. They plan to complete all home waters within four years. They have had some trouble with the QC/QA of ENCs, but this has now been solved.

Peru – 85 ENCs have been produced so far. These ENCs are currently being tested on Naval ships. Updates are made by CD-ROM replacement. They should be commercially-available within an year.

Russian Federation – They have started to work on a system of ENC distribution and updating for Russian waters. They have 26 ENCs for approaches to St. Petersburg.

Singapore – A revised text was submitted for inclusion in WEND/5/6A. ENCs are currently being used in VTMIS data centres. There are plans to include AIS and VTS information on ECDIS and to conduct training on the use of ECDIS, the use of ENC as a base map, and to convert ENC from Ed. 3.0 to 3.1. Incentives for increased use of ECDIS by ships are being considered: Pilotage exemption and round-the-clock operations will need ECDIS and may require that regional ferries carry ECDIS.

South Africa – They have produced three S-57 ENCs for VTS. However, they are not yet able to update them and these ENCs are therefore not commercially-available. Two reasons explain the delay: 1) they have to satisfy a demand by S. African Navy for 67 non-S-57 electronic charts, and 2) they are putting a lot of effort into system development.

Spain – They are currently dealing with some legal problems in regard to joining the Northern Europe RENC/PRIMAR.

United Kingdom – To date, 120 ENCs have been completed, of which 51 are being trialed at sea. None of the UK ENC cells are currently available for sale. They are looking into the legal implications of liability to government. A contract has recently been given to a commercial company (in India) to produce ENC data for the UKHO, with QC conducted in-house. Coverage of ENC production is focused on major ports and shipping routes. ARCS is in its fifth year of operation and 3000 RNCs have been produced, which almost provide world-wide coverage.

A discussion followed which is summarised below.

Greece noted that, currently, the Committee just monitors progress among WEND members. Unfortunately, this does not provide a full picture of what the problems being encountered by other IHO Member States are. He recommended that IHB obtain a better global overview on all IHO Member States. France supported this view. IHB explained that provision of a global picture of ENC production was precisely the purpose of document WEND/5/6B "IHB Report on Status of S-57 Data Production by IHO Member States".

Denmark stated that the involvement of the private sector is large and was making a positive outcome in production. UK felt that national reports provided a good indication of the significant numbers of HOs embarking upon ENC production. They stated that it is the ENC coverage that is the main factor influencing users to purchase and use ENCs. They reported that PRIMAR was preparing a world-wide ENC catalogue. India supported this view, noting that shipping companies will not invest in ECDIS until ENC coverage is greater.

New Zealand pointed out however that there was no current demand for ECDIS in New Zealand. They asked if HOs were trying to create (rather than respond to) a demand for ENCs? They felt that there would not be rapid adoption of this new technology. Singapore noted that the uncertainty about the availability of ENC data was also a major issue in the decision to use ENC. Users are concerned about ENC global coverage. They further felt that there was also an issue of the QA of ENCs.

India suggested that, during the 2nd EIHC on the following week, there should be some discussion as to when ECDIS could be made mandatory by IMO (e.g., a SOLAS carriage requirement).

Germany recalled that IHO has a long history of drawing an ”overly optimistic” picture of ENC production. The real issue is coverage, availability, and service, and there is great disappointment over the reality. They recommended that IHB produce a catalogue that accurately shows the actual coverage and availability of ENC data for the shipping community.

Denmark stated that the ”Singapore approach” to encourage ships to use ECDIS warrants further consideration. They noted that ECS, used together with paper charts, will be the model for electronic charting for the foreseeable future and that HOs should market ENCs with this in mind. Singapore noted that all coastal states are concerned about oil spills in their national waters and that a possible option could be to lower the dues for ships carrying ECDIS.

USA-NOAA stressed that lack of availability of ENC data worldwide is the real problem for ECDIS. They wondered whether ECS with paper charts should be re-considered as an interim solution? They noted that the price of ECDIS equipment was only one cost and that other costs included training, producing ENC data and updating services.

New Zealand suggested that a three-fold strategy was needed: 1) Who wants ECDIS?; 2) When do they want it?; and 3) What incentives will make mariners use ECDIS and ENCs.

IHB suggested that a report on the benefits of ECDIS and ENCs could be prepared by the IHB. They said that confused messages were being sent to the maritime community and that it was time the IHO addressed these issues. Russia requested that, if the IHB prepares a report, it should include what the private sector has done.

Chairman summarised that there were three main items to be considered:

1. How can we get a better global overview on ENC availability? He suggested that Regional Hydrographic Commissions should be invited to make regular reports or Member States to make annual reports. He added that decision has to be made on what needs should be reported (e.g., priorities, demands by shipping, etc.).

2. How can Member States close the gap? Could capacity building achieve this (to mobilise additional capability)? Is there a need for sharing of information on the role that private industry could play?

3. How to find incentives for shipping to use ECDIS? Should ECDIS be mandatory? If so, when?

He suggested that appropriate action should be determined. He added that, although progress had been made in some parts of the world, the production and availability of ENCs for safety of navigation was globally lacking. We need to admit that the situation is unsatisfactory (to the Conference and to our member governments).

This generated the following additional comments:

In regard to item 2, Denmark emphasised the need to share information on the role of the private sector, although India questioned the viability of this initiative, as private companies may be reluctant to divulge how they operate. New Zealand supported this initiative, but recommended that statistics be provided. Germany further suggested that a questionnaire on the IHO/Industry relationships be developed during this meeting. It was agreed that Germany, Norway and Denmark would do this (see Annex F).

South Africa asked about the possibility of approaching international funding organisations to facilitate the worldwide production of ENCs. IHB responded that this was being investigated. India added that lending institutions could provide funds to individual countries. Portugal commented that the production and availability of ENC data was a credibility issue for the IHO, which needs to be concentrated on to produce a global product. Singapore observed that ENC funding was not the only issue requiring funding assistance.

In regard to item 3 above, Canada stated that ECDIS and ENCs were pertenant to inshore and coastal waters. Norway noted that some insurance companies are lowering costs for some coastal shipping companies that are using electronic charts. They added that shipping companies did not need to be convinced to use electronic charts, only to use ENCs with ECDIS. Japan commented that many shipping companies wanted chart portfolios (e.g., different scales and from different HOs.) and that copyright issues were a concern. Australia suggested that efforts should be made to meet these needs in regional areas and home waters. Germany pointed out that a distinction needed to be made

between ECS and ECDIS. Most of the electronic charts in use are ECS and promoting the use of ECDIS may be difficult.

UK stated that the real issue was making ENCs and that national interests were a concern that WEND needed to consider. They noted that, as many nations had limited ability to make even paper charts, realistically, ENC production would not be possible by those nations in the near future. They suggested that this be addressed in Agenda Item No. 13 "Updates of conceptual model for WEND, including the role of private industry". This was agreed.

7. REPORT ON TRIALS AND GENERAL PROGRESS ON ENC DISTRIBUTION AND UPDATING TECHNOLOGY

IHB gave a report on the ENC Updating Workshop held in Mobile, Alabama, USA, on 3-4 May 1999 (see WEND/5/7A). Comments are summarised below.

Germany was of the opinion that some of the technical problems related to ENC updating had been solved. Weekly updates (ER) were now being sent to PRIMAR. However, there remained organisational problems (e.g., how to align to ENC updates with Notices to Mariners, encryption, and types of services). Denmark and UK supported this view.

South Africa stated that the South African HO had no ENC update mechanism at all. Singapore stressed that two issues needed to be addressed: 1) how to distribute ENC updates, and 2) in what format.

IHB reminded the meeting that, according to a decision of the 11th CHRIS Meeting, the IHB will organise a one-day workshop on ENC Updating at the IHB on 29 May 2000, in conjunction with a meeting of the PRIMAR Technical Experts Group.

8. ROLE OF ENC AND SENC IN ECDIS

This matter was discussed at a technical level by CHRIS at their 11th Meeting in November 1999. They had decided that the present wording of S-52, section 3.3 (d), precluded the delivery of data in a SENC format. A proposal for consideration of an amendment to S-52 would be addressed by some delegates to that meeting.

Germany introduced a proposal for an optional, customised SENC distribution mechanism for ENC data (see WEND/5/8A). They pointed out that some of the original assumptions made in the IMO Performance Standards for ECDIS needed to be reconsidered (e.g., how ENC data would be issued and used). They added that there were other issues that were likewise never considered in the first place (e.g., security measures).

They outlined the current situation where ENC coverage is scarce and will not be complete for probably 5-10 years. Most ECDIS installations are for newly built ships and many ECS users are reluctant to migrate to an ECDIS that uses ENCs. Currently, ENCs are used only for a small niche market (i.e., type-approved ECDIS). He

recommended that the use of multi-fuel data ECDIS that use both SENCs and ENCs be allowed.

They noted that the use of SENC would be in addition to (not instead of) the requirement to use ENCs and would be in conformance with current specifications (IMO Performance Standards for ECDIS). The distribution of SENC could be similar (in concept) to that used for ENCs.

A discussion followed which is summarised below.

USA-NOAA believed that this was a pragmatic approach that would provide a wider variety of electronic chart data to the end customer. Expected benefits would include maintaining a joint HO/Private Sector relationship. This would also contribute to greater user satisfaction. Italy and Canada supported this view and the German proposal.

UK stated that, as this matter had already been addressed by CHRIS, it should not be discussed at WEND. It was a technical matter which should be dealt with by CHRIS. USA-NIMA felt that the proposal might damage IHO since it would be difficult to control "what is (or is not) an SENC". For instance, would there be several industry formats? What about legal liability (both data content and display)? They added that USA-NIMA had some experience with "direct read" of DNCs. Denmark and Singapore supported these views. Singapore further expressed concerns about too many different SENC formats and the ability to update SENCs, as well as the means/process of SENC distribution. Portugal concurred, noting that SENC was a private, commercial matter related to data and equipment. As such, this needed not be discussed at WEND.

IHB explained how the matter was being addressed by the Bureau, adding that the IHB wanted to receive some indication on how IHO member states felt about this matter.

Germany responded to some of the issues raised, as follows:

- They said that, in their opinion, SENC data distribution was, in fact, a WEND matter.
- They stressed that the ability to use direct distribution of SENCs would be in addition to the requirement to use ENCs.
- They believed that HOs would have an appropriate degree of control on the integrity of the data.

Although The Netherlands felt that that SENC distribution should not be a problem in terms of the role of the HO in distribution, most of the comments expressed were not in favour of the German proposal. Russia opposed the proposal, however wondering why the UK was so opposed given their position on raster charts. USA-NIMA reiterated that there could be significant issues of product liability with SENC distribution. Norway felt that this matter warranted consideration, but that it was a CHRIS matter. UK considered that concerns remain about the ENC to SENC conversion process and about differences in content/accuracy between ENCs and SENCs. Japan felt that at present, the focus should be on ENC.

Chairman summarised that this matter should be re-considered by CHRIS, and WEND advised of their decision.

9. SECURITY SCHEMES

Canada introduced the subject of ENC Security and Protection Issues (see WEND/5/9A). A formal sub-group of CHRIS undertook to investigate the matter related to security systems. A report was prepared and is available through the Open ECDIS Forum (OEF) (www.openecdis.org). They said that, on this matter, there were several questions that warranted consideration:

- Each HO must decide for itself if it needs an ENC Security System. If it does, since a security system has to be end-to-end to be effective, what are the goals for that system?
- If the need is there, is the need immediate? If so, the PRIMAR system exists. If the need is not immediate, what alternatives exist?

He felt that license termination and ENC accessibility was a Policy Issue for WEND (i.e., what happens to the ENC at the end of a license period?). Comments and questions which followed are summarised below.

Norway stated that it would not be acceptable that there would be a complete termination of the ENC in ECDIS. PRIMAR stressed that they had implemented an online ”security system” to insure the security of the data. It will not terminate ”access to”, but the ”service to” the ENC. They added that tests were ongoing with ASPO/NAVINTRA Systems (a type-approved ECDIS).

USA-NOAA stated that encryption was a complex issue that is rapidly evolving. They further noted that it was also a marketing problem that is sensitive. They questioned if the IHO really needs to standardise an encryption scheme and questioned the wisdom of a single encryption scheme. Germany strongly supported the USA question but did not have a ready answer.

IHB mentioned that they had sent a Circular Letter in 1999 on the matter of RNCs and ENC encryption (CL 40/1999). They felt that, although the technical aspects of encryption were a CHRIS matter, WEND needed to develop a policy statement on ENC security schemes.

Chairman summarised that WEND needed to make a clear statement regarding a WEND principle on ENC Security Scheme. After discussion, the following statement was agreed as an additional WEND Principle 5.6:

”When an encryption mechanism is employed to protect data, a failure of contractual obligations by the user should not result in a complete termination of the service. This is to assure that the safety of the vessel is not compromised.”

France felt that without a physical entity, there might be some practical problems in terms of leadership, roles, QA, co-ordination, etc. Italy replied that training would be an important first step. Greece felt that, although this was an interesting proposal, this might be premature and that three steps were needed:

1. review proposal in more detail;
2. seek comments; and
3. hold a regional conference.

They further expressed concerns, shared by Croatia that, within the region, there were permanent member HOs, associate member HOs, and non-participating HOs, and that financial considerations would need to be addressed.

PRIMAR stated that network management issues were not trivial. They added that PRIMAR had experience and was willing to provide insight on how to deal with these issues.

Chairman summarised that HOs should:

- wait to hear about outcome of discussions by Mediterranean and Black Sea Regional Hydrographic Commission; and
- look to achieving cooperation and harmonisation between PRIMAR and VRENC.

UK commented that harmonisation issues must be addressed as they believed that there were underlying and fundamental issues that are common to all RENCs. Full harmonisation between RENCs was essential to the WEND concept. India supported this view. In answer to South Africa, wondering why we do not all just adopt PRIMAR approach, UK further stated that there were two issues:

- The PRIMAR solution may work for N. Europe but not necessarily everywhere; and
- Technology is evolving, and we need to look ahead.

Chairman noted that, in 1992, the first idea for WEND was to establish a single World Centre for ENCs, but it was later decided to base it on RENCs. He felt that WEND needed to make a clear statement regarding a WEND principle on data and service standards. After discussion the following wording, proposed by UK, was agreed for a new WEND Principle 2.6:

"The Member States should strive for harmonization between RENCs in respect of data standards and service practices in order to ensure the provision of consistent ENC services to users. Wherever appropriate, this should be achieved by adoption of IHO Standards."

In regard to harmonisation, it was also agreed that paragraph 1.2 of the Terms of Reference for the WEND Committee would be amended as follows:

"To harmonize the policies of regional ENC Coordinating Centres (RENC) with respect to matters related to administration, legality, finances, technical processes, etc."

RENC Committees

UK discussed the issue of capacity building for ENC production throughout the world (see WEND/5/13D). They proposed a top-down approach similar to that used with the International Chart Committees. They suggested that RENC committees be established and tasked with determining what the needs of shipping and priorities for ENC production are. Also, these committees should establish catalogues of where ENC data are available. They believed that Virtual RENCs were most likely the future direction, noting however that data quality may be an issue that is difficult to achieve within a Virtual RENC.

Australia stated that, although there was not a demand for ENCs in all regions, overarching co-ordination would be useful. India supported this view. UK stated that since WEND had not evolved as expected, another mechanism for international co-ordination was necessary. It would make sense to use an existing infrastructure like the network of International Chart Committees. They added that there was always a danger when building a new structure, of failing to use the existing structures which already exist elsewhere in the Organization and that appear to be functioning well, such as the INT Chart Committees. The INT Chart Committees would seem to be the best approach given that there is a need to harmonise paper chart and ENC production/services. Further, that the INT Chart Committees could begin thinking about the establishment of RENCs.

In answer to a question by the IHB on who was going to establish these RENC committees, it was stated that the following three options were possible:

- Regional Hydrographic Commissions establish RENC Committees; or
- Existing INT Chart Committee be used; or
- IHB establishes the RENC committees.

USA-NOAA believed that the proposal should be to ”explore” this matter. Greece said that they would like to see this produced in writing.

After discussion it was agreed, following a proposal by UK, that the WEND Committee would recommend that the IHO should request:

a) Regional Hydrographic Commissions or, where they exist or where they are appropriate, International Chart Committees to address the needs for and promotion of ENC production in their regions.

b) Regional Hydrographic Commissions to report annually to the WEND Committee about the progress made on the establishment of the WEND system. This should be accompanied by reports from all Member States about the needs and priorities of ENC production, and the progress which has been achieved.

Annex A

LIST OF ACRONYMS

AIS	Automatic Identification System
AML	Additional Military Layer
ARCS	Admiralty Raster Chart Service (UK)
BSH	Bundesamt für Seeschiffahrt und Hydrographie
CD-ROM	Compact Disk - Read Only Memory
CHRIS	Committee on Hydrographic Requirements for Information Systems (IHO)
CLCS	Commission on the Limits of the Continental Shelf (UN)
DNC	Digital Nautical Chart (USA-NIMA)
ECDIS	Electronic Chart Display and Information System
ECS	Electronic Chart System
EGNOS	European Geostationary Navigation Overlay Service (EU & Italy)
EIHC	Extraordinary International Hydrographic Conference (IHO)
ENC	Electronic Navigational Chart
ER	ENC Revision, i.e. ENC update or NtM data
EU	European Union
HO	Hydrographic Office
IEC	International Electrotechnical Commission
IHB	International Hydrographic Bureau
IHO	International Hydrographic Organization
IMO	International Maritime Organization
INT	International (Chart - IHO)
ISO	International Organization for Standardization
MIO	Marine Information Objects

MS	Microsoft or Member State
NDI	Nautical Data International (Canada)
NIMA	National Imagery and Mapping Agency (USA)
NOAA	National Oceanic and Atmospheric Administration (USA)
NtM	Notice to Mariner
OEF	Open ECDIS Forum
OEM	Original Equipment Manufacturer
PL	Presentation Library
PRIMAR	European RENC
QA	Quality Assurance
QC	Quality Control
QVB	Queen Victoria Building (Australia - New Zealand)
RENC	Regional ENC Coordinating Centre
RNC	Raster Navigational Chart
S-52	IHO Specifications for Chart Content and Display Aspects of ECDIS
S-57	IHO Transfer Standard for Digital Hydrographic Data
SENC	System ENC
SHARED	Singapore Hong Kong Admiralty Raster and ENC Demonstration
SOLAS	Safety of Life at Sea Convention (IMO)
TSMAD	Transfer Standard Maintenance and Application Development W.G. (IHO)
UKHO	United Kingdom Hydrographic Office
VRENC	Virtual RENC
VTS	Vessel Traffic System
VTMIS	Vessel Traffic and Marine Information Service
WEND	Worldwide Electronic Navigational Chart Data Base (IHO)

Annex B

LIST OF DOCUMENTS

WEND/5/1A rev.5	List of Documents
WEND/5/1B rev.3	List of Participants
WEND/5/1C rev.5	Membership of WEND
WEND/5/2A rev.2	Abridged Agenda
WEND/5/2B rev.2	Annotated Agenda

Annex C

LIST OF PARTICIPANTS

Country/Institution	Name
Australia	Capt. Geoff GERAGHTY Cdr. Robert WARD
Canada	Mr. Anthony D. O'CONNOR Mr. Mike CASEY Mr. J. Richard MacDOUGALL
Chile	Capt. Rafael MAC-KAY Cdr. Jorge PEREIRA LIBOR Capt. Hugo GORZIGLIA
China	Mr. Wang LIANGYU
Croatia	Capt. Željko BRADARIĆ Mr. Mladen SRDELIĆ
Cuba	Maj. Rolando FEITÓ SARDUY
Denmark	Mr. Peter JAKOBSEN Mr. Ole BERG
Finland	Mr. Juha KORHONEN
France	Ing. Général François MILARD Ing. en chef André BERTRAND
Germany	Dr. Peter EHLERS **(Chairman)** Mr. Horst HECHT
Greece	RAdm Alexander MARATOS Capt. Anastasios SKLAVIDIS
India	RAdm. K.R. SRINIVASAN Dr. S.P. SHARMA
Italy	Capt. Corrado FIORI LCdr. Rosario LA PIRA Mrs Paola PRESCIUTTINI
Japan	Mr. Kunio YASHIMA
Korea (Rep. of)	Mr. Yong-cheol KIM Mr. Sang-hyun SUH
Malaysia	1st Admiral Mohd RASIP BIN HASSAN Capt. Yacob BIN ISMAIL
Netherlands	Captain Leo KOOL
New Zealand	Mr. John SPITTAL Mr. Dave MOLE
Norway NHS ECC	Mr. Frode KLEPSVIK Mr. Asbjørn KYRKJEEIDE
Portugal	Vadm José TORRES SOBRAL LtCdr. Fernando MAIA PIMENTEL

Country/Institution	Name
Peru	RAdm Hector SOLDI SOLDI LtCdr. Aquiles CARCOVICH CARCOVICH LtCdr. Julio BEHR LACA
Russia	Capt. Boris FRIEDMAN Capt. Vadim SOBOLEV
Singapore	Capt. Wilson CHUA Mr. Parry OEI
South Africa	Capt. Derek LAW
Spain	Cdr. Manuel PARDO DE DONLEBUN MONTESINO
Sweden	Mr. Åke MAGNUSSON Mr. Göran NORDSTRÖM
UK	RAdm. John P. CLARKE Mr. David H. MCPHERSON Dr. Chris DRINKWATER Mr. Adam J. KERR
USA (NOAA)	Mr. Douglas L. BROWN
USA (NIMA)	Radm Christian ANDREASEN
EAtHC	Ing. Général François MILARD
IEC	Dr. Lee ALEXANDER
IHB	RAdm. Neil GUY **(Secretary)** Ing. en Chef Michel HUET
IOC	Dr. Dmitri TRAVIN
PRIMAR	Mr. Asbjørn KYRKJEEIDE Mr. Philip WAINWRIGHT

Annex D

ABRIDGED AGENDA

1. Opening and administrative arrangements.
2. Approval of Agenda.
3. Matters arising from Minutes of 4th WEND Meeting.
4. Review of activities of other IHO committees (e.g. CHRIS) dealing with ECDIS, pertinents to WEND.
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. Role of ENC and SENC in ECDIS.
9. Security Schemes.
10. Regional report on progress and plans of RENCs and projects.
11. Report on Malacca and Singapore Straits Conference.
12. Discussion on financial policies, bilateral arrangements and other matters related to reimbursement for provision of data.
13. Updates of conceptual model for WEND, including the role of private industry.
14. Update on Interim measures to provide data in the absence of S-57 data.
15.

Annex E

LIST OF ACTION ITEMS
(Status as of 15 June 2000)

Agenda item	Subject	Status	Comments	Action by
6	ENC Production Services		- Regional Commissions should be invited to make annual reports. This will accompany the reports of Member States.	Member States
			- Identify and recommend additional procedures to close the gap on ENC production and required services. (e.g., participation of private industry)	Member States
			- Identify incentives to facilitate the use of ENC data and ECDIS by the greater maritime user community.	Member States
		In hand	- Circulate a questionnaire to Member States on the role of the private sector. This questionnaire will be developed by Germany, Denmark and Norway.	IHB
		In hand	- Make investigations on International funding organisations to support the world-wide production of ENCs.	IHB
8	Role of SENC	Under consideration by CHRIS	Re-consider the parallel use of both ENC and SENC data, and develop additional technical guidelines, if necessary.	CHRIS
		Ditto	Request CHRIS Chairman to contact ECDIS manufacturers and regulatory authorities on this matter.	IHB
9	Security Schemes	Done	Propose to 2nd EIHC to amend the WEND principles accordingly.	WEND Chairman

Agenda item	Subject	Status	Comments	Action by
13	ENC Services	Done	Bring this matter to the attention of the 2nd EIHC. Give higher priority to the production of ENC data, and the provision of adequate ENC services.	WEND Chairman Member States
13	WEND System	Done Done On going Done (IHO-Industry Interface)	- Submit the Draft WEND Resolution to the 2nd EIHC. - Propose to the 2nd EIHC amendments of the WEND Terms of Reference (par. 2.1), and the WEND Principles (par. 2.6) concerning harmonisation. - Strive for harmonisation between RENCs in respect to data standards and service practices. - Address the needs for ENC production in their regions. - Determine what the relationship is between industry and IHO related to ENC production and services.	WEND Chairman HO's operating a RENC Regional Commissions or International Chart Committees IHB
14		Done	- Consider sponsorship for the 2nd International ECDIS Conference in Singapore in 2002.	IHB

Annex F

CO-OPERATION OF HOs WITH INDUSTRY

(Draft Text for Accompanying IHB Circular Letter)

HOs increasingly have to rely on the services from private companies, especially with regard to information technology. In particular, for the HOs to contribute electronic chart data under the umbrella of the WEND system, it is prerequisite for them to master the transition from traditional services to the digital era. The WEND Committee, at its 5th session, 16 – 17 March 2000 in Monaco, has deemed it useful if Member States would be encouraged to exchange information about private companies they found reasonably capable of assisting HOs in the development of digital data.

Annex G

TERMS OF REFERENCE FOR THE SHARED S.C. OR W.G.
(Draft)

Note: At the Third Shared Programme Meeting, Singapore, 12–13 October 1999, consideration was given to SHARED becoming a WEND Sub-Committee or Working Group, and draft Terms of Reference (TOR) were drawn up accordingly. They are reproduced below.

Objective :

To promote the production and use of official ENC chart data covering major shipping routes and ports.

Terms of Reference:

1. To provide a forum for the coordination of the activities of SHARED Member States in achieving the objective.

2. To identify major shipping routes and ports to demonstrate on-going efforts by HOs to provide official ENC data.

3. To identify and work with equipment manufacturers and shipping companies to participate in the demonstrations.

4. To provide guidance on harmonisation in regard to interpretation and implementation of IHO S-57 data standard.

5. To encourage the exchange of ENC data among Member States for quality assurance and evaluation.
