11th CHRIS MEETING
IHB, Monaco, 16-18 November 1999

REPLIES TO CHRIS LETTER No. 2/1999
CONSIDERATION OF THE FINNISH PROPOSAL TO RE-ARRANGE THE STANDARDISATION WORK WITHIN CHRIS

AUSTRALIA (Rober Ward)

There is no argument that progress on S-57 and related electronic data issues is moving too slowly. However, there is concern that devolving or transferring development responsibility from the HOs to other bodies or to a small group of so-called experts is fraught with difficulty.

The Finnish proposal incorporates six items. Australia's specific comments to these proposals are as follows:

In the coming versions of S-57 only hydrographic information parts will be defined; coding etc can be left to other standardisation bodies

It is assumed that this means that coding, file format, directory structure, et cetera would be left to other bodies. While it may be appealing to leave responsibility to other bodies, this can only be done if those bodies have the requisite understanding of the issues. IHO has already had some involvement with AIS and VTS because the relevant hydrographic expertise is not available. ISO TC 211 also suffers from limited Hydrographic Office expertise and experience, which is why CHRIS has previously expressed concern over monitoring its activities.

The range of unforeseen implementation issues which have arisen recently as a result of using S-57e3 and the ENC product specification indicate that it is vital for HOs to continue to have direct involvement in the further development of the relevant standards and specifications. Current examples include:

- defining the minimum level of QA for ENCs; and
- rules and guidance for the use of SCAMIN to avoid ECDIS clutter.

A core Technical Expert Group (TEG) of 3-5 persons will be established to work full-time on S-57

Such a group would require a very wide range of experience and expertise in order to cover S-57 properly and make appropriate and acceptable recommendations to the CHRIS membership. S-57 is a complex exchange standard. Even the smallest changes can effect several other sections of the standard (as well as effecting commercial and military

applications). Without considering all of S-57, one off changes are dangerous. Such changes would be harder to monitor, control and minimise if they were implemented by external agencies.

It is simply not possible to find the required range of expertise in the proposed group of 3-5 persons. It is also arguable whether this range of expertise could be found outside the IHO Member community. If not, then it will merely strip individual HOs of their own experts, who will then be forced to adopt a more generalist role at the IHB as they attempt to cover the full range of S-57 topics.

S-57 related topics include ECDIS in general, CHRIS, IEC TC80/WG7, ISO TC 211, S-52, IMO Performance Standards for ECDIS, ENC encoding (or at least chart compilation experience), IT skills, and military applications including DIGEST (or at least DNC understanding). Other related issues include Sailing Directions, Maritime boundaries, Marine Information Objects, and many more....It is notable that no one member of TSMAD WG has expertise in all the above areas, but collectively, the TSMAD group comes close.

While the CHRIS Committee process is somewhat slow and at times cumbersome, a strength is its ability to draw upon a very wide range of relevant expertise and experience. Most importantly, active CHRIS (and subordinate WG) participation is encouraged by Member States' self-interest.

It might be more appropriate to contract out certain specific activities to appropriate experts. This would have the advantage of drawing upon expertise relevant to each topic on a needs basis. The TAWG encryption PG is an example of how this could be achieved. Once the group has determined the scope and any policy constraints regarding encryption, then it might be more time effective to award a consultancy to make recommendations regarding specific methodologies and methods of implementation. Many HOs are in fact taking this approach (for example UKHO/NHS regarding data encryption, Australian HO regarding digital water-marking).

Current TSMADWG will be divided into several WGs, ie. one for Object Catalogue and one for each Product Specification

This is a good idea. A separate sub-working group for each Product Specification should be kept as small as possible and might even be restricted to those who have demonstrated expertise or involvement in the product under consideration. Nominal membership on the pretext of "keeping an eye" on developments should be avoided. Proposed Product Specifications should be subject to final approval by TSMAD as the body overseeing the whole of S-57.

The CHRIS Committee will set the goals, and control and coordinate the work

The CHRIS has increasingly been doing this. However, more focus is required. In particular, meetings and correspondence should concentrate on decision making and policy direction for the future, rather than reviewing progress reports of HOs and other relevant

organisations (ECC, ISO TC211, CEN, IEC WG's, et cetera). Much time has been spent at recent CHRIS meetings with tabling progress reports rather than discussing and endorsing new proposals and programmes. Progress reports could and should be issued in advance. Participants and the Secretariat could then raise questions with or without notice at the meeting if necessary.

There has also been a number of instances where CHRIS decision making has been delayed through trying to accommodate minority views in an overall consensus. Whenever a clear majority prevails this should be taken into account.
Greater use could also be made of e-mail and fax as the primary (sole?) means of correspondence. This would enable response times and deadlines to be commensurately shortened. A response time of nine weeks for letter CHRIS 2/99 is an example where four to five weeks should be more than adequate.

The relations between other WG's (DQWG, TAWG,....) should be clarified

This should be clearly defined by CHRIS. In particular, CHRIS should identify roles, responsibilities and authority for common issues being addressed by more than one WG. Furthermore, the recommendations and findings of expert panels or working groups must be accepted more readily than has happened in the past. Otherwise there is little point in appointing them. The lengthy debates at CHRIS over ZOC is an example where the work of the DQWG was largely repeated and incurred a delay of over a year in the acceptance of the ZOC concept. Recommendations from the TAWG Encryption PG is unfortunately another topic where CHRIS members who have hitherto played no part in the discussion will feel empowered to enter the debate at a late stage.

It would also be beneficial and provide greater coordination and synergy if meetings of relevant WG's were arranged to coincide wherever possible. For example, there would be great benefit if TSMAD, C&SMWG and an MIO Workshop were able to run consecutively and at the same venue at least once per year.

Financing of the standardisation should be arranged by prioritising the tasks of IHB or in addition by direct funding of Member States

Australia favours retention of the current CHRIS structure. However, it supports the notion of having funding available to contract out certain development/feasibility activities under the overall policy direction of CHRIS and its subordinate WGs. Individual HOs should also be encouraged to contribute the results of their own contracts/consultancy reports where appropriate. They might also seek collaborative arrangements with individual member HOs to share costs as well as contributing directly towards CHRIS funding for such activities.

Summary

- Australia believes that there is only limited scope for devolving or transferring responsibility for

S-57 to other bodies. This is primarily because of the lack of relevant experience in other bodies and the impact that any resultant decisions that these bodies make will have on HOs.

- The establishment of a core Technical Expert Group at IHB is not supported. This is because the range of expertise and experience required to adequately address S-57 issues cannot be achieved in such a small group.
- The CHRIS Committee should focus attention on policy setting in general and the work programmes for its subsidiary WGs. More emphasis should be placed on majority views rather than overall consensus decision making.
- The recommendations and proposals of WG's should be more readily accepted.
- TSMAD (like TAWG) should sponsor small highly focussed WGs to address specific issues (such as Product Specifications). Membership of these WGs should be relevance based.
- Associated WG's such as TSMAD, C&SMWG and MIO Workshop should attempt to meet consecutively and at the same venue at least once per year.
- CHRIS should be prepared to contract out or seek consultancies for specific advice or work on a needs and relevance basis.

BRAZIL (Luiz Gonzagua Campos)

Pursuant to your letter in reference, from DHN's experience on the complex subject of S-57 data production, this Directorate agrees with Finnish proposal. I understand this re-arrrangement as a sound contribution to the specification's development.

CANADA (Michael Casey)

Canada recognizes and appreciates the issues raised in the proposal from Finland concerning the work in establishing and maintaining standards for digital chart products. However Canada does not share the same sense of alarm as indicated in the proposal.

We do not believe it is necessary at this time that a group of technical experts be brought together full-time to address the concerns discussed in the proposal. Firstly, the cost is prohibitive at a time when most HOs have undergone substantial financial cuts. Secondly, by its nature such an elite group is more likely to move the standard towards increased complexity rather than to simplify. At this point HOs need to concentrate on making ENCs to the existing standard and we would benefit with more simplicity.

On the issue of the splitting TSMAD into sub-groups, this is an option open to TSMAD under its existing form. We note that DGIWG has recently abandoned its attempt at modularising the group and have reformed in order to retain co-ordination. Sub-meetings held in conjunction with TSMAD could attain the same goal as that proposed by Finland.

It is Canada's position that TSMAD should remain quite conservative to change until we have attained a significant world-wide coverage in ENCs. In preparation for Edition 4 we believe that TSMAD should concentrate its efforts on selecting the appropriate standard

components for Edition 4 (Message Coding and Data Contents), content extensions for Edition 4 (Data Contents and Information Usage) and new application consideration (Information Usage).

Canada suggests the issue be raised at the next CHRIS meeting for further elaboration and clarification. At that time Finland and other supporting HOs might convince CHRIS of the merits of the fast start they wish to make.

CHILE (Jorge Pereira Libor)

1) General comments in relation to the wording of the Summary of the Proposal

a) To organize a work "in a more efficient way than today" I think that firstly we need to make a complete study and analysis of the actual situation, identifying possible weaknesses. The proposal as it stands, does not mention "the problem" to be solved.

b) I fully agree that IHO should concentrate only on issues belonging to IHO´s scope. To my understand that is exactly what IHO is doing now.

c) I agree that all matters not belonging to IHO´s scope should be given to other appropiate standardization bodies, but keeping in mind that IHO itself, is the "appropiate body" for standardization of nautical charts and documents.

2) Comments in relation to the 6 bullets within the "Summary of the Proposal" and "Some more details to the proposal"

a) The coming version of S-57 should not lose its original objetive. Other standardization bodies "within the IHO" should progress on other matters belonging to IHO´s scope, coordinating their progress under the CHRIS umbrella.

b) S-57 was prepared and is progressing with the contribution of many Members States, all facing different situations and realities. Does the proposal consider that a group of 3-5 experts will be more effective and will have a wider view that all MS technical experts working together as they are today?. And one more question about this: How these experts would be elected; from my point of view here arise another conflictive matter.

c) The division of the TSMADW Ginto several WG´s could be a good idea, but we must be careful on the goals to expect about their tasks. It´s easy to set great goals, not considering that it might be expected difficulties in the coorditation process. CHRIS should look over the consistency between each other WG activities, and that responsability cannot be passed to others.

d) In my opinion it is not up to the CHRIS committe to set goals in the standardization work of ENC and other digital nautical publications, its work, I think, is to control and coordinate; the goals are to be set by the IHO through the Strategic Plan and the Working Program of the IHO. CHRIS Committee is a subsidiary body as all others, WG´s included.

e) The relation between all WG´s allways should be under revision, to increase effectiveness. I agree that this matter need to be stressed (e-mails and faxes should be used in a more intensive way)

f) Standardization is one of the many activities that needs financing within the IHO; its logical and fair that all of them should be considered, not only standardization. In case of direct funding of MS is available, these resources must be used according to priorities agreed. Another point about this is the fundings involved in the proposal (3 to 5 experts working full time in Monaco), its easy to imagine the big problems this could bring to the Bureau.

3) Comments in relation to background notes to the proposal

a) The proposal mentioned in the first paragraph is already in force.

b) It might seem logical to include other nautical publications into the S-57, as new product specification, but from my point of view, we have to be careful in losing the objetive of S-57. We must work not to get "more and more complex" this standard, on the contrary, as experience is being gain, it should become less complex.

4) Final opinion:

The proposal submited is not well documented. It starts from weaknesses that have not been confirmed yet, and it considers facts that have not agreed.

There is no clear evidence on the advantages of implementing the proposal.

There is no evaluation on the costs of its implementation and benefits, if there are.

In brief, I do not agree with the proposal.

CHINA (Wang Jinfu)

I think it's a beneficial advice to the huge standard. I appreciate the principle that IHO do just what wholly belong to IHO and leave the rest to other organizations or associations.

But a present time, most of the delegates attending both the Singapore's CHRIS Meeting and Sydney's WEND Meeting have proposed to freeze the standard to 2002. The industry of my country also asks the standard to remain relatively stable for a longer time, because they need enough time to digest the standard and develop their own ECDIS or ECS. And I can't imagine how many changes will be made to the standard.

In view that the standard changes will relate with many other fields, I think maybe it is much better to leave it to the 16th IHO Conference in 2002.

DENMARK (Ole Berg)

The Finnish proposal adresses an issue which is evident: The progress on S-57 and the related issues are moving too slowly.

It is Denmarks's view that the Finnish proposal touches on a number of issues the discussion of which ought to be the number one priority on agenda of the next CHRIS meeting.

The impact of CEN and ISO standardisation. Standardisation on its own right is benificial to the international community. For decades the IHO has shown the way on the

international arena for geographic/spatial information, but other spatial information disciplines are now fast catching up. We in the hydrographic community must realise that a lot more momentum is present in other fields. Consequently we must carefully consider whether we want to continue to bleed at the cutting edge of spatial data standardisation or our energy is better spent somewhere else e.g. on the information usage and content rather than data modelling, and mesage coding.

Whether or not this is best adressed by setting up and expert group permanently at the IHB or be rearranging the work and organisation of the CHRIS working groups needs to be discussed more thorughly face to face by CHRIS. It is Denmark's view that both methods or perhaps a combination is worth while considering. However no matter which model is finally chosen, an adjustment of the general attitude to how the work is carried out in the IHO working groups is probably required. The discussion on the ZOC issue is an example of how not to....

The funding issues related to rearranging the way CHRIS works is obviously also an item that can cause some difficulty.

FINLAND (Juha Korhonen)

Finland is still supporting its proposal and has some additional comments:

- The maintenance of S-57 and plans to develop closely related standards for nautical publications are vitally important to the future of IHO. These issues should be ranked high in the priority list of CHRIS tasks and also when considering future Strategy of IHO.

- IHO should concentrate to this standardisation issue and 'keep it clearly on hands' by actions listed in the proposal or otherwise.

- IHO should be able to tightly follow the general development on digital data transfer standards and implement such features, which seems to be on the main stream.

- Even if the members of the proposed Technical Expert Group (TEG) will very likely be from the existing staff of Hydrographic Offices, Finland sees the establishing of the TEG feasible because in that case the TEG members can allocate all their work capacity to the standardisation work.

- CHRIS Committee could prepare the issue further on, and on its meeting in November make a proposal to the Extraordinary Conference for necessary decisions needed for financing and organising the work. Finland supports the proposed Extraordinary Conference to be held on March 2000.

- Regardless of the decisions about the future of the proposal Finland will continue to contribute to the work of the CHRIS Committee and its WGs.

FRANCE (Jean-Luc Déniel) ***(Translated from French at the IHB)***

The S-57 publication is certainly one of the main publications of the IHO and therefore deserves an important investment by hydrographic services to maintain and promote it as a hydrographic exchange format.
However, I am not in favour of the proposal to create a group of experts responsible for developing this standard for the reasons explained below.

- **Stability of the standard**

In order for this standard to be applied, it must be stable. Without stability, its potential users would hesitate investing in the developments necessary for its implementation. The present organisation allows both stability and the maintaining of the standard through the publication of explanatory or new (correctional) documents and the study of future evolutions through TSMAD. The Open ECDIS Forum allows the control of unofficial extensions of a catalogue of objects and it could be a place for discussion and preparation of evolutions. A group of experts working full time on this subject would certainly obtain quicker results but above all, more of them, which would cause a too rapid evolution of the standard.

- **Control of the evolutions**

These evolutions, apart from the extensions, must be limited to those necessary in the fields where the standard is used. The experts who are confronted on a daily basis with the difficulties of production are more likely to be in a position to put forward evolutions and to test them, as opposed to people who are disconnected from the practical inconveniences.

- **Resources**

The creation of this group of experts has to take into consideration the financial and human resources available. If the strategic planning concerning the functioning and the objectives of the IHO decides that it is a priority and allows its financing, only the problem of whom to assign to the task will be posed. It is probable that most of these people will come from national hydrographic services in order to guarantee a certain level of competence. However, it is less likely that these hydrographic services will be willing to let their specialists go as they are essential during the development stage of the ENC production.

Moreover, the national services will remain responsible for the final adoption of the proposals coming from this group of experts. They should therefore study and evaluate them. This will not reduce the preparatory work for TSMAD and CHRIS meetings, quite the opposite.

- **The functioning of CHRIS and TSMAD**

Improvements can be considered to improve the functioning of CHRIS and TSMAD.

CHRIS could, as pointed out in the Finnish proposal, define with precision, the orientations and priorities of the depending groups.

It would be preferable to concentrate each meeting on an area of application or a product specification, rather than dividing TSMAD into several sub-groups. This would allow the participation of specialists on the subjects to be dealt with, whilst at the same time keeping a core of participants to a minimum, for example the Chairman in order to ensure a certain consistency in the developments.

Relations between the various working groups deserve a better co-ordination by CHRIS so as to provide a convergence of efforts and concentration on the main priorities.

In conclusion, the speed of evolution of the standard is not an end in itself, and the number of specialists able to devote themselves to the evolution of S-57 is limited. It seems to me that it would be preferable to optimise the existing working groups rather than creating a group of experts.

GERMANY (Horst Hecht)

General

The proposal by Finland raises valid and important points deserving attention and careful examination. We do not believe, however, that the discussion on a possible re-arrangement of work within CHRIS, and the potential role of IHB, can be resolved through correspondence only. We suggest, therefore, that the Finnish proposal should be discussed in detail at the forthcoming CHRIS meeting.

Preliminary Comments

As stated by Finland, use of S-57 for other application than ECDIS will certainly spread. However, establishing a standing Technical Expert Group (TEG) would not only be financially unrealistic, but also perpetuate a work that should be dealt with on a time-limited case-by-case (project) basis. Standardisation is not a purpose in itself, but should be demand-driven, as it was, e.g., during the time of development of S-57. Member States must also be given the possibility to take part in the work any Working Group, if they desire. In addition, the fact that IHB has five Professional Assistants (four of them permanent) as expert staff could (and should) be taken advantage of if expertise is needed centrally at the IHB. One could also think of forming task groups from PAs for specific purposes, e.g. to provide input for standardisation body on a complex subject.

As for ENCs, standardisation of S-57 is completed, and maintenance of S-57 in this regard should be carried out in the most conservative way possible, in order to preserve investments of HOs and industry. On the other hand it is clearly realised that a need exists for extending S-57 applications to other products (see IHO C.L. 16/1999 on other hydrographic data), or even only to expand the ENCs beyond chart data, such as for digital Sailing Directions.

Any ENC-related S-57 maintenance, which may involve both coding and information content, must remain under full control of IHO; handing one ENC element (coding) over to another organisation would bear the serious risk of compromising the ECDIS standards. Depending on the subject, though, one could imagine to share work of developing other S-57 based standards with other organisations, e.g. with IOC for bathymetric data exchange (although it would be quite unlikely that IOC could be constrained to coding issues only).

The impact of CEN and ISO on standardisation in the hydrographic field is considered only marginal, primarily to try to achieve that inter-operability of whatever geo-spatial standard they develop is maintained for S-57. Passing on to them responsibility for any S-57 elements would certainly not speed-up anything, but, on the contrary, slow down development and bear the risk of losing hydrographic aspects. The attempts to develop a single, universal, all-embracing geospatial standard have all failed so far, and only produced a considerable number of draft standards, some of which being in use for certain applications. On the other hand, the potential of S-57 is *not at all* limited to "messages sent from the HO to the mariner". The basis of S-57, which is completed, has the flexibility to accommodate all known hydrographic applications, it has proven workable and has been officially adopted – that is something IHO can be proud of. Getting other organisations involved, apart from expert bodies like IOC or IALA, would not help for the better.

Similarly, as S-57 is able to provide a common basis for all hydrographic applications, we don´t think that there is merit to disintegrate TSMAD into separate Working Groups. However, it may be worthwhile considering the benefits of sub-groups within TSMAD for certain tasks. Then, TSMAD acts, on the expert level, as the body for mounting together the results of the sub-groups, a role beyond the scope of CHRIS.

Nevertheless, it is certainly necessary now to co-ordinate and organise remaining work on extending
S-57. For instance, the status of MIOs in terms of S-57 standardisation needs to be clarified, the interface between the new Sailing Directions WG and TSMAD be defined etc.

Summary

No need is seen for a permanent TEG to achieve more rapid progress on standardisation matters. Similarly, except for expert bodies like IOC and IALA, involvement of standardisation organisations are not expected to improve the situation, but bear rather the risk of getting hydrographic input neglected, and even slow down development. The existing structure, Professional Assistants, CHRIS, TSMADWG etc. could be employed perhaps more efficiently to address outstanding issues. The whole subject, including outstanding standardisation work, should be discussed at the next CHRIS meeting.

GREECE (Alexis Hadjiantoniou)

a) CHRIS has handled S-57, S-52 and all ECDIS matters in a very effective way throughout the years.

b) Besides the strictly technical part, (File formats, data representation and Transmission protocols) all other elements should be handled by IHO (CHRIS and its WGs).

c) The establishment of a permanent WG such as TEG would necessitate one way or another, the finding of extra funding by the IHO Member States.

As a consequence of the above I am not in favour of the Finnish proposal of Re-arranging the work within the CHRIS Committee. Of course, if it becomes, necessarily new WGs may be established within CHRIS, according to the existing TORs.

JAPAN (Shinichi Kikuchi)

This proposal seems reasonable, if the group in question receives requirements and information, which are needed to develop the standard, from mariners, ECDIS manufacturers and international organizations. However, I think that there should be only one member in the Technical Experts Group. Also, I emphasize that any increase of Member States' contributions must be avoided.

NETHERLANDS (L. Kool)

The answers to these six points, which do contain some wise ideas, however, will depend to a great extend on the IHO attitude regarding a more fundamental matter, which I wish to raise here:

S-57 is becoming more and more popular for applications other than pure nautical charting, like oceanography, meteorology, maritime information systems, etc. With regard to the potential of S-57, and the fact that inclusion of these aspects in S-57 is the logical thing to do, the following fundamental question arises:

Does the IHO wish to continue accepting the full responsibility for maintaining, developing and controlling all aspects and implementation of S-57?

1. If the answer is YES, then IHO must accept the consequences for this repsonsibility:

   Member States then have to enable the IHO to work on S-57 on a structured basis, for instance by establishing a Technical Expert Group. This means funding and/or personnel.

2. If the answer is NO, then IHO should transfer the work involved to other capable bodies, and accept the fact that the responsibility for S-57 will be shared with those bodies:

   If IHO will restrict itself to the hydrographic charting application and does not take responsibility for providing the means to use S-57 as a vehicle for other applications, there will be a serious risk that others will take the lead in further development of S-

57. This may have the consequence that IHO is forced into undesired directions. There are already signs that this will occur.

This Question should be part of the present discussion within IHO about Strategic Aspects of the IHO.

NORWAY (Frode Klepsvik and Ole Kvamme)

In our opinion TSMAD should be asked for advice in this matter. The proposal and the advice given by TSMAD may then be discussed at the coming 1999 CHRIS Meeting.

Regarding the substance of the Finnish proposal, we support the objective, i.e. to increase the efficiency of the maintenance and further elaboration of the standard. However, we believe that standardization work should be done in a close relation to production environments rather than in a close relation to a policy/strategic body like the IHB. The present level of the S-57 ed 3 and the envisaged new developments may require a modified structure for standardization work compared to the present TSMAD. This question must be analyzed in further detail with emphasis on possible shortcomings of the present structure before making any decision in these matters. Generally we support arrangements allowing employees from the various HOs with significant expertise to participate in this kind of work for a given and limited time period. This opens for a better and more dynamic solution than having a more or less permanent WG working full time on a particular subject. Of course, an appropriate mix of these structures may be established if so required or found appropriate.

If a permanent standardization body is established, it is our opinion that it would probably be a better solution to seek a close relation between the core Technical Expert Group and an operational RENC. This also offers a closer relation to and cooperation with the ECDIS producer community.

RUSSIA (Admiral Anatoly Komaritsyn)

HDNO considers that finnish proposals are worth attention. Increasing complexity of S-57 during its development and inclusion in the Standard of additional things (e.g. Nautical publications, time-varying objects and etc), undoubtedly, will require the redefinition of CHRIS Working Groups. That is why we also consider that establishing a permanent Technical Expert Group of 3-5 persons to work full-time on
S-57 at IHB would be expedient.

SPAIN (Angel Chans)

We agree that it would be desirable that "coming" version of S-57 should make, if possible, general reference to standards used for coding and contents. It could be convenient for users to find this information easily available, wihout the need for a request to other organizations.

With regards to the Technical Expert Group (TEG), apart from understandable budgetary implications for the IHB, I should add that I do not understand where to find those experts. On the one hand, if they come from outside the "hydrographic world", they would need a long period of training to fit into the job. On the other, it should not be easy to find within HOs people with adequate qualifications and, if any, we should consider whether they would be better working full time in the IHB or taking part in an IHO Working Group.

Division of TSMAD into Working Groups

This proposal is related to the preceding one.

Working Groups dealing with specific subjects are a commodity, and it has been proved that TSMAD (former DBWG) has been fulfilling its tasks that way in practice.

So, we agree with the proposal to establish sub-groups dealing with specific subjects within TSMAD. Maybe one of these groups could be the aforementioned TEG.

CHRIS Committee and Working Groups

One of the TORs of CHRIS is the establishing a goals, as well as the coordination of efforts by all Working Groups which compose it; maybe this should be stressed, instead of confining it to simple report reading.

So, we consider that CHRIS organization, proceedings and meetings should pay more attention to tasks and relations with Working Groups, and among them.

Financing

The use of external experts is mentioned in CHRIS TORs, and we consider it as a very adequate solution.

On the other hand, the participation of Member HOs is also of essence, as noted during the last International Hydrographic Conference.

SWEDEN (Goran Nordström)

The proposal for Re-arrangement of the Standardization Work within the CHRIS Committee was already presented by Finland in the Nordic Hydrogaphic Commission meeting in January. It was supported among others by Sweden even as there would be some financial problems involved. Sweden has also taken part in the answer made by the Australia H.O.

Sweden fully understands the economical problems which will occur by fully following the original proposal but the proposal is very essential for the future work of standardization. An alternative could be that a TEG will be formed, harmonized and conducted by the Technical Expert on ECDIS and computers (i.e. Mr. Tony PHARAOH) already existing in

the IHB. The other members, not too many, may be experts from member countries with knowledge in designated areas essential for the work to be done. These persons should obviously also be familiar of hydrographic problems and solutions.

The other parts of the proposal is fully supported by Sweden with a special support to the remarks made by Australia.

UNITED KINGDOM (Christopher Drinkwater)

The Finnish proposal is very timely but providing a definitive answer to the many questions raised in it is far from easy.
The proposed working arrangements are, in fact, very close to the structure described in the TSMAD Working Group's current Terms of Reference. The split between "general" S-57 work and the development of specifc implementations could also be seen in the previous division of responsibility between the old Change Control Procedure (CCPWG) and Database (DBWG) Working Groups.
However, this division of responsibility has never worked. All members of the working group or groups have worked together as one team to develop the elements of S-57 (Basic Standard, ENC Product Specification, Use of the Object Catalogue) which were necessary before the ENC concept could be translated into reality. The magnitude of this task was such that no effort was available to address other issues such as the generation of new product specifications and the extension of the S-57 data model to accommodate new types of data.

However, TSMAD has discussed how best to proceed in the future. It has agreed that when introducing totally new concepts into S-57, such as a matrix data model, a raster data model or the ability to deal with true time varying objects, ISO standards will be adopted where they exist. Where they do not exist, but are being developed, the TSMAD will participate in the ISO development activity, although in practice I am not sure if the requisite resource or expertise will be available. Also, it is unclear what influence the TSMAD would have on the ISO development activity, both as regards the adequacy of the final solution and the times needed to reach it.

It is also the intention that specialist sub groups should be established to define the "product specifications" for new applications, for example digital bathymetry, digital publications and ice messages. It will also be necessary for an ENC sub group to continue its work. Again, the problem will be making the necessary experts available to do all this work, and then getting them to agree on requirements.

Another sub group of TSMAD will then turn these new requirement into "S-57 speak" or to be more pecise, a sub-set of "S-57 speak". In this model, the TSMAD sub group would be performing the role of the Technical Expert Group (TEG) proposed by Finland. Resources are again the problem. Staff knowledgeable in S-57 have many important roles to play in their own offices and there will be a limit to the amount of time they can spent on S-57 development work. I certainly think it is very unlikely that they could be made available full time to do such work, but even of they could I think that it would be better for them to

be based at a national hydrographic office surrounded by real production activity rather than at the IHB.

One possibility might be to contract out the S-57 development work to a commercial company if such a company exists and adequate funding can be found, possibly from a group of hydrographic offices. The TSMAD sub-group (or TEG) would have to specify and award the contract, monitor the work, and assess the results before accepting them but this may be quicker than doing all the work themselves - on the other hand it may take longer. Alternatively, a sub group of S-57 experts (or the TEG) could be given a limited time scale - say a month - in which to produce a new section of S-57 and work on that task continuously during that month. However, for this to succeed the group would have to be small and the members of other groups or sub groups would have to accept their results unless it could be shown that they were definitely wrong (in which case we chose the wrong people). This would be a departure from the current consensus method of working.

One of the concerns about the IHO's current method of working, is that a working group meeting say twice a year, and endeavouring to reach as much consensus as possible, can take two, three or four years to reach a result, whilst the pace of current technological change and the demands of the market may require a result within a year. To this extent, the solutions we arrive at in response to the Finnish concerns will play an important role in deciding the future relationship between the IHO and the maritime and manufacturing community. If our solutions take far too long to develop, commercial companies will pass us by and the role of the IHO, IHB and national hydrographic offices will be reduced accordingly.

It could be argued that it does not matter whether the future structure consists of an enlarged TSMAD composed of a number of sub groups or the TEG plus a number of other working groups. The main questions to address are the existence of the necessary expertise within hydrographic offices, the availability of that expertise when required (which may be for much longer periods per year than at present), the acceptability of contracting out work, and finding an accelerated method of decision making which possibly places less emphasis on consensus. I think that we need to reach agreement on these and similar issues before we decide on the best organisational structure.

In conclusion, if it is agreed that more resources are to be devoted to these issues then the Finnish proposal is probably better than the existing TSMAD one. However, this increased resource will itself require co-ordination and I do not believe that CHRIS meeting once a year will necessarily be adequate. One possibility would be a sub-set of CHRIS meeting two or three times a year -- but we are then back again to the question of resources!

USA (Chris Andreasen)

The United States (U.S.) is opposed to the proposal to restructure the Standardization work through the establishment of a Technical Expert Group (TEG) of 3-5 persons possibly working at the IHB. The U.S. has serious concerns for the cost implications. At the XVth I.H. Conference, the IHB was authorized to recruit an additional Professional Assistant to

work in the cartographic area and this cost Member States an increase of about 14% in the share value rather than the typical inflationary increase of about 5%. Per diem and travel costs associated with posting personnel to the IHB are not insignificant nor would be costs of permanent change of station as an alternative to per diem.

Also, it must be recognized that IHB is NOT a functional Hydrographic Office with the databases and production facilities necessary for test and evaluation. To outfit the IHB with production equipment and software would also be a very significant expenditure. An operational Hydrographic Office encounters the problems of working with ENC data on a routine basis, a dimension that would be missing if the TEG were based at IHB in Monaco.

The IHO has had a long history of Hydrographic Offices voluntarily supporting the needed standards work and the U.S. believes this approach should continue despite recognition that all Hydrographic Offices are in a period of stress with limited resources during this period of tremendous technological change.

While there are substantial issues to be addressed, the U.S. desires that IHO continue to evaluate not only those aspects of ECDIS related to hydrography and nautical charting but also the integration of data with the electronic chart display. Oftentimes this latter aspect requires expertise beyond that of a typical Hydrographic Office but participation can be expanded to include the necessary expertise, e.g., the U.S. Naval Meteorology and Oceanography Office Command has agreed to place a member on the IHO Marine Information Objects working group.

This response has been coordinated with both NOAA and Navy.