**20th CHRIS MEETING**
**Niterói, RJ, Brazil, 3-7 November 2008**

**FINAL MINUTES**

*Notes:*
1) *Paragraph numbering is the same as in the agenda (Annex D)*
2) *A list of acronyms used in this report is provided at Annex A*
3) *A list of actions agreed at CHRIS-20 is provided at Annex E*
4) *All documents referred to in these minutes are available from the CHRIS page of the IHO website (www.iho.int → Committees & WGs → CHRIS → List of CHRIS20 Documents)*
5) *Names of contributors are written in full the first time they appear in these minutes. Then, only the surname is shown.*

## 1. OPENING AND ADMINISTRATIVE ARRANGEMENTS

*Docs:* *CHRIS20-01A rev.10* *List of Documents (also Annex B)*
*CHRIS20-01B rev.6* *List of Participants (also Annex C)*
*CHRIS20-01C* *CHRIS - Contacts List*
*CHRIS20-01D* *Terms of Reference for CHRIS and related Working Groups*

Vice Admiral Luiz Fernando PALMER FONSECA, Director of the *Diretoria de Hidrografia e Navegação* (DHN) of Brazil, gave an opening speech and welcomed participants to the meeting. The Chair of CHRIS (Capt Vaughan NAIL, United Kingdom) opened the meeting. Ing. en chef Michel HUET (IHB) served as Secretary and introduced the above documents. Dr. Lee ALEXANDER (HGMIO) agreed to serve as Rapporteur. Capt Robert WARD, IHB Director, represented the Bureau.

Outcome:

- The Committee noted the documents introduced.

## 2. APPROVAL OF AGENDA

*Docs:* *CHRIS20-02A rev.10* *Agenda and Timetable (also Annex D)*

The Chair suggested that, under agenda item 6.1, the referred documents be addressed in the following order so as to be discussed in a more logical sequence: CHRIS20-06.1A, 06.1B, 06.1E, INF2, 06.1C, 06.1D and 06.1F. He also proposed that doc. CHRIS20-06.7A (MSDIWG Report) be addressed immediately following completion of agenda item 6.1, as the Chair of this WG would be leaving the meeting on the 3rd day. This was agreed.

Outcome:

- The Committee approved the agenda with minor timetabling adjustments (see Annex D).

## 3. MATTERS ARISING FROM MINUTES OF 19TH CHRIS MEETING

*Docs:* *CHRIS20-03A* *Minutes of CHRIS-19*
*CHRIS20-03B* *Status of Actions List from CHRIS-19*

The Secretary introduced the Minutes to CHRIS-19. No changes were proposed and the Minutes were therefore accepted. The Secretary went on to review the list of actions from CHRIS-19 and their current status. It was acknowledged that most of these actions had been completed.

Regarding Action 19/32, it was remarked that no WG Chairs are using the IHO's diagram - *the typical lifecycle of a standard* - when submitting their reports. Chair pointed out that this was an "as appropriate" option, and not a requirement.

Outcome:

- The Committee agreed the Minutes of CHRIS-19 as a true record.
- The Committee noted the list of actions reviewed.

## 4. DECISIONS OF OTHER BODIES AFFECTING CHRIS

### 4.1 WEND Committee

*Docs:* CHRIS20-04.1A *rev.2* *Outcomes from the 11th WEND Committee Meeting, Tokyo, Japan, 2-5 September 2008 (IHB)*

IHB (WARD) introduced this paper.

Referring to Action (c) required of CHRIS, i.e. "*Agree that the Baltic Sea Hydrographic Commission* (see paper CHRIS20-06.1F) *model for harmonizing ENCs on a regional basis should be reflected in the Annex to S-65 as a generic model*", France (Ing en chef Jean-Luc DÉNIEL) asked about the meaning of a "*generic model*"? Chair explained the need to modify existing guidelines in S-65 to better achieve an overall consistent approach.

Outcome:

- The Committee noted the paper and endorsed the proposals. Matters arising would be addressed in detail during other agendas items.

### 4.2 IMO

*Docs:* CHRIS20-04.2A *Report on IMO activities affecting CHRIS (IHB)*

IHB (Ward) introduced this report.

USA (Mr David ENABNIT) asked if a presentation similar to that which was given at NAV54, would also be provided at MSC85. IHB (WARD) stated that no presentation was planned, but that if asked, a prepared response would be provided by the IHO. USA (ENABNIT) also asked about the current level of IHO MS participation in e-Navigation. Chair asked for a show of hands which revealed 30% of delegates were actively participating in the e-NAV considerations. Further, most of these HOs were in close liaison with their maritime safety administration.

CIRM (Mr Michael RAMBAULT) mentioned the issue of maintaining up-to-date software versions in ECDIS equipment. Germany (Dr Mathias JONAS) stressed the importance of this matter, and suggested that this become a work item for CHRIS. RTCA (Mr Michael BERGMAN) also emphasized the importance of this issue since ECDIS are data-driven systems, e.g. data supply streams can affect performance. TSMAD (Mr Barrie GREENSLADE) wondered if this up-to-date requirement was well-understood? CIRM (RAMBAULT) mentioned that this could become part of ISM Code (Section 11). IHB (WARD) pointed out that this is already being considered as navigation equipment issue at IMO, and that ECDIS is only one type of equipment. CIRM (RAMBAULT) reminded CHRIS that NAV55 will be considering navigation software maintenance and any IHO assistance / involvement would be beneficial.

Outcome:

- The Committee noted the report.

- **Action 20/1** - **IHB** to submit a supporting paper to NAV55 on the relevance of software maintenance in ECDIS (based on the previous submission to NAV53).

### 4.3 ISO-TC211 (Geographic Information-Geomatics)

*Docs:* *CHRIS20-04.3A* *Report on ISO-TC211 activities affecting CHRIS (B. Greenslade)*

TSMAD (GREENSLADE) introduced this report. He highlighted those ISO TC211 standards that were of significance to S-100. He expressed some frustration that some of those involved in the development of ISO standards are "theorists" and not really interested in how the standards will actually be used. He also mentioned the issue of copyright and the possible need for payment for copying extracts of the ISO 19000 standards in S-100.

IHB (WARD) stated that despite requests from IHB, the ISO Administration in Geneva, Switzerland, has not answered or provided any definitive guidance on the use of ISO standards by IHO. Rep of Korea (Mr Jongmin PARK) indicated that NORI plans to adopt IHO S-100, and that they had concerns about ISO copyright restrictions. IHB (WARD) replied that MS concerns should be communicated to the Bureau. In his view, given the reciprocal benefits to be gained from the development of S-100, the developers of S-100 should be able to reference and use the relevant parts of ISO standards without any copyright restrictions.

Chair recommended that IHB may need to visit ISO in-person in Geneva to seek clarification.

Outcome:

- The Committee noted the report.

- **Action 20/2** - **IHB** to seek confirmation from ISO that relevant ISO standards can be used in relation to S-100 without copyright restrictions.

### 4.4 NATO-DGIWG (Digital Geographic Information W.G.)

*Docs:* *CHRIS20-04.4A* *Report on IHO liaison with DGIWG (B. Greenslade)*

TSMAD (Greenslade) introduced this report. There were no comments.

Outcome:

- The Committee noted the report.

### 4.5 IEC TC80 and RTCM (ECDIS and ECS)

*Docs:* *CHRIS20-INF4* *Report on IEC and RTCM Work Relating to Electronic Charting* (USA-NOAA)

USA-NOAA (ENABNIT) introduced this paper.

Germany (JONAS) wondered if there were any MS that intended to use the IEC 62376 Standard for ECS. USA-NOAA (ENABNIT) replied that the USA intends to use this as the basis for mandatory ECS carriage in USA waters.

Outcome:

- The Committee noted the report.

- **Action 20/3** - **MS** to consider contacting their IEC representatives and providing input to the consideration / acceptance of IEC 62376 - ECS Standard.[1]

### 4.6 North Sea Hydrographic Commission

*Docs:* *CHRIS20-04.6A* *Outcome of NSHC 28: definition and length of coastline (France)*

France (DÉNIEL) introduced this paper. France recommended that CHRIS establish a work item and volunteered that France take the lead on conducting a preliminary study. USA-NGA (Mr James MCGAUGHRAN) supported this effort and would join France in a cooperative study. UK (Mr Peter JONES) also supported this study, but felt that it may be difficult to accomplish. South Africa (Capt Abri KAMPFER) suggested, as a starting point, that IHO MS be polled about this matter. Germany (JONAS) suggested there it may in fact be possible to develop a 'generic model' for defining "coastline". HGMIO (ALEXANDER) mentioned that UNCLOS took a long time to develop a model definition of coastline for the purpose of UNCLOS boundary claims; he felt this may become both an IHO and UN matter.

Outcome:

- The Committee noted the paper.
- **Action 20/4** - **France** to further study the feasibility of a standardised approach to the determination of the length of coastlines and report to HSSC-1.
- **Action 20/5** – **IHB** to invite CHRIS Members to participate in the study led by France on the determination of the length of coastlines.

## 5. LIAISON WITH INDUSTRY

### 5.1 Consideration of Feedback Items from ECDIS Stakeholders

*Docs:* *CHRIS20-05.1A* *Outcomes from the S-101 Workshop, Monaco, 4-6 March 2008* (IHB)

IHB (WARD) summarized this paper, which included a number of proposed issues for consideration by the relevant IHO bodies. Chair suggested reviewing each of the identified issues, and determining if and/or how CHRIS should take on as an action item.

1. *S-101 should describe the ENC product produced by HOs – not the product finally delivered by a Distributor.*
   - Possible action: TSMAD / S-101 TG

   Germany (JONAS) suggested that this also involves the data. USA-NOAA (ENABNIT) felt that this matter needs to be discussed further before deciding whether to take on a task.

2. *Dynamic tides should be implemented in ECDIS as soon as possible with appropriate safeguards being put in place.*
   See CHRIS20-05.1C below.

3. *An MIO is an appropriate way to deal with tidal stream information.*
   - Possible action: TSMAD / SNPWG / HGMIO

[1] The closing date for final voting on IEC62376 was 5 December 2008. This was too soon after CHRIS-20 for IHB to release a CL and expect HO's to react and provide any meaningful input to their respective standards organizations. Therefore a CL was not issued.

HGMIO (ALEXANDER) stated that this is already under consideration by HGMIO, and that real-time dynamic information will likely be provided via AIS binary messages.

4. *ENC licences and permits should not require significant end-user management or intervention. Simplification of the processes is required to make it less complicated for the customer.*
   - Possible action: IHO MS / RENCs / WEND / DPSWG

5. *The IHO through the IHB should participate in the IMO Subcommittee on the Safety of Navigation (NAV) Work Item concerning maintenance of navigation software, to seek a logical division between type approval for hardware, software and software updating.*
   See section 4.2.

6. *IHO S-52 - Specifications for Chart Content and Display Aspects of ECDIS requires major revision. This will require expert contributor input and most likely will involve specialist contractor support to achieve.*
   - Possible action: CSMWG. See also section 6.3.

   CSMWG (JONAS) explained that in the near future, there will be innovative ways to display chart information. CIRM (RAMBAUT) mentioned that some CIRM members do not wish for IHO to decide how to display ENC information. CSMWG (JONAS) pointed out the benefit of uniformity and consistency.

| Outcome: |
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| - The Committee noted the paper. |

*Docs:* *CHRIS20-05.1B* *Outcomes from the 4th ECDIS Stakeholders' Forum, Tokyo, Japan, 3-4 September 2008 (IHB)*

IHB (WARD) introduced this paper. There were no comments.

| Outcome: |
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| - The Committee noted the paper. |

*Docs:* *CHRIS20-05.1C* *Dynamic Water Depths in ECDIS (IHB)*

IHB (WARD) introduced this paper.

Chair commented that the capability to incorporate dynamic tidal modeling in electronic charts is already in use in some ports. Canada (Dr Savithri NARAYANAN) pointed out that reliable tidal models are needed for this type of capability. USA-NOAA (ENABNIT) fully supported the conclusion, i.e. that there was a need to allow tidal information to be used directly with ENC depth information in ECDIS, but did not believe that the reason listed in para. 6 was the main reason for not altering the content of the ENC. He believed that this should be considered by CHRIS in partnership with the Tidal WG because an important issue is the data and algorithm(s) to be used in adjusting the depths which is more appropriately handled by the TWG.

TSMAD (GREENSLADE) believed this was a good idea, but required further technical study. He suggested that some of the wording contained in S-52, Art. 4.3 should be reconsidered. Portugal (LtCdr António Martins PINHEIRO) mentioned that marine pilots in Lisbon are already using this capability. Australia (Mr Jeff WOOTTON) believed that HOs would have to give resource consideration to the provision / maintenance of this capability. South Africa (Capt Abri KAMPFER) supported the concept, but believed that further study was needed. Canada (NARAYANAN) felt that there may be significant costs associated with allowing this capability in ECDIS. USA-NOAA (ENABNIT) believed that water level was a more appropriate descriptor than just tidal (see also section 9.1).

| Outcome: |
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- The Committee noted the paper.
- The Committee agreed that the introduction of a dynamic water height capability in ECDIS / ENCs merits urgent consideration.
- **Action 20/6** - **TSMAD** in consultation with TWLWG, CSMWG and other relevant HO bodies to develop proposals to enable the use of tidal and water height information to adjust charted depths in S-57 based ECDIS equipment for consideration by HSSC-1.

*Docs:* *CHRIS20-INF5* *Data Chain Certification Concept (RTCA)*

RTCA (BERGMANN) introduced this topic and gave a presentation on "Marine Data Flow".

On request from UK (JONES), RTCA (BERGMANN) confirmed that this effort should involve the DPSWG. Canada (NARAYANAN) asked about the bureaucracy and organizational structure that would be required. RTCA (BERGMANN) answered that, in the aviation community, the participants are willing to bear the costs. TSMAD (GREENSLADE) commented that S-100 would bring a wider variety of metadata that could be included in the ENC data stream. RTCA (BERGMANN) commented that there should be the same level of consistency and uniformity, as in the aviation world.

Chair summarized that this work would occur during the next year. DPSWG were encouraged to participate.

Outcome:

- The Committee noted the paper.
- **Action 20/7 – IHB** to encourage MS to participate in the RTCA Correspondence Group on Data Chain Certification Concept.
- **Action 20/8** - **RTCA Correspondence Group** to liaise with DPSWG.
- **Action 20/9** - **RTCA Correspondence Group Leader** to report on progress to HSSC-1.

### 5.2 Open ECDIS Forum

*Docs:* *CHRIS20-05.2A* *Report on Activities of the Open ECDIS Forum (L. Alexander, USA-UNH and OEF Board of Advisors)*

OEF (ALEXANDER) introduced this report. There were no comments.

Outcome:

- The Committee noted the report.

## 6. REPORTS BY CHRIS WORKING GROUPS

### 6.1 Transfer Standard Maintenance and Application Development (TSMAD)

*Docs:* *CHRIS20-06.1A rev.1* *Report of TSMAD (B. Greenslade, UK, Chair)*

TSMAD (GREENSLADE) introduced his report and gave a presentation. The following issues were addressed:

1. Digital Paper Chart Product Specification. TSMAD (GREENSLADE) asked if the requirement for this product specification was still valid? Finland (Mr Juha KORHONEN) suggested retaining it, even if not active, until the next meeting, i.e. HSSC-1. CSPCWG (JONES) commented that CSPCWG did not have this item on its work program. TSMAD (GREENSLADE) believed that there needs to be a definitive requirement and a Task Group

leader identified before committing to reactivate the work item. IHB (WARD) commented that input would be needed from expert industry contributors regarding the requirement for this product specification. He believed that a strong justification was needed. Sweden (Mr Hans ENGBERG) agreed that this work item can remain dormant, but believed that S-101 may influence this in the future. The Improved Data Exchange Working Group of the Nordic Hydrographic Commission is working with issues closely related to this matter and the working group will report to the 53rd NHC Meeting. Chair suggested leaving this work item dormant for a year, which was agreed.

2. S-100. There were no comments.

3. S-101. There were no comments.

4. Marine Environment Protection Product Specification. TSMAD (GREENSLADE) reported that the MEP Task Group had met in San Francisco (USA), the report of which is attached as Annex to CHRIS20-06.1A. Brazil (Capt Wesley W. CAVALHEIRO) supported the MEPTG proposals, i.e. 1*) MEPTG develops a marine protected area feature in the hydrographic register*; 2) *SNPWG registers other features and attributes*; 3) *MEPTG completes the P.S. based on the above actions*; and 4) *MEPTG continues investigating coral reef ecosystems to achieve internationally agreed classification*. Canada (NARAYANAN) mentioned that Canada has an internal requirement for including more ecosystem information in chart products. MEPTG Chair (Mr Craig WINN) commented that there was international environmental participation in MEPTG. UK (JONES) and USA (ENABNIT) supported the continuation of the work.

   Chair summarized: the MEP effort has merit but should not deflect IHO/CHRIS from other important work.

5. Navaid discrepancy. TSMAD (GREENSLADE) explained that time varying attributes have recently been implemented by OEMs after inclusion of additional tests in IEC 61174. However, topmark objects do not carry temporal attributes (DATSTA, DATEND, PERSTA, PEREND) and the Master / Slave concept between object classes has not been implemented in presentation rules by OEMs (there are no definitive instructions for implementation included in S-52 Presentation Library). Chair said that this shortcoming needs to be corrected as a matter of urgency. TSMAD (GREENSLADE) believed that a solution may involve a change to S-57 Ed. 3.1.1 (new objects / attributes to be added to the Object Catalogue) within the next year. Germany (JONAS) commented that this could require a change to ENC production software, but not on ECDIS software in use onboard a ship. Netherlands (Mr Jan SCHAAP) felt it would be useful to consult industry before taking any decision on this matter.

   TSMAD (GREENSLADE) introduced paper CHRIS20-WP1 *S-57 Temporal attribution*, proposing a minor revision to S-57 through a new supplement. Sweden (ENGBERG) pointed out that supplements to S-57 Ed. 3.1 had previously been announced as those required to respond to new IMO requirements. There are a number of other issues that are not certain as well and CHRIS therefore needs to be careful. Australia (WOOTTON) supported Sweden's view and believed that there needs to be a clear requirement before correcting a deficiency. Canada (NARAYANAN) was willing to approve in principle, but wanted to consult with CHS staff before agreeing. South Africa (KAMPFER), like Canada, wanted to have more technical information before making a decision. TSMAD (GREENSLADE) suggested that the CATZOC changes (see section 6.6) also need to be handled as a supplement – ideally together with the supplement for temporal attribution. IHB (WARD) explained the process used for S-57 3.1.1. He also said that on this matter there are several options with no clear solution. One option would be to develop a solution and have at least 3 MS make a proposal for consideration and approval at EIHC-4.

   After discussion, Chair summarized: A warning CL needs to be issued alerting MS as soon as possible, with a proposed solution; also, TSMAD will issue "clarifications and corrections" via an Encoding Bulletin and will further develop / investigate possible revisions to S-57 temporal attribution and "master / slave" relationships; then this matter may be put on the Agenda of EIHC-4. A future Supplement S-57 3.1.2 would include solutions to address the identified deficiencies in both CATZOC and Temporal Attribution.

Outcome:

- The Committee noted the report and the recommendations, and endorsed the proposed TSMAD Work Plan.
- The Committee acknowledged a paper prepared by the Chairman TSMAD on S-57 Temporal attribution and "master / slave" relationships (see CHRIS20-WP1 at Annex F), but considered that the proposals in that paper should be further developed.
- **Action 20/10 – IHB** to invite the Nordic Hydrographic Commission to report to HSSC-1 on the results of the Improved Data Exchange Working Group and the possible need for an S100-based data exchange standard for paper charts.
- **Action 20/11** - **IHB** to issue a "warning" CL to MS and NGIOs regarding issues relating to S-57 temporal attribution and "master / slave" relationships, taking into account CHRIS20-WP1.
- **Action 20/12** - **TSMAD** to issue an encoding bulletin regarding issues relating to S-57 temporal attribution and "master / slave" relationships, based on CHRIS20-WP1.
- **Action 20/13** - **TSMAD** to urgently consider by correspondence revisions to S-57 temporal attribution and "master / slave" relationships, taking into account CHRIS20-WP1.
- **Action 20/14** - As soon as practicable and subject to no adverse findings from TSMAD, **volunteer MS's** may wish to submit a late proposal to the 4th EIHC seeking approval for an amending Supplement to S-57 (S-57 3.1.2) containing revisions to S-57 temporal attribution and "master / slave" relationships which would also include amendments to CATZOC parameters and definitions (see Action 20-25).

*Docs: CHRIS20-06.1B rev.1 Governance and Management Arrangements for the IHO Information Registry (IHB and TSMAD Chair)*

IHB (WARD) introduced this paper. He mentioned that the IHO is committed to implement the IHO Geospatial Information Infrastructure (GII) Registry, but there may not be the necessary resources, either in IHB or from MS, to manage it.

USA (ENABNIT) acknowledged that this effort is necessary and supported the proposed approach. However, he had problems with the wording contained in paras. 10-14 of Annex A to CHRIS20-06.1B rev.1, particularly as it pertains to SOLAS. UK (JONES) agreed with the need to re-word Annex A based on CHRIS20-WP3 (see Annex H), which was accepted.

After discussion, Chair summarized that the Committee:

a) Endorsed the proposals as provided in Annexes A, B and C to CHRIS20-06.1B rev.1;
b) Agreed that IHO would be the Registry Owner and HSSC the Control Body of the IHO GII Registry.

He added that it remained to be decided how the Registry should be managed.

Germany (JONAS), supported by UK (JONES), believed that this request for additional resources was more subject to a consideration of needs of enhanced technical capabilities rather than an organizational matter. As such, IHB would need to increase its technical expertise to handle this matter. South Africa (KAMPFER) agreed with the requirement, but believed that MS should be contacted to see if there are volunteers to do some of this work. TSMAD (GREENSLADE) provided a brief overview of the responsibilities involved.

Chair stated there appeared to be 4 basic options to manage the IHO GII Registry:

1. Permanent IHB staff member;
2. MS secondment to IHB;
3. A MS performs the task, i.e. external to IHB;
4. Contractor to IHB.

Portugal (PINHEIRO) supported option #2. Canada (NARAYANAN) felt that MS should be contacted, but believed that this may be a full-time job. She added that Canada would prefer to take on some of the tasks rather than provide additional funding. RTCA (BERGMANN) felt there would be a substantial workload.

Chair believed that IHB should issue a CL outlining the various options, with costs and resources involved. MS could then offer their opinions on the best way forward. Ideally, it would be possible to have a proposal for EIHC-4. IHB (WARD) explained the process needed to submit a proposal to EIHC-4. Netherlands (SCHAAP) suggested that a recommendation should be made by the Committee. IHB (WARD) agreed and emphasized that a clear commitment needed to be made on S-100, in general, and the IHO GII Registry, in particular. South Africa (KAMPFER) believed that MS support was the best interim solution. TSMAD (GREENSLADE) supported this view and suggested that the care and maintenance of the IHO GII Registry can continue to be performed by the UKHO in the near term until a more permanent arrangement is determined. This was agreed.

Outcome:

- The Committee noted the paper.
- The Committee endorsed the existing and proposed management arrangements of the GII as set out in paper CHRIS20-06.1B and Annexes, taking into account the proposed amendments in CHRIS20-WP3 (see Annex H).
- The Committee agreed that HSSC is the appropriate control body for the GII.
- **Action 20/15** - **IHB** to develop a proposal to the 4th EIHC for the long-term support and governance of the GII, taking into account CHRIS20-WP3 (to be combined with Action 20/16).

*Docs:* *CHRIS20-06.1E* *Adoption and Publication of IHO S-100 - The Hydrographic Geospatial Standard for Marine Data and Information (TSMAD Chair)*

TSMAD (GREENSLADE) introduced this paper.

He stated that overall control of S-100 would be through the HSSC; believed that a CL on S-100 decision needed to be issued; and predicted that S-100 would be fully edited by mid-2009.

Netherlands (SCHAAP) was concerned that there might be a risk in going forward with S-100 without deciding how the IHO GII Registry would be managed, first. South Africa (KAMPFER) was also concerned about portrayal issues. TSMAD (GREENSLADE) responded that S-100 is a standard that needs to be published, whereby the GII is an infrastructure/management system required to use S-100. RTCA (BERGMANN) felt it was an appropriate time to publish S-100, but it may need an implementation plan. RTCM (Mr Rafael PONCE) agreed, mentioning that the standard had to first be published before it would be implemented into software tools. HGMIO (ALEXANDER) supported the proposal that S-100 be published, but pointed out that the current standard is difficult for most persons – not involved in its development -- to understand. As such, a companion User Guide may need to be developed.

*Docs:* *CHRIS20-INF2* *United States endorsement of S-100*

USA-NOAA (ENABNIT) introduced this paper. He said that USA endorsed S-100 and believed, supported by UK (JONES), that it should be submitted to EIHC-4 for adoption.

Outcome:

- The Committee noted the 2 papers.
- The Committee agreed the roles and responsibilities for maintenance and approval of changes to S-100 as proposed in CHRIS20-06.1E.
- The Committee agreed that S-100 should be promoted to an active IHO standard.
- **Action 20/16** - **IHB** to develop a proposal for consideration by the 4th EIHC to adopt S-100 as a live standard.

*Docs:* *CHRIS20-06.1C rev.1* *Temporary (T) and Preliminary (P) Notices to be used with ENCs (France)*

France (DÉNIEL) introduced this topic.

IHB (WARD) mentioned that this matter of T&Ps has been raised previously at ESF-4 and at WEND-11 in late September. He recommended that the entire issue of updating needs be addressed, including whether more comprehensive guidance needs to be issued, e.g. in S-52.

Japan (Dr Fujita MASAYUKI) believed that this matter was significant. Particularly, as it relates to the mandatory carriage of ECDIS. Germany (JONAS) suggested that the technical experts of both RENCs should be consulted as to recommended solutions. Norway (Capt Gerry LARSSON-FEDDE) agreed with Japan as to the importance of this issue and, following Germany's suggestion, offered to contact the two RENCs about this matter. TSMAD (GREENSLADE) asked that any agreed solutions be provided to the S-101 sub-group of TSMAD. Chair requested that the recommended solutions be also reported to HSSC-1 in 2009. UK (JONES), based on earlier experience of the (former) Chart Standardization Committee, pointed out the difficulty in agreeing on a consistent MS approach to T&Ps and means/process of updating.

France (DÉNIEL) agreed to coordinate this activity as an ENC Updating WG under HSSC, with primary focus on T&Ps. Terms of Reference for this new WG were prepared, discussed and agreed during the meeting as CHRIS20-WP2 (see Annex G). France will Chair the ENC Updating WG; UK will serve as Vice Chair.

Outcome:

- The Committee noted the paper.
- The Committee agreed that the RENC Technical Experts Working Groups (TEWG) should be involved in developing a suitable way ahead.
- The Committee agreed that an ENC Updating WG be convened and led by France.
- The Committee approved Terms of Reference for the ENC Updating WG (see CHRIS 20-WP2 at Annex G).
- **Action 20/17** - **IHB** to issue CL inviting MS to participate in the ENC Updating Working Group (EUWG), based on CHRIS20-WP2.

*Docs: CHRIS20-06.1D rev.2 Canadian position regarding CHRIS19-06.1C – Recommendations for Consistent ENC Data Encoding (Canada)*

Canada (NARAYANAN) introduced this topic and gave a presentation. Use of the SCAMIN attribute of S-57 was the major focus of the CHS paper. TSMAD (GREENSLADE) commented that it was TSMAD that developed the SCAMIN recommendations, and not IC-ENC as inferred in the paper. Also, that those recommendations were only "the minimum requirement".

Outcome:

- The Committee noted the paper.

*Docs: CHRIS20-06.1F ENC harmonisation on the Baltic Sea (Denmark & Finland)*

Finland (KORHONEN) introduced this topic and gave a presentation.

Chair felt this was a very comprehensive report that provides useful insight on identifying the problems, and towards developing practical solutions. Australia (WOOTTON) had reviewed this paper and felt that it was applicable to the SWPHC. UK (Mr John PEPPER) agreed with Australia and would look to a similar approach for NSHC.

Outcome:

- The Committee noted the paper.

- The Committee endorsed the concept of a regional approach to the application of the recommendations in S-65 Appendix A – *Recommendations for Consistent ENC Data Encoding* and recommended the BSHC implementation model described in CHRIS20-06.1F as a basis for other RHCs to follow.
- **Action 20/18** - **TSMAD** to review S-65 Appendix A – *Recommendations for Consistent ENC Data Encoding* and revise as necessary to take into account the practical experience of Canada and the BSHC (see CHRIS20-06.01D and CHRIS20-06.1F) regarding the regional implementation of the guidelines.
- **Action 20/19** - **IHB** to draw MS attention to the BSHC regional model for the implementation of S-65 Appendix A - *Recommendations for Consistent ENC Data Encoding* and the endorsement of WEND and CHRIS regarding this approach.

### 6.2 Data Protection Scheme (DPSWG)

*Docs:* *CHRIS20-06.2A* *Report of DPSWG (J. Pritchard, UK, Chair)*

UK (JONES) introduced this report on behalf of the Chair DPSWG. He drew attention to the paucity of MS actively participating in the WG. There were no comments.

Outcome:

- The Committee noted the report and endorsed the proposed DPSWG Work Plan.

### 6.3 Colours and Symbols Maintenance (CSMWG)

*Docs:* *CHRIS20-06.3A* *Report of CSMWG (M. Jonas, Germany, Chair)*

CSMWG (JONAS) introduced his report and gave a presentation. He outlined the following issues, requiring decision by the Committee:

1. Coding of linear depth areas. He asked that the Committee endorse its discontinuation from 1 January 2009. This was agreed.

2. Revision of S-52. He proposed the following 3 new work items to his WG Work Plan in order to address the revision of S-52.
   - Re-structure S-52 including annexes under consideration of the recent revisions of applying documents of IMO and IEC.
   - Liaise with IEC to harmonize the resulting new draft of S-52 with IEC61174 and IEC62288 through the Chairman of IEC/TC80.
   - Present a re-drafted S-52 to HSSC-1.

   This was agreed. He also drew attention that some alterations in his WG Terms of Reference were needed to reflect responsibility for revising S-52. Revised TOR were agreed (see Annex K).

3. Pick report presentation. He asked that the Committee endorse the approach outlined in Annex B to CHRIS20-06.3A for the further development by the WG of pick report presentation guidelines. This was agreed.

4. Transition of S-52 PresLib to S-100/101. He asked that the Committee endorse the transition plan of the S-52 Presentation Library (PresLib) to S-100/101 assisted by an external contractor, as proposed in Annex A to CHRIS20-06.3A. This was agreed. South Africa (KAMPFER) asked who was paying? IHB (WARD) responded that, currently, the contractor is paid from the proceeds of sales of the PresLib, although there are limited funds available.

5. New name for the WG. He asked the Committee to endorse the renaming of CSMWG to Digital Information Portrayal WG (DIPWG). This was agreed.

Outcome:

- The Committee noted the report and endorsed the proposed CSMWG Work Plan, including the above 3 new work items on revising S-52.
- The Committee agreed renaming of CSMWG to Digital Information Portrayal WG (DIPWG).
- The Committee agreed above new work items to the DIPWG Work Plan to address the revision of S-52.
- The Committee agreed revised Terms of Reference for DIPWG to reflect responsibility for revising S-52 (see Annex K).
- The Committee agreed that the encoding of linear depth areas cease from 1 January 2009.
- **Action 20/20**- **TSMAD** to release an Encoding Bulletin on discontinuing the encoding of linear depth areas from 1 January 2009.
- **Action 20/21** - **DIPWG** to undertake a revision of S-52, including all annexes.
- **Action 20/22** - **DIPWG** to further develop pick report as proposed in CHRIS20-06.3A.

### 6.4 Standardization of Nautical Publications (SNPWG)

*Docs:* *CHRIS20-06.4A* *Report of SNPWG (D. Acland, UK, Chair)*

SNPWG (Mr David ACLAND) introduced his report. He mentioned that the SNPWG work program will likely proceed more slowly than planned due to limited MS participation. There were no comments.

Outcome:

- The Committee noted the report and endorsed the proposed SNPWG Work Plan.
- The Committee agreed that more MS involvement is required in order that the agreed WP timetable can be achieved and that the increased frequency of meetings is justified.

### 6.5 Chart Standardization and Paper Chart (CSPCWG)

*Docs:* *CHRIS20-06.5A* *Report of CSPCWG (P. Jones, UK, Chair)*

CSPCWG (Jones) introduced his report. He noted that, following-up the proposals in CHRIS20-04.1A, it was agreed that the following work items would be added to the CSPCWG Work Plan:

- Develop guidelines for the preparation and maintenance of small/medium scale ENC schemes and reflect these in S-65 or through a new document similar to M-11.
- Develop Terms of Reference and Rules of Procedure for INT chart coordinators (to also address small/medium ENC schemes) and reflect these in M-11 Part A.

USA-NOAA offered to prepare an Information Paper on Emission Control Areas (see also CSPCWG5-08.9A).

Outcome:

- The Committee noted the report and endorsed the proposed CSPCWG Work Plan, including the above two additional work items.
- **Action 20/23** - **CSPCWG** to develop ToR / RoP for INT Chart Coordinators.
- **Action 20/24** - **CSPCWG** to develop guidelines for preparation & maintenance of small / medium scale ENC schemes.

### 6.6 Data Quality (DQWG)

*Docs:* *CHRIS20-06.6A* *Report of DQWG (S. Smith, USA-NOAA, Chair)*

Brazil (LtCdr Sebastião S. de OLIVEIRA) introduced this report on behalf of the DQWG Chair. He drew attention to the recommendation by DQWG for making the definition changes to CATZOC as detailed in Appendix 1 to CHRIS20-06.6A.

Chair stated the option of endorsing the proposed CATZOC description. South Africa (KAMPFER), supported by USA-NOAA (ENABNIT), suggested that CHRIS-20 make a decision. Canada (NARAYANAN) was generally in favor of the proposal but wondered when this would be implemented? France (DÉNIEL) supported the proposed solution, although France had not had a chance to participate in the DQWG. Finland (KORHONEN) mentioned that Finland is using the existing CATZOC categories and raised a concern that if the CATZOC quality definitions are weakened it may weaken the impression of the quality of the Finnish data. However, based onthe arguments presented he could agree to the proposal as an interim solution. He also mentioned that Finland intends to participate in the WG. HGMIO (ALEXANDER) explained the basis for the development of the "revised" CATZOC. IHB (WARD) reminded that S-57 is currently frozen and therefore cannot be easily amended. TSMAD (GREENSLADE) suggested that the revised CATZOC could be included in the proposed supplement 3.1.2 to S-57. This was agreed.

Outcome:

- The Committee noted the report and endorsed the proposed DQWG Work Plan.
- The Committee agreed amended CATZOC definitions and that the revised definitions be implemented through a Supplement to S-57.
- **Action 20/25 – IHB and Chair TSMAD** to bring amended CATZOC definitions into force through a supplement to S-57. (See also Action 20/14)

### 6.7 Marine Spatial Data Infrastructure (MSDIWG)

*Docs:* *CHRIS20-06.7A* *Report of MSDIWG (J. Pepper, UK, Chair)*

MSDIWG (PEPPER) introduced his report and gave a presentation.

USA-NOAA (ENABNIT) commended the report. He noted however that it did not say what should be the role of IHO MS to develop a SDI approach. He also felt it was perhaps too early to develop an MSDI website. Chair stated that a Cook Book would be useful to MS.

IHB (WARD) commented that while this work was useful, it was important for CHRIS to determine if it was what was asked to be provided, i.e. "*Defining the role of IHO in advising MS regarding SDI*". He felt there really needed to be a CHRIS recommendation on SDI policy to EIHC-4. Chair suggested that a small group develop such recommendations during the meeting. This was agreed and Netherlands, Portugal, USA-NOAA and Chair of MSDIWG offered to participate. The drafting group met and reported later in the meeting, proposing a Technical Resolution to the EIHC-4 as CHRIS20-WP4 which was agreed (see Annex I). Chair noted that, as the work was incomplete, MSDIWG would report further to HSSC-1.

IHB (WARD) reminded about an MSDI Seminar that was being organized by the IHB in Havana, Cuba on 9 February 2009, as part of the Geomatica 2009 Congress.

Outcome:

- The Committee noted the report and endorsed the proposed MSDIWG Work Plan.
- The Committee endorsed supplementary summary of outcomes prepared by a drafting group (see CHRIS20-WP4 at Annex I).

- **Action 20/26** - **IHB** to prepare a proposal for the 4th EIHC based on the MSDIWG report and CHRIS20-WP4.

### 6.8 Hydrography and Cartography in Inland Waters (HCIWWG)

*Docs: CHRIS20-06.8A rev.1 Report of HCIWWG (W. Cavalheiro, Brazil, Chair)*

HCIWWG (CAVALHEIRO) introduced his report and gave a presentation.

Chair commended the completion of this work, but wondered if the report actually addressed the tasks assigned by the IHC in 2007. IEHG (Ms Denise LADUE) noted that the report recognizes the significant role of IEHG and recommended the report be endorsed. France (DÉNIEL) believed that it would be a difficult task for RHCs to consider these matters and that continued WG efforts on this matter may divert HO resources from attending to maritime matters. Argentina (Cdr Fabian Alejandro VETERE) supported the results of the report. South Africa (KAMPFER) agreed and noted its importance to Africa. He added this is something that can be addressed by a regional approach to capacity building needs.

Chair supervised minor editing of the IHO Resolution contained in Annex G to CHRIS20-06.8A rev.1. This resulted in a proposed Technical Resolution to EIHC-4 as CHRIS20-WP5 (see Annex J). Referring to Annex B to CHRIS20-06.8A rev.1, there was also some concern about deciding on what should be the definition of "inland waters". After discussion, the following 'working definition', i.e. for the purpose of these minutes, was agreed:

Navigable Inland Waters - *Those navigable areas of water, within land boundaries, such as rivers, lakes, lagoons, channels, etc., that cannot be considered as maritime water, and upon which vessels need to navigate and for which navigational supporting tasks, such as hydrography and nautical cartography, are required.*

Outcome:

- The Committee noted the report and endorsed the recommendations.
- The Committee agreed an interim definition of "navigable inland waters", as above.
- The Committee endorsed supplementary summary of outcomes (see CHRIS20-WP5 at Annex J).
- The Committee agreed that the work of HCIWWG is finished and therefore disbanded the WG.
- **Action 20/27** - **IHB** to prepare a proposal for the 4th EIHC based on the HCIWWG report and CHRIS20-WP5.
- **Action 20/28** – **Hydrographic Dictionary WG** to consider developing a definition for "navigable inland waters".

## 7. INTER-ORGANIZATIONAL BODIES

### 7.1 IHO/IEC Harmonization Group on Marine Information Overlays (HGMIO)

*Docs: CHRIS20-07.1A Report of HGMIO (L. Alexander, USA-UNH, Chair)*

HGMIO (ALEXANDER) introduced his report. He noted the action required of CHRIS to reaffirm the need to establish a MIO Register for S-57 objects / attributes, product specifications, and portrayal.

USA-NOAA (ENABNIT) stated that HGMIO is a cluster of areas of interest, and not thematic, whereas one needs to have "thematic registers". HGMIO (ALEXANDER) clarified how the various MIO sub-categories are in fact thematic. He added that TSMAD was tasked to decide if a hydro-related MIO register was to be created under the IHO GII, and that anybody can propose a new register, providing the procedures outlined in the IHO GII Registry paper (CHRIS20-06.1B rev.1) are followed.

Chair believed that it was too early to establish an MIO register, and suggested that a proposal on the matter be submitted to HSSC-1. This was agreed.

Outcome:

- The Committee noted the report.
- **Action 20/29**- **TSMAD** to further develop the infrastructure described in CHRIS20-06.1B Annex A for the governance and management of the GII, to decide if a hydro-related MIO register is to be created, and report to HSSC-1
- **Action 20/30** - **TSMAD** in consultation with HGMIO to propose arrangements to HSSC-1 that accommodate the "miscellaneous" S-57 objects currently registered on the OEF.

*Docs:* *CHRIS20-07.1B rev.1* *Role and Status of HGMIO (IHB & Chair HGMIO)*
*CHRIS20-07.1C* *Role and Future of HGMIO (USA-NOAA)*

IHB (WARD) introduced the first paper, suggesting that HGMIO be retired as a CHRIS/HSSC WG and proposing to set up an HSSC Technical Outreach Panel to provide technical liaison between non-IHO groups using S-57, S-100 or other related IHO standards. USA-NOAA (ENABNIT) introduced the second paper agreeing to dis-establish HGMIO but suggesting the assignment of a work item to TSMAD to perform "application development" of the IHO geospatial standards instead of establishing a Technical Outreach Panel. This option was supported by UK (JONES). After discussion, it was agreed that outreach functions should be addressed by TSMAD.

Outcome:

- The Committee noted the 2 papers.
- The Committee agreed that HGMIO be retired as a CHRIS WG.
- The Committee decided that a HSSC Technical Outreach panel, as proposed in CHRIS20-07.1B, was not needed but that outreach functions should be addressed by TSMAD, as outlined in CHRIS20-07.1C.
- **Action 20/31** - **IHB and Chair TSMAD** to review ToRs and RoPs for TSMAD to ensure that the proposed TSMAD outreach functions outlined in CHRIS20-07.1C are addressed.

### 7.2 Inland ECDIS

*Docs:* *CHRIS20-07.2A* *Status Report on Inland ENC development (Denise LaDue, USA, Co-Chair IEHG)*

IEHG (LADUE) introduced this report. There were no comments.

Outcome:

- The Committee noted the report.

## 8. OTHER CHRIS BUSINESS

### 8.1 Review of M-3

*Docs:* *CHRIS20-08.1A rev.1* *Revision of M-3 "IHO Resolutions" (IHB)*

IHB (HUET) introduced this topic and reported that a comprehensive review of all relevant IHO Technical Resolutions (136 TRs in total were allocated to CHRIS for review) was undertaken by the CHRIS Chair Group during CHRIS-20. For each TR a final decision was taken by the Chair Group, which has been marked in green colour in Annex A to CHRIS20-08.1A rev.1.

Outcome:

- The Committee noted the paper.
- The Committee endorsed the Chair Group review of the proposed amendments to M-3 (see CHRIS20-08.1A rev.1).
- **Action 20/32** - **IHB** to circulate all CHRIS recommendations on M-3 Technical Resolutions to MS for approval.

## 9. TRANSITION TO HSSC

### 9.1 Integration of non-CHRIS groups in HSSC

*Docs:* *CHRIS20-9.1A rev.1* *Transition to HSSC (IHB)*
*CHRIS20-INF3* *Proposed amendments to the Draft TORs for Tidal Working Group (Finland)*

IHB (WARD) introduced this topic.

Finland (KORHONEN) suggested to combine tidal and sea level under the same WG, as reflected in CHRIS20-INF3. Sweden agreed, noting that rising sea level is a growing concern. USA-NGA (MCGAUGHRAN), supported by Brazil (CAVALHEIRO), proposed that tidal and water level would be more appropriate. Canada (NARAYANAN) commented that sea level is an oceanographic subject and that there should be more cooperation between IHO and IOC-GLOSS. USA-NOAA (ENABNIT) endorses Canada's comments.

After discussion, it was agreed to accept the TOR with the amendments proposed by Finland, and using the term "water level" (see Annex L), and that the WG be renamed Tidal and Water Level Working Group (TWLWG).

Outcome:
- The Committee noted the 2 papers.
- The Committee approved ToRs for Tidal WG with amendments to title and procedures to encompass "tides and water level" (see Annex L).
- **Action 20/33** – **Hydrographic Dictionary WG** to propose ToRs, RoPs and Work Plan to HSSC-1.
- **Action 20/34** – **Tidal and Water Level WG** to propose Work Plan to HSSC-1.

## 10. REVIEW AND ENDORSEMENT OF HSSC WORK PLAN

*Docs:* *CHRIS20-10A rev.2* *Consolidated HSSC Work Plan (IHB)*

IHB (HUET) introduced and briefly reviewed this paper. Various minor amendments were made to the HSSC Work Plan to reflect several changes agreed during previous agendas items. The resulting WP at Annex M was endorsed, taking into account that HGMIO was retired and HCIWWG was disbanded. It was noted that the HSSC WP will need to be complemented with work plans for the Hydrographic Dictionary WG and the Tidal and Water Level WG when these have been developed.

Outcome:
- The Committee noted the paper.
- The Committee approved the HSSC Work plan with minor amendments (see Annex M).

## 11. REVIEW OF INFORMATION PAPERS

*Docs:* *CHRIS20-INF1* *Status of IHO Publications on Standards and Specifications (IHB)*

IHB (HUET) briefly reviewed this paper. It was suggested and agreed that the new IHO publication S-66 *Facts about Electronic Charts and Carriage Requirements* should ideally be maintained by the Joint Information WG (JIWG) of the two RENCs, whereas HSSC will eventually take ownership. This was supported by the representatives of IC-ENC and PRIMAR.

Outcome:

- The Committee noted the paper.
- The Committee agreed that HSSC should be the owner of the new IHO publication S-66 *Facts about Electronic Charts and Carriage Requirements*.
- **Action 20/35** - **IHB** to invite the PRIMAR / IC-ENC Joint Information WG (JIWG) to maintain S-66 on behalf of HSSC as owner of S-66.

## 12. DATE AND LOCATION OF FIRST HSSC MEETING

It was suggested that the first meeting of the Hydrographic Standards and Services Committee (HSSC), the successor of CHRIS, take place in September / October 2009. Noting that an International ECDIS Conference has been planned in Singapore on the week 12-16 October 2009, in conjunction with the 10th meeting of the East Asia Hydrographic Commission (EAHC), it was agreed that the first option for HSSC-1 would be Singapore on the following week, i.e. from 19-23 October 2009. Fall-back options would be Rep of Korea, following an offer by NORI to host HSSC-1, or IHB if needed.

Outcome:

- The Committee agreed to consider Singapore immediately after the ECDIS Conference, as first option for HSSC-1, i.e. from 19-23 October 2009. Rep of Korea and/or IHB to be fall-back options.
- **Action 20/36** - **IHB** to confirm and promulgate arrangements for HSSC-1.

## 13. CLOSURE OF THE MEETING

On behalf of the meeting, Chair warmly thanked the Brazilian hosts for the outstanding arrangements for CHRIS-20. He also thanked all participants and observers for their contribution to the meeting.

There being no other points to discuss, Chair closed the meeting at 13:00 on 7 November 2008.

## LIST OF ACRONYMS

| | |
|---|---|
| **AIS** | Automatic Identification System (IMO) |
| **BSHC** | Baltic Sea Hydrographic Commission (IHO) |
| **CATZOC** | Category of Zone of Confidence attribute (IHO/S-57) |
| **CHRIS** | Committee on Hydrographic Requirements for Information Systems (IHO) |
| **CIRM** | Comité International Radio-Maritime |
| **CL** | Circular Letter (IHO) |
| **CSMWG** | Colours and Symbols Maintenance Working Group (IHO, now DIPWG) |
| **CSPCWG** | Chart Standardization and Paper Chart Working Group (IHO) |
| **DATEND** | Date End attribute (IHO/S-57) |
| **DATSTA** | Date Start attribute (IHO/S-57) |
| **DGIWG** | Digital Geographic Information Working Group (NATO) |
| **DHN** | Diretoria de Hidrografia e Navegação (Brazil) |
| **DIPWG** | Digital Information Portrayal Working Group (IHO, formerly CSMWG) |
| **DPSWG** | Data Protection Scheme Working Group (IHO) |
| **DQWG** | Data Quality Working Group (IHO) |
| **EAHC** | East Asia Hydrographic Commission (IHO) |
| **ECDIS** | Electronic Chart Display and Information System |
| **ECS** | Electronic Chart System |
| **EIHC** | Extraordinary International Hydrographic Conference (IHO) |
| **ENC** | Electronic Navigational Chart |
| **ESF** | ECDIS Stakeholders Forum (IHO) |
| **EUWG** | ENC Updating Working Group (IHO) |
| **GII** | Geospatial Information Infrastructure (IHO) |
| **GLOSS** | Global Sea Level Observing System (IOC) |
| **HCIWWG** | Hydrography and Cartography in Inland Waters Working Group (IHO) |
| **HGMIO** | Harmonizing Group on Marine Information Objects (IHO-IEC) |
| **HO** | Hydrographic Office |
| **HSSC** | Hydrographic Services and Standards Committee (IHO) |
| **IC-ENC** | International Centre for ENCs |
| **IEC** | International Electrotechnical Commission |
| **IEHG** | Inland ENC Harmonization Group (USA–EU–Russia) |
| **IHB** | International Hydrographic Bureau (IHO) |
| **IHC** | International Hydrographic Conference (IHO) |
| **IHO** | International Hydrographic Organization |
| **IMO** | International Maritime Organization |
| **INT Chart** | International Chart (IHO) |
| **IOC** | Intergovernmental Oceanographic Commission (UNESCO) |
| **ISM** | International Safety Management (IMO) |
| **ISO** | International Organization for Standards |
| **JTEWG** | Joint Technical Experts Working Group (IC-ENC & PRIMAR)) |
| **M-3** | Resolutions of the IHO |
| **M-11** | Guidance for the Preparation and Maintenance of INT Chart schemes and Catalogue of International (INT) Charts (IHO) |
| **MEPTG** | Marine Environment Protection Task Group (TSMAD) |
| **MIO** | Marine Information Overlay |
| **MS** | Member State |
| **MSDI** | Marine Spatial Data Infrastructure |
| **MSDIWG** | Marine Spatial Data Infrastructure Working Group (MSDIWG) |
| **NAV** | Sub-committee on Navigation (IMO) |

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|---|---|
| **NGA** | National Geospatial-Intelligence Agency (USA) |
| **NGIO** | Non-Governmental International Organization |
| **NOAA** | National Oceanic and Atmospheric Administration (USA) |
| **NORI** | National Oceanographic Research Institute (Rep of Korea) |
| **NSHC** | North Sea Hydrographic Commission (IHO) |
| **OEF** | Open ECDIS Forum |
| **OEM** | Original Equipment Manufacturer |
| **PEREND** | Period End attribute (IHO/S-57) |
| **PERSTA** | Period Start attribute (IHO/S-57) |
| **PresLib** | Presentation Library for ECDIS (IHO) |
| **PRIMAR** | North-European RENC |
| **RENC** | Regional ENC Coordinating Centre (IHO) |
| **RHC** | Regional Hydrographic Commission (IHO) |
| **RoP / ROP** | Rules of Procedure |
| **RTCA** | Radio Technical Commission for Aeronautics |
| **RTCM** | Radio Technical Commission for Maritime Services |
| **S-52** | Colours & Symbols Specifications for ECDIS - Presentation Library (IHO) |
| **S-57** | Transfer Standard for Digital Hydrographic Data (IHO) |
| **S-65** | ENC Production Guidance (IHO) |
| **S-66** | Facts about Electronic Charts and Carriage Requirements (IHO) |
| **S-100** | Geospatial Standard for Hydrographic Data (IHO) |
| **S-101** | Future ENC Product Specification, based on S-100 (IHO) |
| **SCAMIN** | Scale Minimum attribute (IHO/S-57) |
| **SDI** | Spatial Data Infrastructure |
| **SNPWG** | Standardization of Nautical Publications Working Group (IHO) |
| **SOLAS** | Safety of Life at Sea Convention (IMO) |
| **SWPHC** | South West Pacific Hydrographic Commission |
| **TC** | Technical Committee |
| **TEWG** | Technical Experts Working Group (RENCs) |
| **T&P** | Temporary and Preliminary |
| **ToR/TOR** | Terms of Reference |
| **TR** | Technical Resolution |
| **TSMAD** | Transfer Standard Maintenance and Applications Development Working Group (IHO) |
| **TWLWG** | Tidal and Water Level Working Group (IHO) |
| **UKHO** | United Kingdom Hydrographic Office |
| **UNCLOS** | United Nations Commission on the Law Of the Sea |
| **UNH** | University of New Hampshire (USA) |
| **USA-ACE** | United States Army Corps of Engineers (USA) |
| **USCG** | United States Coast Guard (USA) |
| **WEND** | Worldwide ENC Database (IHO) |
| **WG** | Working Group |
| **WP** | Work Plan / Working Paper |

## LIST OF DOCUMENTS

| Document No | Document Title |
|---|---|
| CHRIS20-01A rev.10 | List of Documents |
| CHRIS20-01B rev.5 | List of Participants |
| CHRIS20-01C | CHRIS - Contacts List |
| CHRIS20-01D | Terms of Reference for CHRIS and related Working Groups |
| CHRIS20-02A rev.10 | Agenda and Timetable |
| CHRIS20-03A | Minutes of the 19th CHRIS Meeting |
| CHRIS20-03B | List of Actions from the 19th CHRIS Meeting and Status |
| CHRIS20-04.1A rev.2 | Outcomes from the 11th WEND Committee Meeting, Tokyo , Japan , 2-5 September 2008 (IHB) |
| CHRIS20-04.2A | Report on IMO activities affecting CHRIS (IHB) |
| CHRIS20-04.3A | Report on ISO-TC211 activities affecting CHRIS (B. Greenslade) |
| CHRIS20-04.4A | Report on IHO liaison with DGIWG (B. Greenslade) |
| CHRIS20-04.5A | Report on IEC-TC80-WG7 activities affecting CHRIS : See CHRIS20-INF4. |
| CHRIS20-04.6A | Outcome of NSHC 28: definition and length of coastline |
| CHRIS20-05.1A | Outcomes from the S-101 Workshop , Monaco , 4-6 March 2008 (IHB) |
| CHRIS20-05.1B | Outcomes from the 4th ECDIS Stakeholders' Forum, Tokyo , Japan , 3-4 September 2008 (IHB) |
| CHRIS20-05.1C | Dynamic Water Depths in ECDIS (IHB) |
| CHRIS20-05.2A | Report on Activities of the Open ECDIS Forum (L. Alexander, USA-UNH and OEF Board of Advisors) |

| | |
|---|---|
| CHRIS20-06.1A rev.1 | Report of TSMAD (B. Greenslade, UK , Chair) |
| CHRIS20-06.1B rev.1 | Governance and Management Arrangements for the IHO Information Registry (TSMAD Chair) |
| CHRIS20-06.1C rev.1 | Temporary (T) and Preliminary (P) Notices to be used with ENCs (France) |
| CHRIS20-06.1D rev.2 | Canadian position regarding CHRIS19-06.1C - Recommendations for Consistent ENC Data Encoding (Canada) |
| CHRIS20-06.1E | Adoption and Publication of IHO S-100 - The Hydrographic Geospatial Standard for Marine Data and Information (TSMAD Chair) |
| CHRIS20-06.1F | ENC harmonisation on the Baltic Sea (Denmark & Finland) |
| CHRIS20-06.2A | Report of DPSWG (J. Pritchard , UK , Chair) |
| CHRIS20-06.3A | Report of CSMWG (M. Jonas, Germany , Chair) |
| CHRIS20-06.4A | Report of SNPWG (D. Acland , UK , Chair) |
| CHRIS20-06.5A | Report of CSPCWG (P. Jones, UK , Chair) |
| CHRIS20-06.6A | Report of DQWG (S. Smith, USA-NOAA, Chair) |
| CHRIS20-06.7A | Report of MSDIWG (J. Pepper, UK, Chair ) |
| CHRIS20-06.8A rev.1 | Report of HCIWWG (W. Cavalheiro, Brazil, Chair ) |
| CHRIS20-07.1A | Report of HGMIO (L. Alexander, USA-UNH, Chair) |
| CHRIS20-07.1B rev.1 | Role and Status of HGMIO (IHB & Chair HGMIO) |
| CHRIS20-07.1C | Role and Future of HGMIO (USA-NOAA) |
| CHRIS20-07.2A | Status Report on Inland ENC development (Denise LaDue, USA, Co-Chair IEHG) |
| CHRIS20-08.1A | Revision of M-3 “IHO Resolutions” (IHB) |
| CHRIS20-09.1A rev.1 | Transition to HSSC (IHB) |
| CHRIS20-10A rev.2 | Consolidated CHRIS Work Plan (IHB) |

| | **Information Papers** |
|---|---|
| CHRIS20-INF1 | Status of IHO Publications on Standards and Specifications (IHB) |
| CHRIS20-INF2 | United States endorsement of S-100 |
| CHRIS20-INF3 | Proposed amendments to the Draft TORs for Tidal Working Group (Finland) |
| CHRIS20-INF4 | Report on IEC and RTCM Work Relating to Electronic Charting (USA-NOAA) |
| CHRIS20-INF5 | Data Chain Certification Concept (RTCA) |

## LIST OF PARTICIPANTS

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| | | |

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|---|---|---|
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| | | |
| **Observers** | **Name** | **Email** |
| IC - ENC | Represented by Mr Barrie GREENSLADE (see UK) | |
| CIRM | Mr Michael RAMBAUT | secgen@cirm.org |
| OEF & HGMIO | Dr Lee ALEXANDER | Lee.Alexander@unh.edu |
| PRIMAR | Represented by Capt Gerry LARSSON-FEDDE (see Norway) | |
| RTCA | Mr Michael BERGMANN | Michael.Bergmann@jeppesen.com |
| RTCM | Mr John CONYON<br>Mr Rafael PONCE | johnc@iictechnologies.com<br>rponce@esri.com |

## AGENDA AND TIMETABLE

| Monday 3 Nov | **CHRIS CHAIR GROUP** |
|---|---|
| 0830 | **Chair Group meet at the Orizzonte Hotel Lobby and Depart for DHN** |
| 0900 | CHRIS Chair Group Meeting |
| 1030 | **Coffee Break** |
| 1050 | CHRIS Chair Group Meeting (Continues) |
| 1215 | CHRIS-20 attendees meet at the Orizzonte Hotel Lobby and Depart for DHN |
| 1245 | **Official Photograph - Lunch** |
| | **CHRIS-20** |
| | |
| 1410 | **1. Opening and Administrative Arrangements**<br>*Docs: CHRIS20-01A List of Documents*<br>*CHRIS20-01B List of Participants*<br>*CHRIS20-01C CHRIS - Contacts List*<br>*CHRIS20-01D Terms of Reference for CHRIS and related Working Groups* |
| | **2. Approval of Agenda**<br>*Docs: CHRIS20-02A Agenda and Timetable* |
| 1435 | **3. Matters arising from Minutes of 19th CHRIS Meeting**<br>*Docs: CHRIS20-03A Minutes of CHRIS-19*<br>*CHRIS20-03B Status of Actions List from CHRIS-19* |
| 1530 | **Coffee Break** |
| 1550 | **4. Decisions of other bodies affecting CHRIS**<br>4.1 WEND Committee<br>*Docs: CHRIS20-04.1A Outcomes from the 11th WEND Committee Meeting, Tokyo, Japan, 2-5 September 2008 (IHB)* |
| | 4.2 IMO<br>*Docs: CHRIS20-04.2A Report on IMO activities affecting CHRIS (IHB)* |
| 1620 | 4.3 ISO-TC211 (Geographic Information-Geomatics)<br>*Docs: CHRIS20-04.3A Report on ISO-TC211 activities affecting CHRIS (B. Greenslade)* |
| | 4.4 NATO-DGIWG (Digital Geographic Information W.G.)<br>*Docs: CHRIS20-04.4A Report on IHO liaison with DGIWG (B. Greenslade)* |
| | 4.5 IEC-TC80-WG7 (ECDIS and ECS)<br>*Docs: CHRIS20-INF4 Report on IEC and RTCM Work Relating to Electronic Charting (USA-NOAA)* |

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| | 4.6 North Sea Hydrographic Commission<br>*Docs: CHRIS20-04.6A Outcome of NSHC 28: definition and length of coastline* |
| 1650 | **5. Liaison with Industry**<br>5.1 Consideration of Feedback Items from ECDIS Stakeholders<br>*Docs: CHRIS20-05.1A Outcomes from the S-101 Workshop, Monaco, 4-6 March 2008 (IHB)*<br>*CHRIS20-05.1B Outcomes from the 4th ECDIS Stakeholders' Forum, Tokyo, Japan, 3-4 September 2008 (IHB)*<br>*CHRIS20-05.1C Dynamic Water Depths in ECDIS (IHB)*<br>*CHRIS20-INF5 Data Chain Certification Concept (RTCA)* |
| 1710 | 5.2 Open ECDIS Forum<br>*Docs: CHRIS20-05.2A Report on Activities of the Open ECDIS Forum (L. Alexander, USA-UNH and OEF Board of Advisors)* |
| 1730 | END OF DAY 1 |
| 1740 | Departure to Hotel |
| Tuesday 4 Nov | **CHRIS-20** |
| 0830 | Meet at Orizzonte Hotel Lobby and Depart for DHN |
| 0900 | **6. Reports by CHRIS Working Groups**<br>6.1 Transfer Standard Maintenance and Application Development (TSMAD)<br>*Docs: CHRIS20-06.1A Report of TSMAD (B. Greenslade, UK, Chair)* |
| 1030 | **Coffee Break** |
| 1050 | 6.1 Transfer Standard Maintenance and Application Development (TSMAD) (continued)<br>*Docs: CHRIS20-06.1B Governance and Management Arrangements for the IHO Information Registry (TSMAD Chair)*<br>*CHRIS20-06.1C Temporary (T) and Preliminary (P) Notices to be used with ENCs (France)*<br>*CHRIS20-06.1D Canadian position regarding CHRIS19-06.1C - Recommendations for Consistent ENC Data Encoding (Canada)*<br>*CHRIS20-06.1E Adoption and Publication of IHO S-100 - The Hydrographic Geospatial Standard for Marine Data and Information (TSMAD Chair)*<br>*CHRIS20-06.1F ENC harmonisation on the Baltic Sea (Denmark & Finland)*<br>*CHRIS20-INF2 United States endorsement of S-100* |
| 1130 | 6.2 Data Protection Scheme (DPSWG)<br>*Docs: CHRIS20-06.2A Report of DPSWG (J. Pritchard, UK, Chair)* |
| 1150 | 6.3 Colours and Symbols Maintenance (CSMWG)<br>*Docs: CHRIS20-06.3A Report of CSMWG (M. Jonas, Germany, Chair)* |
| 1230 | 6.4 Standardization of Nautical Publications (SNPWG)<br>*Docs: CHRIS20-06.4A Report of SNPWG (D. Acland, UK, Chair)* |
| 1300 | **Lunch** |

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| 1415 | Tour of DHN facilities |
| 1545 | **Coffee Break** |
| 1600 | 6.5 Chart Standardization and Paper Chart (CSPCWG)<br>*Docs: CHRIS20-06.5A Report of CSPCWG (P. Jones, UK, Chair)* |
| 1630 | 6.6 Data Quality (DQWG)<br>*Docs: CHRIS20-06.6A Report of DQWG (S. Smith, USA-NOAA, Chair)* |
| 1650 | 6.7 Marine Spatial Data Infrastructure (MSDIWG)<br>*Docs: CHRIS20-06.7A Report of MSDIWG (J. Pepper, UK, Chair)* |
| | Spare |
| 1730 | END OF DAY 2 – **Adjourn CHRIS-20** |
| 1740 | Departure to Hotel |
| Wednesday 5 Nov | **ENC/ECDIS SEMINAR** |
| 0830 | Meet at Orizzonte Hotel Lobby and Depart for DHN |
| 0900 | ENC/ECDIS Seminar |
| 1030 | **Coffee Break** |
| 1050 | ENC/ECDIS Seminar (Continues) |
| 1300 | **Lunch** |
| 1415 | ENC/ECDIS Seminar (Continues) |
| 1545 | **Coffee Break** |
| 1600 | ENC/ECDIS Seminar (Continues) |
| 1730 | END OF DAY 3 |
| 1800 | **Reception hosted by DHN** |
| 2000 | Departure to Hotel |
| Thursday 6 Nov | **ENC/ECDIS SEMINAR** |
| 0830 | Meet at Orizzonte Hotel Lobby and Depart for DHN |
| 0900 | ENC/ECDIS Seminar |
| 1030 | **Coffee Break** |
| 1050 | ENC/ECDIS Seminar (Continues) |
| 1300 | **Lunch** |
| | |
| | **Resume CHRIS-20** |
| 1415 | 6.8 Hydrography and Cartography in Inland Waters (HCIWWG)<br>*Docs: CHRIS20-06.8A Report of HCIWWG (W. Cavalheiro, Brazil, Chair)* |
| 1500 | **7. Inter-Organizational Bodies**<br>7.1 IHO/IEC Harmonization Group on Marine Information Overlays (HGMIO)<br>*Docs: CHRIS20-07.1A Report of HGMIO (L. Alexander, USA-UNH, Chair)*<br>*CHRIS20-07.1B Role and Status of HGMIO (IHB & Chair HGMIO)* |

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| | *CHRIS20-07.1C Role and Future of HGMIO (USA-NOAA)* |
| 1545 | **Coffee Break** |
| 1600 | 7.2 Inland ECDIS<br>*Docs: CHRIS20-07.2A Status Report on Inland ENC development (Denise LaDue, USA, Co-Chair IEHG)* |
| 1620 | **8. Other CHRIS Business**<br>8.1 Review of M-3<br>*Docs: CHRIS20-8.1A Revision of M-3 "IHO Resolutions" (IHB)* |
| | Spare |
| 1730 | END OF DAY 4 |
| 1740 | Departure to Hotel |
| Friday<br>7 Nov | |
| 0830 | Meet at Orizzonte Hotel Lobby and Depart for DHN |
| 0900 | **9. Transition to HSSC**<br>9.1 Integration of non-CHRIS groups in HSSC<br>*Docs: CHRIS20-9.1A Transition to HSSC (IHB)*<br>*CHRIS20-INF3 Proposed amendments to the Draft TORs for Tidal Working Group (Finland)* |
| 1030 | **Coffee Break** |
| 1050 | **10. Review and Endorsement of HSSC Work Plan**<br>*Docs: CHRIS20-10A Consolidated HSSC Work Plan (IHB)* |
| 1130 | **11. Review of Information Papers**<br>*Docs: CHRIS20-INF1 Status of IHO Publications on Standards and Specifications (IHB)* |
| 1200 | **12. Date and Location of First HSSC Meeting**<br>Proposed date: Sept/Oct 2009. Venue to be determined. |
| o/c | **13. Closure of the Meeting** |
| 1300 | **Lunch** |
| 1410 | Departure to Hotel |

## LIST OF ACTIONS FROM CHRIS-20

| AGENDA ITEM | SUBJECT | ACTION No. | ACTIONS (in bold, action by) |
|---|---|---|---|
| 4.2 | ECDIS software maintenance | 20/1 | **IHB** to submit a supporting paper to NAV55 on the relevance of software maintenance in ECDIS (based on the previous submission to NAV53) |
| 4.3 | Use of ISO standards | 20/2 | **IHB** to seek confirmation from ISO that relevant ISO standards can be used in relation to S-100 without copyright restrictions. |
| 4.5 | IEC 62376 & ECS standards | 20/3 | **IHB** to invite MS to consider contacting their IEC representatives and providing input to the consideration / acceptance of IEC 62376 - ECS Standard. |
| 4.6 | Length of coastline | 20/4 | **France** to further study the feasibility of a standardised approach to the determination of the length of coastlines and report to HSSC-1. |
| 4.6 | Length of coastline | 20/5 | **IHB** to invite MS to participate in the study led by France on the determination of the length of coastlines. |
| 5.1 | Dynamic tides in ECDIS | 20/6 | **TSMAD** in consultation with TWLWG, CSMWG and other relevant HO bodies to develop proposals to enable the use of tidal and water height information to adjust charted depths in S-57 based ECDIS equipment for consideration by HSSC-1. |
| 5.1 | Data Supply Chain Certification | 20/7 | **IHB** to encourage MS to participate in the RTCA Correspondence Group on Data Chain Certification Concept. |
| 5.1 | Data Supply Chain Certification | 20/8 | **RTCA Correspondence Group** to liaise with DPSWG. |
| 5.1 | Data Supply Chain Certification | 20/9 | **RTCA Correspondence Group Leader** to report on progress to HSSC-1. |
| 6.1 | Product Specification for digital paper charts | 20/10 | **IHB** to invite the Nordic Hydrographic Commission (NSHC) to report to HSSC-1 on the results of the Improved Data Exchange Working Group and the possible need for an S100-based data exchange standard for paper charts. |
| 6.1 | S-57 temporal attribution | 20/11 | **IHB** to issue a “warning” CL to MS and NGIOs regarding issues relating to S-57 temporal attribution and “master / slave” relationships, taking into account CHRIS20-WP1. |
| 6.1 | S-57 temporal attribution | 20/12 | **TSMAD** to issue an encoding bulletin regarding issues relating to S-57 temporal attribution and “master / slave” relationships, based on CHRIS20-WP1. |

| AGENDA ITEM | SUBJECT | ACTION No. | ACTIONS (in bold, action by) |
|---|---|---|---|
| 6.1 | S-57 temporal attribution | 20/13 | **TSMAD** to urgently consider by correspondence revisions to S-57 temporal attribution and "master / slave" relationships, taking into account CHRIS20-WP1. |
| 6.1 | S-57 temporal attribution & CATZOC | 20/14 | as soon as practicable and subject to no adverse findings from TSMAD, **volunteer MS's** may wish to submit a late proposal to 4EIHC seeking approval for an amending Supplement to S-57 (S-57 3.1.2) containing revisions to S-57 temporal attribution and "master/slave" relationships which would also include amendments to CATZOC parameters and definitions (see Action 20/25). |
| 6.1 | Geospatial Information Registry | 20/15 | **IHB** to develop a proposal to the 4th EIHC for the long-term support and governance of the GII, taking into account CHRIS20-WP3 (to be combined with Action 20/16). |
| 6.1 | Adoption of S-100 | 20/16 | **IHB** to develop a proposal for consideration by the 4th EIHC to adopt S-100 as a live standard. |
| 6.1 | T & P Notices for ENC updating | 20/17 | **IHB** to issue CL inviting MS to participate in the ENC Updating Working Group (EUWG), based on CHRIS20-WP2. |
| 6.1 | ENC consistency | 20/18 | **TSMAD** to review S-65 Appendix A – *Recommendations for Consistent ENC Data Encoding* and revise as necessary to take into account the practical experience of Canada and the BSHC (see CHRIS20-06.01D and CHRIS20-06.1F) regarding the regional implementation of the guidelines. |
| 6.1 | ENC consistency | 20/19 | **IHB** to draw MS attention to the BSHC regional model for the implementation of S-65 Appendix A - *Recommendations for Consistent ENC Data Encoding* and the endorsement of WEND and CHRIS regarding this approach. |
| 6.3 | Linear depth areas | 20/20 | **TSMAD** to release an Encoding Bulletin on discontinuing the encoding of linear depth areas from 1 January 2009. |
| 6.3 | Revision of S-52 | 20/21 | **DIPWG** to undertake a revision of S-52, including all annexes. |
| 6.3 | Pick report | 20/22 | **DIPWG** to further develop pick report as proposed in CHRIS20-06.3A. |
| 6.5 | INT chart coordinators | 20/23 | **CSPCWG** to develop ToR / RoP for INT Chart Coordinators. |
| 6.5 | Small/medium ENC schemes | 20/24 | **CSPCWG** to develop guidelines for preparation & maintenance of small / medium scale ENC schemes. |
| 6.6 | CATZOC definitions | 20/25 | **IHB and Chair TSMAD** to bring amended CATZOC definitions into force through a supplement to S-57. (See also Action 20/14) |
| 6.7 | MSDI at EIHC-4 | 20/26 | **IHB** to prepare a proposal for the 4th EIHC based on the MSDIWG report and CHRIS20-WP4. |
| 6.8 | Inland waters at EIHC-4 | 20/27 | **IHB** to prepare a proposal for the 4th EIHC based on the HCIWWG report.and CHRIS20-WP5. |

| AGENDA ITEM | SUBJECT | ACTION No. | ACTIONS (in bold, action by) |
|---|---|---|---|
| 6.8 | Definition for 'navigable inland waters' | 20/28 | **Hydrographic Dictionary WG** to consider developing a definition for "navigable inland waters". |
| 7.1 | Hydro-related MIO register | 20/29 | **TSMAD** to further develop the infrastructure described in CHRIS20-06.1B Annex A for the governance and management of the GII, to decide if a hydro-related MIO register is to be created, and report to HSSC-1. |
| 7.1 | OEF Orphan S-57 objects / attributes | 20/30 | **TSMAD** in consultation with HGMIO to propose arrangements to HSSC-1 that accommodate the "miscellaneous" S-57 objects currently registered on the OEF |
| 7.1 | Outreach functions | 20/31 | **IHB and Chair TSMAD** to review ToRs and RoPs for TSMAD to ensure that the proposed TSMAD outreach functions outlined in CHRIS20-07.1C are addressed. |
| 8.1 | Revision of M-3 TRs | 20/32 | **IHB** to circulate all CHRIS recommendations on M-3 Technical Resolutions to MS for approval. |
| 9.1 | ToRs / RoPs & WP for HDWG | 20/33 | **Hydrographic Dictionary WG** to propose ToRs, RoPs and Work Plan to HSSC-1. |
| 9.1 | WP for TWLWG | 20/34 | **Tidal and Water Level WG** to propose Work Plan to HSSC-1. |
| 11 | Maintenance of S-66 | 20/35 | **IHB** to invite the PRIMAR / IC-ENC Joint Information WG (JIWG) to maintain S-66 *Facts about Electronic Charts and Carriage Requirements* on behalf of HSSC as owner of S-66. |
| 12 | Next meeting | 20/36 | **IHB** to confirm and promulgate arrangements for HSSC-1. |

**CHRIS20-WP1**

**Paper for Consideration by CHRIS**
**S-57 Temporal attribution**

| | |
|---|---|
| ***Submitted by:*** | TSMAD |
| ***Executive Summary:*** | Proposal for a minor revision to S-57. |
| ***Related Documents:*** | S-57, S-52, S-58. |
| ***Related Projects:*** | |

**Introduction / Background**
Recent changes to the IEC 61174 standard introduced tests to type approve the correct implementation of temporal attributes. These attributes enable time variable changes to be made to the ECDIS display whereby features are either displayed or hidden according to the date attributed. Currently some equipment objects do not carry temporal attributes and therefore will not react to these changes and will remain displayed when the master feature is hidden. The temporal attributes are DATSTA (date start) DATEND (date end), PERSTA (period start) and PEREND (period end).

**Analysis/Discussion**
S-57 includes the concept of master/slave relationships between structure feature objects and equipment feature objects as described in the following extract from the S-57 ENC Use of the Objects Catalogue
***12.1Lighthouses, navigational marks - relationships***
***12.1.1 Geo objects forming parts of navigational aids***

*Aids to navigation are composed of fixed or floating structures carrying equipment objects.*

*The most common structure objects are:* ***BCNCAR***, ***BCNISD***, ***BCNLAT***, ***BCNSAW***, ***BCNSPP***, ***BOYCAR***, ***BOYINB***, ***BOYISD***, ***BOYLAT***, ***BOYSAW***, ***BOYSPP***, ***BRIDGE***, ***BUISGL***, ***DAYMAR***, ***LITFLT***, ***LITVES***, ***LNDMRK, MORFAC***, ***OFSPLF***, ***PILPNT, SLCONS***.

*Equipment objects consist of:* ***DAYMAR***, ***FOGSIG***, ***LIGHTS***, ***RADSTA***, ***RDOSTA***, ***RETRFL***, ***RTPBCN***, ***SISTAT***, ***SISTAW***, ***TOPMAR***.

*Radar reflectors must not be encoded as separate objects when attached to navigational aids. If it is required to encode their existence, it must be done using the attribute CONRAD = 3 (radar conspicuous (has radar reflector)) on the structure object.*

*Rescue stations and coastguard stations are not related directly to navigation, and they must not, therefore, be part of the equipment objects of navigational aids. If it is required to encode a rescue or coastguard station at the same location as a navigational mark, it must be encoded as a separate object, and share the same spatial object as the navigational aid.*

*12.1.2 Relationships*
*A master to slave relationship must be created in order to relate the different objects comprising a navigational aid.*

*When the navigational aid contains a structure object (from the above list), this object must be the master object, and the equipment objects must be the slaves.*

*When the nature of the base structure is unknown or there is no structure object, one of the equipment objects must be chosen as the master object, giving priority to a* ***LIGHTS*** *object, if one exists.*



***Figure 20 – Navigational aids***

*If it is required to encode the name of the navigational aid, it must be done using the attribute OBJNAM (and possibly the attribute NOBJNM) on the master object. The name should not be repeated for the slave objects. If the name is painted on the structure, it must be encoded with the same spelling in OBJNAM if it is based on the Latin alphabet. If the name is not based on the Latin alphabet, it must be encoded on NOBJNM, and transliterated for encoding on OBJNAM.*

*All point objects comprising a navigational aid must point to the same point spatial object.*

*The navigational aid may be associated with the objects which it marks (e.g.* ***RESARE*** *or* ***OBSTRN*** *objects) using the collection object* ***C_ASSO*** *(see clause 15). Several navigational aids and several marked objects may be associated in the same relationship.*

The original, undocumented, intention of the master slave relationship was that ECDIS systems would use the master slave relationship to implement time variable scenarios. When the master object is subject to a time variable change the slave object will react in parallel. This is the reason why the temporal attributes were never include for the equipment objects listed above.

**Conclusions**
This creates at a minimum a confusing, if not dangerous, display for the ECDIS user. Spurious equipment feature objects would remain visible while the master feature objects are hidden.

**Recommendations**
TSMAD recommends a minor revision of S-57 (Supplement No. 2) to add temporal attributes to the following feature objects:
***FOGSIG***, ***RADSTA***, ***RETRFL***, ***RTPBCN***, ***TOPMAR***
The intention is to publish this new supplement following a full and final review at TSMAD 18 at May 2009. In the interim a TSMAD Encoding Bulletin will be issued advising encoders of the issue and proposing a temporary solution.

**Justification and Impacts**

If this situation continues, there is a high likelihood that an ECDIS user could be confused and lose confidence in the quality and/or validity of the data.

Early indications are that there will be no impact on ECDIS systems, but a thorough investigation will be instigated when test data is available.

Production systems will require minor changes to dictionaries to add the new temporal attributes.

Validation software will not be affected as changes to S-58 are not required.

**Action Required of CHRIS**
The CHRIS is invited to:

> Endorse the recommendations to develop and publish Supplement No 2 of S-57 and prepare an interim S-57 ENC Encoding Bulletin.

**ENC Updating Working Group (EUWG)**
Terms of Reference

**1. Objective**
To develop contemporary guidance on standardized processes for the delivery and implementation of updates to ENCs.

**2. Authority**
The ENC Updating Working Group (EUWG) is a subsidiary of the Hydrographic Services and Standards Committee (HSSC) and its work is subject to HSSC approval.

**3. Procedures**

a. The EUWG shall:
   i. develop and propose a pragmatic approach to overcome any current shortcomings in the updating mechanisms for T&P notices in ENCs,
   ii. review and revise the updating mechanisms as contained in S-52 Appendix 1,
   iii. report to the HSSC in 2009 with recommendations as appropriate.

b. The EUWG shall take into account the CHRIS submission from France concerning Temporary and Preliminary Notices to Mariners used with ENCs (CHRIS20-06.1C).

c. The WG should work by correspondence unless a meeting is considered necessary to complete the assigned tasks.

d. The WG should liaise with the RENC Joint Technical Experts Working Group (JTEWG) and CSPCWG.

**4. Composition and Chairmanship**

a. The WG shall comprise representatives of IHO Member States (MS), the RENC JTEWG, Expert Contributors and Accredited NGIO Observers, all of whom have expressed their willingness to participate.

b. Member States, RENC JTEWG, Expert Contributors and Accredited NGIO Observers may indicate their willingness to participate at any time. A membership list shall be maintained.

c. Expert Contributor membership is open to entities and organisations that can provide a relevant and constructive contribution to the work of the WG.

d. The Chair of the WG shall be a representative from France. The vice-Chair shall be a representative from UK.

e. Decisions should generally be made by consensus. If votes are required on issues or to endorse proposals presented to the WG, only MS may cast a vote. Votes shall be on the basis of one vote per MS represented. In the event that votes are required between meetings or in the absence of meetings, including for elections of a Chair or Vice-Chair, this shall be achieved through a postal ballot of those MS on the current membership list.

f. If a secretary is required it should be a member of the WG

g. If the Chair is unable to carry out the duties of the office, a Vice-Chair shall act as the Chair with the same powers and duties.

h. Expert Contributors shall seek approval of membership from the Chair.

i. Expert Contributor membership may be withdrawn in the event that a majority of the MS represented in the WG agree that an Expert Contributor's continued participation is irrelevant or unconstructive to the work of the WG.

j. All members shall inform the Chair in advance of their intention to attend any meetings of the WG.

k. In the event that a large number of Expert Contributor members seek to attend a meeting, the Chair may restrict attendance by inviting Expert Contributors to act through one or more collective representatives.

## CHANGES PROPOSED TO ANNEX A TO CHRIS20-06.1B BY USA-NOAA

(Changes emphasized in yellow)

Original

10. The registers owned by the IHO will normally be confined to those that directly support the official hydrographic products and services required to meet the chart and publications carriage requirements of the Convention on the Safety of Life at Sea (SOLAS).

Revision

10. The registers owned by the IHO will normally be confined to those that directly support the purposes of the IHO such as those required to meet the chart and publications carriage requirements of the Convention on the Safety of Life at Sea (SOLAS).

Original

11. At the same time, other registers that can be shown to complement marine navigation or support the activities of national hydrographic authorities can be established in the IHO S-100 Geospatial Information Registry by relevant organizations and groups. This could be for such things as Inland ECDIS services, sea ice reports, maritime weather services, and vessel traffic information. In these cases, the relevant competent authority or organization would control the relevant register within the rules and procedures of the IHO Geospatial Information Registry as a whole. They would have control over the compilation and maintenance of their registers and any product specifications that they may wish to derive. This is already happening with Inland ENC (owner IEHWG) and Ice Reports (owner WMO-ETSI).

Revision

11. At the same time, other registers that can be shown to complement the purposes of the IHO, or that support activities of member states, can be established in the IHO S-100 Geospatial Information Registry by relevant organizations and groups with the authority of the IHO. This could be for such things as Inland ECDIS services, sea ice reports, maritime weather services, coastal zone management, and vessel traffic information. In these cases, the relevant competent authority or organization would control the relevant register within the rules and procedures of the IHO Geospatial Information Registry as a whole. They would have control over the compilation and maintenance of their registers and any product specifications that they may wish to derive. This is already happening with Inland ENC (owner IEHWG) and Ice Reports (owner WMO-ETSI).

Original

13 IHO Registers include S-100 features and feature attributes required directly or indirectly to support official hydrographic products and services required to meet SOLAS carriage requirements as provided by national hydrographic authorities under the guidelines and specifications of the IHO. These registers and product specifications will normally be hosted by the IHO in the IHO Geospatial Information Registry and maintained by a relevant IHO body. The product specifications to be authorized by the IHO, would then use the number series S-1xx beginning with S-101 for the S-100-based ENC.

Revision

13 IHO Registers include S-100 features and feature attributes required directly or indirectly to support the purposes of the IHO such as those required to meet SOLAS carriage requirements as provided by national hydrographic authorities under the guidelines and specifications of the IHO. These registers and product specifications will normally be hosted by the IHO in the IHO Geospatial Information Registry and maintained by a relevant IHO body. The product specifications to be authorized by the IHO, would then use the number series S-1xx beginning with S-101 for the S-100-based ENC.

Original

14. Hydro-related Registers and Product Specifications include S-100 features and feature attributes that complement marine navigation and support the activities of national hydrographic authorities but are not required to meet the SOLAS obligations of national hydrographic authorities. These Registers may be hosted by the IHO in the Geospatial Information Registry but will be owned, maintained and authorized by a relevant non-IHO competent authority. As these Product Specifications will not be authorized by the IHO they should use a numbering series that is not associated with or can be confused with the IHO S-1xx series.

Revision

14. Hydro-related Registers and Product Specifications include S-100 features and feature attributes that complement marine navigation, or that support the activities of member states, but which are not required to meet the SOLAS obligations of national hydrographic authorities. These Registers may be hosted by the IHO in the Geospatial Information Registry but may be owned, maintained and authorized by a relevant non-IHO competent authority. As these Product Specifications will not be authorized by the IHO they should use a numbering series that is not associated with or can be confused with the IHO S-1xx series.

Original

15. Other Registers and Product Specifications not included in the IHO Geospatial Information Registry, include S-100 features and feature attributes with marginal or no relationships with the primary marine navigation roles of national hydrographic authorities. Any Registers and Product Specifications for these would normally be organized, authorized, and maintained by the appropriate non-IHO competent authorities under their own registry arrangements; for example, in other ISO 19100 registries. As these Product Specifications will not be authorized by the IHO and will not even be part of the IHO GII, they should use a numbering series that is not associated with or can be confused with the IHO S-100 series.

Potential Applications: Maritime Spatial Data Infrastructure (MSDI), Oil and Gas Industry applications, Coastal Zone/Littoral Management

Revision

15 Other Registers and Product Specifications not included in the IHO Geospatial Information Registry, include S-100 features and feature attributes with marginal or no relationships to the purposes of the IHO. Any Registers and Product Specifications for these would normally be organized, authorized, and maintained by the appropriate competent authorities under their own registry arrangements; for example, in other ISO 19100 registries. As these Product Specifications will not be authorized by the IHO and will not even be part of the IHO GII, they should use a numbering series that is not associated with or can be confused with the IHO S-100 series.

Potential Applications: Oil and Gas Industry applications

**MARINE SPATIAL DATA INFRASTRUCTURES (MSDI)**

**Proposed Technical Resolution to the 4th EIHC, June 2009**

**Recognising** that:

1. The Vision of the IHO is to be the authoritative worldwide hydrographic body which actively engages all coastal and interested States to advance maritime safety and efficiency and which supports the protection and sustainable use of the marine environment;
2. IHO Capacity Building is a strategic objective; defined as the process by which the Organization assesses and assists in sustainable development and improvement of the States, to meet the objectives of the IHO and the Hydrography, Cartography and Maritime Safety obligations and recommendations described in UNCLOS, SOLAS V and other international instruments;
3. IHO publication M2 provides suggestions about how a national hydrographic service should be established, how to define individual national requirements, and how to decide upon the necessary resource levels and describes the benefits which accrue to many aspects of national development;
4. In the interests of safety at sea, IHO Member States are encouraged to work together in establishing and maintaining a WEND, and to share in common experiences in order to reduce expenditure, and ensure the greatest possible standardization and reliability;
5. The revised Chapter V of the IMO Safety of Life at Sea (SOLAS) Convention, under the new Regulation 9 requires contracting Governments of SOLAS to provide and maintain Hydrographic Services and products;
6. The IHO is already involved in establishing the role IHO Member States might play in existing or developing National Spatial Data Infrastructures [NSDI] and / or Marine Spatial Data Infrastructures [MSDI];
7. National and / or Regional legislative processes are increasingly mandating IHO Member States public sector information providers to engage in greater interoperability at the organisational and technical level;

**Acknowledging** that:

1. IHO has an extensive set of specifications for hydrography and nautical cartography developed for coastal and offshore areas;
2. IHO is a recognised centre of expertise as a Spatial Data Interest Community [SDIC] by the European Commission in respect of upcoming EU legislation in respect of SDI.
3. MSDI activity is an extension of existing activities within the IHO.
4. IHO has developed de-facto standards and specifications in areas of nautical cartography, hydrography and geospatial data management and accepted and implemented on a world-wide basis.

The IHO **resolves**:

A1.**xx** **Marine Spatial Data Infrastructure [MSDI] policy**

1. IHO develop an overarching MSDI support policy for Member States as part of its enhanced vision statement to assist in the development of and/or implementation of Member States role in existing NSDI and MSDI initiatives and provide guidance in developing a framework where no existing initiatives are in place. The policy be supported by:

- Developing and maintaining a Special Publication [SXX series] that is a definitive SDI procedural guide.
- Developing a SDI capacity building plan comprising knowledge transfer and training to Member States.
- Developing and managing a web based facility to encourage knowledge transfer, best practice and provision of on-line guidance and training material.
- Formalising relations with other SDI stakeholder groups and actively paticipate in these groups to strenghten its understanding and knowledge.

2. IHO Regional Hydrographic Commissions [RHC's] monitor and report progress and providing benchmarking in Member States' MSDI engagement and development.

3. The following activities are necessary to strengthen the IHO as an authoritative source of knowledge, expertise and training in respect of SDI Strategy & Policy, Data Management, Data Frameworks and Standards, Data Dissemination and Communications and Outreach:

## HYDROGRAPHY AND CARTOGRAPHY OF NAVIGABLE INLAND WATERS

**Proposed ~~Draft~~ Technical Resolution to the 4th EIHC, June 2009**
(Changes from CHRIS20-06.8A Annex G have been emphasized)

**Recognizing** that:

a. under the Convention on the International Hydrographic Organization (IHO), Article II, an object of the Organization is to seek the greatest possible uniformity in nautical charts and publications;

b. under the amendments to the Convention, agreed by the 3rd Extraordinary International Hydrographic Conference (EIHC) and now awaiting formal ratification by the required majority of Member States, Article II has been expanded to include: the widest possible use of hydrography, and the widest possible use of IHO standards. These amendments place no geographical limits on the application of hydrography or its associated standards;

c. the IHO is already involved in hydrography and cartography of navigable inland waters, both through the responsibility that some of its members already hold, and by the fact that considerable nautical traffic passes from the sea to navigable inland waters and vice versa. This calls for the harmonization of hydrographic and cartographic information and services provided to navigators to assist the safety of navigation and protection of the environment;

d. the IHO is recognized by the United Nations General Assembly and the United Nations International Maritime Organization (IMO) as the technical authority for issues concerning hydrography and nautical cartography;

e. the responsibility for hydrography and nautical cartography for navigable inland waters in States is often divided among different organizations, not all of them having representation in the IHO, and that the limits of responsibility among these organizations may differ according to the legislation in each State;

**Acknowledging** that:

a. IHO has an extensive set of specifications for hydrography and nautical cartography developed for sea and coastal areas, but used widely also on navigable inland waters;

b. however, these IHO specifications for hydrographic survey and nautical cartography are currently not sufficient for application to all navigable inland waters and do not cover all hydrographic and nautical cartographic needs in navigable inland waters;

c. extended ~~[~~regional~~]~~ specifications for hydrographic survey and for nautical cartography for navigable inland waters are needed to take into account a variety of environmental characteristics and the different nature of circumstances, use and traffic in each waterway;

d. these extended ~~[~~regional~~]~~ specifications should be as far as possible consistent with the IHO specifications;

e. there are other bodies, such as the Inland Electronic Navigational Chart Harmonization Group (IEHG), which has already published format and data specifications for inland electronic nautical cartography;

f. no recognized organization other than the IHO is in a position to foster harmonization between hydrography and cartography in maritime areas and the corresponding activities in navigable inland waters;

The IHO **Resolves**:

A 1.xx **Hydrography and Cartography of navigable Inland Waters**

1. Relevant Regional Hydrographic Commissions (RHC), through appropriate liaison bodies, are invited to:

   a. encourage the consistent use of hydrographic and nautical cartographic standards and mutual cooperation for the enhancement of navigation safety in navigable inland waters within and between regions.

   b. encourage ~~to identify needs~~ the identification of needs for developing additional ~~[~~regional~~]~~ inland extensions to IHO specifications and foster these developments together with other relevant organisations.

   c. encourage ~~to liaise~~ liaison with relevant IHO bodies (International Hydrographic Bureau (IHB), Hydrographic Services & Standards Committee (HSSC)) to ensure that these inland extensions are fully consistent with IHO specifications and are as far as possible harmonised between other ~~[~~regional~~]~~ extensions.

   d. encourage ~~to liaise~~ liaison, when appropriate, with other bodies working with inland hydrographic and nautical specifications, especially with the Inland Electronic Navigational Chart Harmonisation Working Group (IEHG), to ensure consistency and harmonisation as far as feasible with their specifications.

   e. encourage cooperation and mutual assistance between relevant authorities, even from different regions but with common interests, particularly for the safety of navigation in navigable inland waters, with the purpose of mutual support and the establishment of instructions and guidance for hydrographic survey and the production of nautical charts (see also Resolution A3.4).

   f. Monitor the development and use of hydrographic and cartographic standards on navigable inland waters, and report as necessary to the IRCC.

2. Where the responsibility for hydrography and nautical cartography of maritime and navigable inland waters is divided among different organizations, Member States are encouraged to create National Hydrographic Committees.(see also Resolution T1.3)

**DIGITAL INFORMATION PORTRAYAL W.G. (DIPWG)**
(Formerly, Colours and Symbols Maintenance W.G. - M-3 TR K2. 26 refers)

**Terms of Reference and Rules of Procedure**
As agreed by CHRIS-20, November 2008
(Changes from the previous ToR / RoP have been emphasized)

## 1. Objective

To maintain IHO specifications for colours, symbols and display rules used to show SENC information on ECDIS in a safe and ergonomic manner.

## 2. Authority

This WG is a subsidiary of the ~~Committee on Hydrographic Requirements for Information Systems (CHRIS)~~ Hydrographic Services and Standards Committee (HSSC). Its work is subject to ~~CHRIS~~ HSSC approval.

## 3. Procedures

a) The WG should:

(i) Maintain ~~Appendix 2 of~~ IHO Special Publication S-52 and its accompanying Presentation Library, by preparing and promulgating maintenance documents when required.

(ii) Perform maintenance of ~~Appendix 2~~ S-52 by immediate amendments for safety related matters and long-term revisions by deferred amendments.

(iii) Draft new editions of S-52 ~~Appendix 2~~ as instructed by ~~CHRIS~~ HSSC.

(iv) Identify basic scientific fundamentals and provide guidance to ECDIS manufacturers related to colours and symbolization of hydrographic information.

(v) Provide and maintain a framework for display of SENC information that is feasible and practicable within available technology.

(vi) Coordinate technical exchange between ~~CSMWG~~ DIPWG, type-approval authorities, ECDIS manufacturers and ECDIS user community, including the conduction of comprehensive testing and validation of colours and symbolization by manufacturers, and at-sea trials with mariners.

(vii) Monitor the operational performance and development of IHO specifications, progress in display technology, and human perception analysis.

(viii) Consider new topics and other applications affecting electronic chart display, and/or draft the relevant extension documents.

b) The WG should work by correspondence, group meetings, workshops or symposia. The WG should meet at least once every two years.

c) The WG should liaise and harmonize with other ECDIS-related bodies as appropriate (e.g., TSMAD, CSPCWG, IEC, IMO/IHO HGE, IALA, WMO, IACS, NATO, etc.).

d) The WG should identify a work programme for each year, including expected time frame.

**4. Composition and Chairmanship**

a) The WG shall comprise representatives of IHO Member States (M/S), Expert Contributors and Accredited NGIO Observers.

b) Decisions should generally be made by consensus. If votes are required on issues or to endorse proposals presented to the WG, only M/S may cast a vote. Votes shall be on the basis of one vote per M/S represented.

c) Expert Contributor membership is open to entities and organisations that can provide a relevant and constructive contribution to the work of the WG.

d) The Chair and Vice-Chair shall be a representative of a Member State. The election of the Chair and Vice-Chair shall be decided at the first meeting after each ordinary session of the Conference (Conference to be replaced by Assembly when the revised IHO Convention enters force) and shall be determined by vote of the Member States present and voting.

e) If the Chair is unable to carry out the duties of the office, the Vice-Chair shall act as the Chair with the same powers and duties.

f) Expert Contributors shall seek approval of membership from the Chairman.

g) Expert Contributor membership may be withdrawn in the event that a majority of the M/S represented in the WG agree that an Expert Contributor's continued participation is irrelevant or unconstructive to the work of the WG.

h) All members shall inform the Chairman in advance of their intention to attend meetings of the WG.

i) In the event that a large number of Expert Contributor members seek to attend a meeting, the Chairman may restrict attendance by inviting Expert Contributors to act through one or more collective representatives.

# TIDAL AND WATER LEVEL WORKING GROUP (TWLWG)

## Terms of Reference

As agreed by CHRIS-20, November 2008
(Changes from CHRIS20-09.1A Annex B have been emphasized)

**1. Objective**

To provide technical advice and coordination on tidal, water level and vertical datum matters.

**2. Authority**

The Working Group (WG) is a subsidiary of the Hydrographic Services and Standards Committee (HSSC) and its work is subject to HSSC approval.

**3. Procedures**

a. The WG should:

(i) monitor and develop the use of tidal and water level information ~~data;~~
(ii) advise on the use of vertical datums;
(iii) advise on tidal and water level observation, analysis and prediction;
(iv) advise on matters concerning the exchange, distribution and use of tidal and water level related data;
(v) propose relevant amendments and improvements to IHO Technical Resolutions (M-3) relating to tidal, water level and vertical datum;
(vi) propose new tidal, water level and vertical datum topics and other applications for consideration by HSSC;
(vii) study principles and methods for conveying tidal and water level information to mariners.

b. The WG should work primarily by correspondence.

c. The WG should attempt to meet annually, normally in connection with another convenient IHO forum

d. The WG should liaise with other WGs; other IHO and international bodies as appropriate; and as instructed by HSSC.

**4. Composition and Chairmanship**

a. The WG shall comprise representatives of IHO Member States (MS), Expert Contributors and Accredited NGIO Observers, all of whom have expressed their willingness to participate, and a representative of the IHB.

b. Member States, Expert Contributors and Accredited NGIO Observers may indicate their willingness to participate at any time. A membership list shall be maintained and confirmed annually.

c. Expert Contributor membership is open to entities and organisations that can provide a relevant and constructive contribution to the work of the WG.

d. The Chair and Vice Chair shall be a representative of a Member State. The election of the Chair and Vice-Chair should normally be decided at the first meeting following each ordinary session of the Conference (Conference to be replaced by Assembly when the revised IHO Convention enters into force) and, in such case, shall be determined by vote of the Member States present and voting.

e. Decisions should generally be made by consensus. If votes are required on issues or to endorse proposals presented to the WG, only MS may cast a vote. Votes shall be on the basis of one vote per MS

represented. In the event that votes are required between meetings or in the absence of meetings, including for elections of the Chair and Vice-Chair, this shall be achieved through a postal ballot of those MS on the current membership list.

f. If a secretary is required it should normally be drawn from a member of the WG

g. If the Chair is unable to carry out the duties of the office, the Vice-Chair shall act as the Chair with the same powers and duties.

h. Expert Contributors shall seek approval of membership from the Chair.

i. Expert Contributor membership may be withdrawn in the event that a majority of the MS represented in the WG agree that an Expert Contributor's continued participation is irrelevant or unconstructive to the work of the WG.

j. All members shall inform the Chair in advance of their intention to attend meetings of the WG.

k. In the event that a large number of Expert Contributor members seek to attend a meeting, the Chair may restrict attendance by inviting Expert Contributors to act through one or more collective representatives.

## CONSOLIDATED HSSC WORK PLAN

As agreed by CHRIS-20, November 2008

**Objective:**
To ensure efficient project resource management and alignment, progress monitoring and to provide a communication utility with internal and external parties.

**Rationale:**
The justification for the HSSC Workplan are in conformance with the IHO Strategic Plan, and mainly related to the following elements of the IHO Work Programme – 2008/12:

Element 3.1 Meetings of Committees and Working Groups
Element 3.3 Nautical Cartography and Marine Data Management
Element 3.5 Data for Geomatics Application

**Revisions:**
Chairs of each Working Group, along with the HSSC Chair, will meet prior to each HSSC meeting to review progress, and to harmonize the Workplan.

**Approval:**
Once revised, the workplan will be approved by the HSSC plenary at each annual meeting. WG Chairmen will present an updated WP on the last day of HSSC meetings, incorporating the agreed changes discussed during that meeting. Completed Work Items should be removed from WPs after they have been reported at a subsequent HSSC meeting. A revised consolidated HSSC Work Plan (WP) incorporating all approved additional WP items will be circulated to participants of the meeting for final comment at the same time as the draft minutes of the meeting. HSSC Chair could seek committee members interim approval for emerging issues between meetings.

**Communications:**
The HSSC Work Plan will be posted on the IHO website, and a progress summary will be provided at IHO Conferences.

**Project Numbering:**
Each task will be given a sequential number independent of related Working Group. The related IHO Work Programme Element number and the specific HSSC meeting that approved the inclusion of the task will be identified in the HSSC Work Plan summary. Each WG SubTasks will be numbered using an alphanumeric sequence, "A*n*,B*n*,C*n*.."

**Priorities:**
Three Levels of Priorities (H, M, and L) will be assigned by HSSC using the Guidelines on the Evaluation of Proposals in the Work of HSSC and Subsidiary Bodies.

## 1. Guidelines for the Evaluation of Proposed New work Items for HSSC and its subsidiary bodies

### Introduction

1.1 In order to best use the limited resources available to HSSC and its subordinate bodies, it is necessary to evaluate and prioritise proposed new work items. These guidelines are based on the principles originally agreed at CHRIS/13 and CHRIS/15 and revised and enhanced at CHRIS/18. They are intended to provide a uniform basis for evaluation and prioritisation.

1.2 Evaluation should be done as a two-stage process:

a. general consideration leading to acceptance or rejection; and if accepted,

b. establishment of priorities.

### General acceptance

1.3 Before deciding to include a new item in the work programme of HSSC and its subordinate bodies, the following factors should be taken into account:

a. is the subject addressed by a proposal considered to be within:

(1) the scope of IHO objectives?

(2) the current IHO work programme?

b. has a need for the measure proposed been identified (for example, client demand, internal improvements)?

c. do adequate industry standards or solutions exist or are they being developed thereby reducing the need for action through HSSC and its subordinate bodies?

d. is the objective achievable in the existing HSSC and its subordinate bodies' work program?

e. What are the envisaged deliverables ?

### Establishment of priorities

1.4 Priorities for accepted work items should normally be assigned based on consideration of the following factors:

a. measures aimed at substantially preventing maritime casualties, marine pollution incidents or enhancing maritime security

b. measures to overcome identified deficiencies in existing IHO standards and technical resolutions;

c. measures needed to align IHO standards and resolutions with those of other relevant international standards and recommendations;

d. measures required to take into account the introduction of new technologies and methods in maritime operations;

e. measures required to take into account new techniques in data acquisition, processing and management, and production techniques in hydrography;

f. measures leading to increased Hydrographic Office efficiency.

1.5 Follow up actions in response to specific requests from the International Hydrographic Conference or other international and intergovernmental organisations should be evaluated in light of paragraph 4 above unless specifically identified as urgent matters.

### General remarks

1.6 When setting priorities, certain flexibility should be provided to allow for initiatives that could not be foreseen.

1.7 Once a decision has been made on the basis of the above for a new work item to be included in the work programme of HSSC and its subordinate bodies, an appropriate target completion date should be established, taking into account the urgency of the matter concerned.

1.8 In general, proposals for new work items as well as the revised work programs raised by WG Chairs as part of their annual reports should include a proposed priority for each work item, based on the guidelines above.

1.9 Wherever possible, proposed priorities for work items will be considered ahead of a meeting by a "Chair Group" comprising Chairman, Vice chairman, Secretary and all available Work Group Chairs. Final endorsement of work item priorities will rest with HSSC and be considered at the respective meeting.

## 2. HSSC relevant elements of IHO Work Programme 2008-2012

### 2.1 IHO Programme 3. Element 3.1 - Meetings of Committees and Working Groups

**Objective**

Achieve the requirements of the IHO Work Program through the coordination and interaction of the relevant Committees and Working Groups.

**Task 3.1.1** **~~Committee on Hydrographic Requirements for Information Systems~~ Hydrographic Services & Standards Committee (~~CHRIS~~ HSSC)**
The ~~CHRIS~~ HSSC Chairman, with the support of the IHB as needed, to organize, prepare and conduct the meetings scheduled annually 2008-2012, to coordinate and execute the detail of approved IHO WP items and to consider issues and provide guidance and advice to relevant organizations, bodies and MS.

**Task 3.1.2** **Transfer Standard Maintenance and Application Development Working Group (TSMAD)**
The Chairman of the TSMAD WG under the guidance of ~~CHRIS~~ HSSC and with IHB support as needed, to organize, prepare and conduct the meetings scheduled each six months during the period 2008-2012, to coordinate and execute the detail of approved IHO WP items and to consider issues and provide guidance and advice to relevant organizations, bodies and MS. To keep the following IHO publications updated: S-58, S-61, S-62 and ~~S-63~~ S-64; this last one in coordination with ~~CSM~~DIPWG. TSMAD Sub WGs, to meet as required.

**Task 3.1.3** **Chart Standardization and Paper Chart Working Group (CSPCWG)**
The Chairman of the CSPCWG under the guidance of ~~CHRIS~~ HSSC and with IHB support as needed, to organize, prepare and conduct the meetings annually 2008-2012, to coordinate and execute the detail of approved IHO WP items and to consider issues and provide guidance and advice to relevant organizations, bodies and MS. To keep IHO publication M-15 - List of Booklets on Chart Symbols updated. CSPCWG Sub WGs to meet as required.

**Task 3.1.4** **~~Colours and Symbols Maintenance~~ Digital Information Portrayal Working Group (~~CSM~~DIPWG)**
The Chairman of the ~~CSM~~DIPWG under the guidance of ~~CHRIS~~ HSSC and with IHB support as needed, to organize, prepare and conduct the meetings annually 2008-2012, to coordinate and execute the detail of approved IHO WP items and to consider issues and provide guidance and advice to relevant organizations, bodies and MS. To keep IHO publication S-64 updated, in coordination with TSMAD.

**Task 3.1.5** **Standardization of Nautical Publications Working Group (SNPWG)**
The Chairman of the SNPWG under the guidance of ~~CHRIS~~ HSSC and with IHB support as needed, to organize, prepare and conduct the meetings as required during the period 2008-2012, to coordinate and execute the detail of approved IHO WP items and to consider issues and provide

guidance and advice to relevant organizations, bodies and MS. SNPWG Sub-WGs to meet as required.

**Task 3.1.6 Data Protection Scheme Working Group (DPSWG)**

The Chairman of the DPSWG under the guidance of ~~CHRIS~~ **HSSC** and with IHB support as needed, to organize, prepare and conduct the meetings as required during the period 2008-2012, to coordinate and execute the detail of approved IHO WP items and to consider issues and provide guidance and advice to relevant organizations, bodies and MS.

**Task 3.1.7 IHO-IEC Harmonizing Group on Marine Information Objects (HGMIO)**

The Chairman of the HGMIO under the guidance of ~~CHRIS~~ **HSSC** and with IHB support as needed, to organize, prepare and conduct the meetings as required during the period 2008-2012, to coordinate and execute the detail of approved IHO WP items and to consider issues and provide guidance and advice to relevant organizations, bodies and MS.

## 2.2 IHO Programme 3. Element 3.3 - Nautical Cartography and Marine Data Management

**Objective**

Facilitate worldwide quality nautical charting coverage to suit the needs of the mariner in support of safe and efficient navigation through the development of specifications and standards for the production, distribution and updating of cartographic products and supporting publications.

**Task 3.3.1 Nautical Publications**

Revise, develop and maintain the following IHO publications, with the support of consultants as required (2008-2012 ongoing):

a) M-4 2008-2012 ongoing
b) M-11 2008-2012 ongoing
c) S-52 2008-2012 ongoing
d) S-57 2008
e) S-100 2008
f) S-101 2012
g) S-10X 2012
h) INT 1, INT2 and INT3

**Task 3.3.2 Digital Data Protection**

~~CHRIS~~ HSSC to provide support to users on the implementation and operation of the IHO data protection scheme S-63 (2008-2012). To develop and maintain S-63 with support for S-101 and other relevant specifications based on S-100 (2012). To provide IHB with support to operate the scheme as scheme administrator (2008-2012).

**Task 3.3.3 Liaison and cooperation with other organizations.**

~~CHRIS~~ HSSC to develop and maintain contact with relevant organizations to harmonize standards, to avoid potential conflicts, to anticipate development and to maximise the quality and availability of adequate nautical products and services. To invite participants to attend appropriate IHO forums (eg. Open ECDIS Forum) and to participate in governmental and non governmental groups such as: IEC/TC80, ISO TC211, DGIWG, GSDI, ICA Commission on Spatial Data Standards, GNSS-ICG. (2008-2012)

## 2.3 IHO Programme 3. Element 3.5 - Data for Geomatics Application

**Objective**

Facilitate the optimal use of hydrographic data for purposes other than navigation.

**Task 3.5.1 Development of Standards**

~~CHRIS~~ HSSC to develop processes under which Hydrographic Data and Exchange Products Specifications may be created under S-100. (2008-2009) To develop standards for coastal zone hydrographic surveys in support of coastal zone management, protection of the environment and natural hazards (e.g. tsunamis). (2008-2012)

**Task 3.5.2 Maritime Spatial Data Infrastructure**

~~CHRIS~~ HSSC to monitor global geomatics development, especially those connected with coastal zone data management and the development of national, regional and global spatial data infrastructure and to provide guidance to MS as appropriate. (2008-2012)

**HSSC Workplan - Summary Table**

| HSSC WG | Task | IHO W.P. | CHRIS/ HSSC Meeting | Projects | Priority H-high M-medium L-low | Start Date | End Date | Remarks |
|---|---|---|---|---|---|---|---|---|
| TSMAD | A | T3.3.1 | CHRIS-17 | Develop S-100 based on ISO TC211 geo-spatial standards | H | 2001 | 2007 | No product specifications shall be developed unless specifically directed |
| TSMAD | B | T3.1.2 | CHRIS-14 | Keep S-58 Recommended ENC validation checks up to date | H | 2002 | Cont | |
| TSMAD | C | | CHRIS-14 | Support FAQ and encoding advice sections of IHO web site up to date | H | 2002 | Cont | |
| TSMAD | D | T3.5.1 | CHRIS-19 | Develop Marine Environment Protection Product Specification based on S-100 | H | 2007 | 2009 | |
| DIPWG | A | T3.3.1 | CHRIS-14 | Maintain S-52 and its associated "Presentation Library" | H | 2002 | Cont | |
| DIPWG | B | T3.3.3 | CHRIS-14 | Contribute to IEC TC80/WG13 symbol harmonizing work | H | 2002 | 2008 | |
| DIPWG | C | T3.3.1 | CHRIS-14 & 20 | Examination of S-52 main documents and annexes for redundant operational aspects of ECDIS. | M | 2002 | 2007 | |
| DIPWG | D | | CHRIS-14 | Introduce new website based recommendation service for good application practice of S-52 | M | 2002 | 2008 | |
| DIPWG | E | | CHRIS-14 | Contribute to harmonised rules for ENC loading strategy, use of SCAMIN and overscale indication. | M | 2002 | Cont | |
| DIPWG | F | | CHRIS-14 | Assess the impact on S-52 C&S regulations of other IHO standards. | M | 2002 | Cont | |
| DIPWG | G | | CHRIS-18 | Improving ENC Consistency/loading strategies. | M | 2006 | Cont | |
| DIPWG | H | | CHRIS-17 | Harmonisation of pick report presentation | M | 2005 | 2008 | |
| DIPWG | I | T3.3.1 | CHRIS-18 | Develop Symbols for object and attribute enhancements of S-57 Edition 3.1.1 | M | 2006 | 2008 | |
| DIPWG | J | | CHRIS-17 | Harmonisation with CSPCWG. | M | 2005 | Cont | |
| DIPWG | K | | CHRIS-16 | Maintain the DIPWG bulletin and FAQ section on the IHO website. | M | 2004 | Cont | |
| DPSWG | A | T3.3.2 | CHRIS-18 | Prepare S-63 edition 1.1 to provide a more precise description for a compliant implementation of the data protection scheme. | H | 2006 | 2008 | Edition 1.1 published March 2008 (CL36/2008 refers) |
| DPSWG | B | T3.3.2 | CHRIS-18 | Provide technical and operational support to Data Servers and OEMs developing or operating systems or services compliant with S-63. | H | 2003 | | |

| HSSC WG | Task | IHO W.P. | CHRIS/ HSSC Meeting | Projects | Priority H-high M-medium L-low | Start Date | End Date | Remarks |
|---|---|---|---|---|---|---|---|---|
| CSPCWG | A | T3.3.1 | CHRIS-14 | Revise, develop and maintain Publication M-4 'Chart Specifications of the IHO & Regulations of the IHO for INT Charts' | M | 2003 | 2010 | Being revised by Sections |
| CSPCWG | B | T3.3.1 | CHRIS-14 & 20 | Revise, develop and maintain Publication M-11 'Catalogue of INT Charts' Part A maintained by CSPCWG | M | 2009 | 2010 | |
| CSPCWG | D | | CHRIS-15 | Development of new (and revised) symbology | M | 2004 | 2009 | Undertaken as they emerge |
| CSPCWG | E | T3.3.1 | CHRIS-14 | Maintenance of M-4 supplementary publications INT 1, 2 & 3 | M | 2003 | 2008 | Revisions may be due 2010 |
| CSPCWG | F | T3.3.1 | CHRIS-19 | Revise, develop and maintain S-49 'Recommendations concerning Mariners' Routeing Guides' | M | 2008 | 2009 | Sub-WG led by DE |
| CSPCWG | G | T3.1.3 | | Revise, develop and maintain Publication M-15 'List of Booklets on Chart Symbols & Abbreviations' | L | 2008 | 2009 | |
| CSPCWG | H | | CHRIS-19 | Review selected Technical Resolutions from Publication M3 'Technical and Administrative Resolutions' | H | 2007 | 2008 | Recommendations provided to IHB Jun 08 |
| SNPWG | A | | CHRIS-15 | Decide on the Data Format of NP-data intended for use in ECDIS (NP3) | H | 2003 | 2004 | |
| SNPWG | B | | CHRIS-15 | Define the content requirements of NP-data intended for use in ECDIS NP3). | M | 2004 | 2009 | |
| SNPWG | C | | CHRIS-15 | Develop test data sets | H | 2008 | 2009 | |
| SNPWG | D | | CHRIS-15 | Develop basic display rules for NP-data intended for use in ECDIS (NP3) | M | 2008 | 2009 | |
| SNPWG | E | | CHRIS-15 | Draft guidance documents. | H | 2008 | 2009 | |
| SNPWG | F | | CHRIS-15 | Revise technical resolutions as required. | H | 2007 | 2008 | |
| SNPWG | G | | CHRIS-15 | Liaise with other ~~CHRIS~~ HSSC WG's and other IHO and international | H | 2004 | | |
| DQWG | A | | CHRIS-19 | Review ISO 19113, 19114, and 19115 and make recommendations for inclusion in S-100 | M | | | |
| DQWG | B | | CHRIS-19 | Monitor and further develop quality indicators for hydrographic data | M | | | |
| DQWG | C | | CHRIS-19 | Review and revise as needed existing S-57 quality indicators | H | | | |
| DQWG | D | | CHRIS-19 | Review and revise presentation in S-52 | M | | | |
| DQWG | E | | CHRIS-19 | Investigate ways of ensuring that ECDIS displays provide a clear warning or indication of the quality of the underlying survey data | | | | |

| HSSC WG | Task | IHO W.P. | CHRIS/ HSSC Meeting | Projects | Priority H-high M-medium L-low | Start Date | End Date | Remarks |
|---|---|---|---|---|---|---|---|---|
| DQWG | F | | CHRIS-19 | Propose new data quality topics and other applications for consideration by ~~CHRIS~~ HSSC | | | | |
| MSDIWG | A | T3.5.2 | CHRIS-19 | Prepare, undertake and complete an audit of IHO Member States to establish their level of knowledge and understanding of the benefit of supporting National SDI initiatives and their capability in supporting the development of Marine SDI. | | | | |
| MSDIWG | B | T3.5.2 | CHRIS-19 | Analyse the results of the research audit and establish the benchmark for future IHO support and / or capacity building required ,and assist in the development of an IHO SDI Guide. | | | | |
| MSDIWG | C | T3.5.2 | CHRIS-19 | Provide the preliminary IHO SDI Guide framework for Member States incorporating necessary step by step approach to SDI. | | | | |
| MSDIWG | D | T3.5.2 | CHRIS-19 | Provide, to CHRIS Meeting 20, a report of WG activities to date and to recommend (if necessary) an extension to the life of the WG in the light of results and / or progress achieved in the 2008 work programme. | | | | |

## 3. TSMAD Work Plan

### 3.1 TSMAD Tasks

A Develop S-100 based on ISO TC211 geo-spatial standards (IHO T3.3.1 refers)

B Keep S-58 Recommended ENC validation checks up to date (IHO T3.1.2 refers)

C Support FAQ and encoding advice sections of IHO web site up to date

D Develop Marine Environment Protection Programme based on S-100 (IHO T3.5.1 refers)

| Task | Work item | Priority<br>H-high<br>M-medium<br>L-low | Milestones | Start Date | End Date | Status<br>P-Planned<br>O-Ongoing<br>C-Completed | Contact Person(s) | Affected Pubs/Standard | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| A | S-100 | H | Draft Version published March 2008, S-100 Editing Committee Meeting Sept 2008 | 2001 | 2009 | O | Barrie greenslade | | |
| A.2 | Develop S-101 ENC product specification | M | | 2006 | Jan 12 | O | Julia Powell, Richard Fowle | | |
| A.4 | Develop S-100 Time varying and 3-D data. component | H | | 2001 | Oct.04 | | Jim Radice | | Deleted, absorbed into other work items. |
| A 6d | Develop S-100 Encoding Component | H | | | | O | Barrie Greenslade | | |
| A.7 | Develop S-100 Bathymetric Content Specification. | H | | 2001 | | O | Wade Ladner | | |
| A.8 | Develop S-100 Portrayal Component | H | | 2006 | | O | CSMWG | | |
| A.9 | Develop S-57 to paper chart functionality and Print-on-Demand (POD) file transfer guidelines. | M | | 2003 | | P | No current work item leader | | Not Activated |

| Task | Work item | Priority<br>H-high<br>M-medium<br>L-low | Milestones | Start Date | End Date | Status<br>P-Planned<br>O-Ongoing<br>C-Completed | Contact Person(s) | Affected Pubs/Standard | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| A.10 | Liaise with Non-IHO Constituents, e.g. Inland ECDIS, Marine Navigation Industry, DGIWG, AML, WMO Ice, and GIS Industry. | H | | 2004 | - | O | | | |
| B.1 | Keep S-58 Recommended Validation Checks up to date | H | | 2003 | - | O | Guy Uguen | | |
| C.1 | Support FAQ and Encoding Bulletins | H | | 2003 | - | O | Jeff Wooton | | |
| D | Develop Marine Environment Protection Product Specification based on S-100 | M | | 2007 | 2009 | O | Craig Winn | S-100 | |

## 3.2 **TSMAD Meetings** (IHO T3.1.2 refers)

**TSMAD**

| Date | Location | Activity |
|---|---|---|
| 29 Sep – 3 Oct 03 | Wollongong, Australia | 10th Meeting |
| 11-12 November 04 | IHB, Monaco | 11th Meeting |
| 10-11 November 05 | Wollongong, Australia | 12th Meeting |
| 18-22 September 06 | Wellington, New Zealand | 13th Meeting |
| 4-8 June 07 | UKHO, Taunton | 14th Meeting |
| 14-18 January 08 | IHB, Monaco | 15th Meeting |
| 5-9 May 08 | Cape Town, South Africa | 16th Meeting |
| 8-12 September 08 | Seattle, USA | 17th Meeting |

**TSMAD S-100 Sub-WG**

| Date | Location | Activity |
|---|---|---|
| 25-29 April 05 | Univ. of NH, USA | 8th Meeting |
| 7-9 November 05 | Wollongong, Australia | 9th Meeting |
| 15-19 May 06 | Brest, France | 10th Meeting |
| 18-22 September 06 | Wellington, New Zealand | 11th Meeting |
| 27-1 December 06 | Silver Spring, USA | 12th Meeting |
| 23-27 April 07 | Ottawa, Canada | 13th Meeting |
| 17-21 September 07 | Hamburg, Germany | 14th Meeting |

Chairman: Barrie GREENSLADE Email: Barrie.Greenslade@UKHO.gov.uk
Vice Chairman: Don VACHON Email: VachonD@DFO-MPO.GC.CA
Secretary: Anthony PHARAOH Email: apharaoh@ihb.mc

## 4. DIPWG Work Plan

### 4.1 DIPWG Tasks

A Maintain S-52 and its associated "Presentation Library" (IHO T3.3.1 refers)

B Contribute to IEC TC80/WG13 symbol harmonizing work (IHO T3.3.3 refers)

C Examination of S-52 main documents and annexes for redundant operational aspects of ECDIS (IHO T3.3.1 refers)

D Introduce new website based recommendation service for good application practice of S-52 (IHO T3.3.1 refers)

E Contribute to harmonised rules for ENC loading strategy, use of SCAMIN and overscale indication

F Assess the impact on S-52 C&S regulations of other IHO standards

G Improving ENC Consistency/loading strategies

H Harmonisation of pick report presentation

I Develop Symbols for object and attribute enhancements of S-57 Edition 3.1.1(IHO T3.3.1 refers)

J Harmonisation with CSPCWG

K Maintain the DIPWG bulletin and FAQ section on the IHO website

| Task | Work item | Priority<br>H-high<br>M-medium<br>L-low | Milestones | Start Date | End Date | Status<br>P-Planned<br>O-Ongoing<br>C-Completed | Contact Person(s) | Affected Pubs/Standard | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| A.2 | Implementation of changed requirements of revised IMO ECDIS PS into S-52 C&S regulations | H | | 2006 | 2009 | 0 | Mathias Jonas<br>Julia Powell | S-52 Main Doc, App. 1, App. 2, Annex A, | |
| A.3 | Issue Maintenance Document No. 7 of S-52, App. 2, Edition 4." | M | | 2008 | 2008 | P | Mathias Jonas | S-52 Main Doc, App. 1, App. 2, Annex A, | |
| C.1 | Re-structure S-52 including annexes under consideration of the recent revisions of applying documents of IMO and IEC. | H | | 2008 | 2009 | P | Mathias Jonas<br>Michel Huet | S-52 and Annexes | |

| Task | Work item | Priority<br>H-high<br>M-medium<br>L-low | Milestones | Start Date | End Date | Status<br>P-Planned<br>O-Ongoing<br>C-Completed | Contact Person(s) | Affected Pubs/Standard | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| C.2 | Liaise with IEC to harmonize the resulting new draft of S-52 with IEC61174 and IEC62288 through the Chairman of IEC/TC80. | H | | 2008 | 2009 | P | Mathias Jonas | S-52 and Annexes | |
| C.3 | Present a re-drafted S-52 to HSSC-1. | H | | 2009 | 2009 | P | Mathias Jonas | S-52 and Annexes | |
| F.2 | In close liaison with TSMAD, set up a portrayal register within the S100 registry | H | | 2005 | 2009 | P | Mathias Jonas<br>Pol Lebihan<br>Julia Powell | S-52, App. 2<br>S100 | |
| J.1 | Liaise with CSPCWG | M | | 2005 | | O | Mathias Jonas | S-52, App.2 Annex A | |
| K.1 | Establish links at IHB server | M | | 2005 | | O | Michel Huet | S-52, App.2 Annex A | |

## 4.2 CSMWG/DIPWG Meetings (IHO T3.1.4 refers)

| Date | Location | Activity |
|---|---|---|
| 18-20 May 03 | Ottawa, Canada | 14th Meeting |
| 2-4 May 05 | Rostock, Germany | 15th Meeting |
| 29-31 May 06 | IHB Monaco | 16th Meeting |
| 11-13 June 07 | Stavanger, Norway | 17th Meeting |
| 7-9 May 08 | Cape Town, South Africa | 18th Meeting |

Chairman: Mathias JONAS Email: mathias.jonas@bsh.de
Vice Chairman: Julia POWELL Email: Julia.Powell@noaa.gov
Secretary: Vacant Email:

## 5. DPSWG Work Plan

### 5.1 DPSWG Tasks

A Prepare S-63 edition 1.1 to provide a more precise description for a compliant implementation of the data protection scheme (IHO T3.3.2 refers)
B Provide technical and operational support to Data Servers and OEMs developing or operating systems or services compliant with S-63 (IHO T3.3.2 refers)

| Task | Work item | Priority<br>H-high<br>M-medium<br>L-low | Milestones | Start Date | End Date | Status<br>P-Planned<br>O-Ongoing<br>C-Completed | Contact Person(s) | Affected Pubs/Standard |
|---|---|---|---|---|---|---|---|---|
| A.2 | Prepare a comprehensive test data set for edition 1.1 .including full support for a multi supplier environment. | H | Ongoing.<br>S64 complete<br>Iec61174 input ongoing | 01.09.06 | 15.12.07 | O | Robert Sandvik, Primar | S-63 edition 1.0 |
| B.1 | Provide S-63 technical and operational support to Data Servers and OEMs | H | Ongoing | 01.08.03 | | O | DPSWG members | S-63 edition 1.0/1.1 |
| B.2 | Develop a work plan for future standards relating to Data Protection and Security of ENC data. | H | Planned | 01.10.08 | | P | Jonathan Pritchard, UKHO | S-63, S101 |

### 5.2 DPSWG Meetings (IHO T3.1.6 refers)

| Date | Location | Activity |
|---|---|---|
| 24-25 Nov. 2003 | IHB, Monaco | DPSWG 3 |
| 22-23 June 2004 | IHB, Monaco | DPSWG 4 |
| 31 Aug - 1 Sept 2006 | IHB, Monaco | DPSWG 5 |
| 28-30 May 2007 | IHB, Monaco | DPSWG 6 |

Chairman: Jonathan PRITCHARD Email: Jonathan.Pritchard@ukho.gov.uk
Vice Chairman: Vacant Email:
Secretary: Richard COOMBES Email: Richard.Coombes@UKHO.gov.uk

## 6. CSPCWG Work Plan

- *Objectives, Tasks and Work Items are pursued in accordance with IHO Work Programme 2008-2012, Programme 3 (Techniques and Standards Coordination and Support):*
    - *Element 3.1 Meetings of Working Groups:*
        - *Task 3.1.3 Chart Standardization and Paper Chart Working Group*
    - *Element 3.3 Nautical Cartography. In particular:*
        - *Task 3.3.1 Nautical publications*
        - *Task 3.3.5 INT Chart Series*
- *The focus is on maintaining and enhancing the cartographic standards in paper charts to suit the needs of the modern mariner in support of safe navigation, whilst drawing together, wherever possible, common issues of paper/electronic charting.*

- *As a Plan it will and should evolve; accordingly, contributions from WG members and others are welcomed at any time.*

### 6.1 CSPCWG Tasks

A Revise, develop and maintain Publication M-4 'Chart Specifications of the IHO & Regulations of the IHO for INT Charts' (IHO T3.3.1 refers)

B Revise, develop and maintain Publication M-11 'Catalogue of INT Charts' Part A maintained by CSPCWG (IHO T3.3.1 refers)

D Development of new (and revised) symbology

E Maintenance of M-4 supplementary publications INT 1, 2 & 3 (IHO T3.3.1 refers)

F Revise, develop and maintain S-49 'Recommendations concerning Mariners' Routeing Guides'

G Revise, develop and maintain Publication M-15 'List of Booklets on Chart Symbols & Abbreviations' (IHO T3.1.3 refers)

H Review selected Technical Resolutions from Publication M-3 'Technical and Administrative Resolutions'

| **Task** | **Work item** | **Priority**<br>H-high<br>M-medium<br>L-low | **Next Milestone** | **Start Date** | **End Date** | **Status**<br>P-Planned<br>O-Ongoing<br>C-Completed | **Contact Person(s)** | **Affected Pubs/Standard** | **Remarks** |
|---|---|---|---|---|---|---|---|---|---|
| A.4 | Revise M-4 Part B Section 400 | H | Revise and publish | 2005 | 2009 | O | Sec CSPCWG | M-4 / B-400 | B-400 divided into sub-sections for manageability. |
| A.4.4.1 | Sub-section B-450 to B-479 | H | Approval of MS | 2007 | 2008 | O | Sec CSPCWG | M-4 / B-400 | PDF version prepared, CL71/2008 refers |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| A.4.4.2 | Sub-section B-480 to B-499 | H | WG Ltr for round 1 | 2008 | 2009 | O | Sec CSPCWG | M-4 / B-400 | Draft in prep |
| A.5 | Revise M-4 Part B Section 300 | L | Completion of A.8 | | | P | Sec CSPCWG | M-4 / B-300 | Start after A.8 completed |
| A.6 | Revise M-4 Part B Section 500 | L | Completion of A.5 | | | P | Sec CSPCWG | M-4 / B-500 | Start after A.5 |
| A.8 | New specification for Chart Maintenance Section B-600 | M | WG Ltr for round 1 | 2006 | 2009 | O | Sec CSPCWG | M-4 / B-600 | 1st draft with WG |
| B.2 | Develop ToR / RoP for INT Chart Coordinators | H | | 2009 | 2009 | P | Chair CSPCWG | M-11 Part A | CHRIS Action 20/23 |
| B.3 | Develop guidelines for preparation & maintenance of small / medium scale ENC schemes. | M | | 2009 | 2010 | P | Chair CSPCWG | M-11 / S-65 ? | CHRIS Action 20/24 |
| D.9 | Develop new symbol for synchronized and sequential lights | M | Approval of MS | 2005 | 2008 | O | Sec CSPCWG | M-4, INT 1 | Included in A.4.4.1 |
| D.13 | Mangroves | M | Approval of MS | 2006 | 2008 | O | Sec CSPCWG | M-4, INT 1 | CL71/2008 refers |
| D.14 | Bridges (especially supports) | | CSPCWG5 | 2008 | 2009 | P | Sec CSPCWG | M-4 | CSPCWG5 agenda discussion |
| E.1 | Maintain official INT 1s | n/a | Next round of revisions to be considered after pub of B450-479 | | | P | FR: Y Le Franc<br>ES: J Millan<br>DE: S Spohn | INT 1 | French version 2006.<br>Spanish version 2007.<br>English version 2008 (by DE). |
| E.4 | Symbols for vacant entries in INT 1 | L | Review when revision of M-4 completed | | | P | Sec CSPCWG | INT 1, M-4 part B | CSPCWG4 Action 32. See WG Ltr 10/08 – propose nfa. |
| E.5 | Small craft symbols | L | | | | P | Sec CSPCWG | INT 1, M-4 part B | |
| E.7 | Review terms in INT1 for consistency with M4 | L | Review at next revision of INT1 (see E.1) | | | P | Sec CSPCWG &<br>INT1 subWG | | Selected review conducted, concluding no significant issue. |
| E.8 | Move part of INT1 K into L | L | When next round of revisions of INT1 is planned (see E.1) | | | P | INT1 subWG | | CSPCWG4 Action 33 |
| F.1 | Review S-49 | M | Discussion at CSPCWG5 | 2008 | 2009 | P | Chairman & DE (J Schröder-Fürstenberg) | S-49 | CSPCWG4 Action 38. Germany volunteered to lead |

## 6.2 **CSPCWG Meetings** (IHO T3.1.3 refers)

| Date | Location | Activity |
|---|---|---|
| 03-05 Nov 04 | IHB, Monaco | CSPCWG 1 |
| 19-21 Oct 05 | IHB, Monaco | CSPCWG 2 |
| 22-24 Nov 06 | IHB, Monaco | CSPCWG 3 |
| 13-15 Nov 07 | IHB, Monaco | CSPCWG 4 |
| 18-21 Nov 2008 | Sydney, Australia | CSPCWG 5 |

Chairman: Peter JONES Email: peter.jones@ukho.gov.uk
Vice Chairman: Jeff WOOTTON Email: jeff.wootton@defence.gov.au
Secretary: Andrew HEATH-COLEMAN Email: andrew.coleman@ukho.gov.uk

## 7. SNPWG Work Plan

### 7.1 SNPWG Tasks

A Decide on the Data Format of NP-data intended for use in ECDIS (NP3)

B Define the content requirements of NP-data intended for use in ECDIS (NP3)

C Develop test data sets

D Develop basic display rules for NP-data intended for use in ECDIS (NP3)

E Draft guidance documents

F Revise technical resolutions as required

G Liaise with other ~~CHRIS~~ HSSC WG's and other IHO and international bodies

| Task | Work Item | Priority<br>H-high<br>M-medium<br>L-low | Start Date | End Date | Status<br>P-Planned<br>O-Ongoing<br>C-Completed | Contact Person | Affected Pubs /Standard | Remarks |
|---|---|---|---|---|---|---|---|---|
| B.2 | Model the data where required. | H | 2004 | Open | O | Chair/Sec SNPWG | S-100 | To be included in NPUBS register |
| B.3 | Review of objects and attributes | H | 2004 | 2008 | O | Chair/Sec SNPWG | S-100 | |
| B.4 | Propose amendments for Hydro register to TSMAD | H | 2005 | Open | O | Chair/Sec SNPWG | S-100 | To be included in S-100 registry |
| B.6 | Populate the NPUBS Register | H | 2006 | Open | O | Chair/Sec SNPWG | S-100 | |
| C.1 | Produce test data set | H | 2009 | 2010 | P | Chair/Sec SNPWG | | |
| C.2 | Liaise with relevant OEMs to display test data set | M | 2009 | 2011 | P | Chair/Sec SNPWG | | |
| D.1 | Develop basic display rules for NP data intended for use in ECDIS (NP3) | M | 2008 | 2009 | O | Chair/Sec SNPWG | S-52 | Close Co-operation with CSMWG required |
| E.1 | Data Capture Guidance | H | 2008 | 2009 | O | Chair/Sec SNPWG | | Document for NPs similar to Use of the Object Catalog |

| Task | Work Item | Priority<br>H-high<br>M-medium<br>L-low | Start Date | End Date | Status<br>P-Planned<br>O-Ongoing<br>C-Completed | Contact Person | Affected Pubs /Standard | Remarks |
|---|---|---|---|---|---|---|---|---|
| E.2 | Draft Product Specification Guidance and Example | H | 2008 | 2009 | O | Chair/Sec SNPWG | S-10X | |
| F.1 | Revise technical resolutions | H | 2007 | 2008 | O | Chair/Sec SNPWG | M3 | |
| G.1 | Liaise with the CSMWG for the development of the display rules | H | 2005 | Open | O | Chair/Sec SNPWG | | |
| G.2 | Liaise with the TSMADWG | H | 2004 | Open | O | Chair/Sec SNPWG | | |
| G.3 | Liaise with other groups | H | 2004 | Open | O | Chair/Sec SNPWG | | Tides, MIO's, AML, ICE, Inland ECDIS |

## 7.2 **SNPWG Meetings** (IHO T3.1.5 refers)

| Date | Location | Activity |
|---|---|---|
| 7-9 June 04 | NOAA, Silver Spring, MD, USA | 3rd Meeting |
| 1-3 March 05 | IHB, Monaco | 4th Meeting |
| 24-28 October 05 | Copenhagen, Denmark | 5th Meeting |
| 19-23 June 06 | IHB, Monaco | 6th Meeting |
| 12-16 Feb 07 | Rostock, Germany | 7th Meeting |
| 3-7 Sept 07 | IHB, Monaco | 8th Meeting |
| 21-25 Apr 08 | Brest, France | 9th Meeting |

Chairman: David ACLAND Email: David.Acland@UKHO.gov.uk
Vice-chairman: John NYBERG Email: John.Nyberg@noaa.gov
Secretary: Pelle AGAARD Email: petar@kms.dk

## 8. DQWG Work Plan

### 8.1 DQWG Tasks

A Review ISO 19113, 19114, and 19115 and make recommendations for inclusion in S-100

B Monitor and further develop quality indicators for hydrographic data

C Review and revise as needed existing S-57 quality indicators

D Review and revise presentation in S-52

E Investigate ways of ensuring that ECDIS displays provide a clear warning or indication of the quality of the underlying survey data

F Propose new data quality topics and other applications for consideration by ~~CHRIS~~ HSSC

| Task | Work Item | Priority<br>H-high<br>M-medium<br>L-low | Milestones | Start Date | End Date | Status<br>P-planned<br>O-ongoing<br>C-Completed | Contact Person | Affected Pubs/Standard | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| A.1 | Review ISO standards | M | | Dec 2008 | April 2009 | P | TBD | | |
| A.2 | Make recommendations For inclusion in S-100 | | | | Nov. 2010 | P | TBD | S-100 | |
| B.1 | Re-evaluate customer requirements for data Quality indicators | M | | Sept. 2008 | Sept. 2009 | O | DQWG | | Recruit subject matter expert(s) to discuss at Norfolk meeting. Literature search. |
| B.2 | Brainstorm alternate approaches to data quality | M | | Sept. 2008 | Sept. 2009 | O | DQWG | | Open meetings at Caris and Shallow Survey |
| B.3 | Choose one approach | M | | | Sept 2009 | P | DQWG | | |
| D.1 | Review current functionality in ECDIS with current products | M | | Dec 2008 | May 2009 | P | DQWG | | Live and static displays, Potentially demo at May meeting |
| D.2/E.1 | Develop logic tree for alarms in current and proposed approaches | | | May 2009 | Sept 2009 | P | DQWG | | |
| E.2 | Find ECDIS or ECS partner for demos and experiments | | | July 2009 | Dec 2009 | P | DQWG | | |
| E.3 | Develop a demonstration project | | | Dec 2009 | Apr 2010 | P | DQWG | | |

## 8.2 DQWG Meetings

| Date | Location | Activity |
|---|---|---|
| 23 Sep 08 | Bath, UK | Kick-off meeting |
| 20 Oct 08 | Portsmouth, NH, USA | 1st Meeting |
| During week 11-15 May 09 | Norfolk, Virginia, USA | 2nd Meeting |

Chairman: Shepard SMITH Email: shep.smith@noaa.gov
Vice-chairman: Chris HOWLETT Email: Chris.Howlett@ukho.gov.uk
Secretary: Vacant Email:

## 9. MSDIWG Work Plan

### 9.1 MSDIWG Tasks

A Prepare, undertake and complete an audit of IHO Member States to establish their level of knowledge and understanding of the benefit of supporting National SDI initiatives and their capability in supporting the development of Marine SDI. (IHO T3.5.2 refers)

B Analyse the results of the research audit and establish the benchmark for future IHO support and / or capacity building required ,and assist in the development of an IHO SDI Guide. (IHO T3.5.2 refers)

C Provide the preliminary IHO SDI Guide framework for Member States incorporating necessary step by step approach to SDI. (IHO T3.5.2 refers)

D Provide, to CHRIS Meeting 20, a report of WG activities to date and to recommend (if necessary) an extension to the life of the WG in the light of results and / or progress achieved in the 2008 work programme. (IHO T3.5.2 refers)

| **Task** | **Work item** | **Priority**<br>H-high<br>M-medium<br>L-low | **Milestones** | **Start Date** | **End Date** | **Status**<br>P-planned<br>O-ongoing<br>C-completed | **Contact Person(s)** | **Related Pubs/Standard** |
|---|---|---|---|---|---|---|---|---|
| B.2 | Identify actions /procedures IHO might take to assist development of NSDI / MSDI in support of MS's | H | Provide preliminary framework for future IHO support | Sep 2008 | Dec 2008 | O | Chair: MSDIWG | |
| C.1 | Preparation of MSDI "Guide" for IHO MS's | M | Completion of Guide to IHO | Sep 2008 | May 2009 | O | Chair; MSDIWG | Building EU Spatial Data Infrastructures: [Ian Masser 2006].<br>EU INSPIRE Directive [2007/2/EC]<br>Geoconnections Canada |
| C.2 | Preparation of IHO Road Map to support MS's capability development in MSDI | M | Build Training and knowledge transfer and capacity building activity matrix | Dec 2008 | Apr 2009 | P | Chair/Vice Chair; MSDIWG | |
| D1 | Provide report to EIHC on completion of agreed tasks | H | Completed report submitted | Sep 2008 | May 2009 | O | Chair: MSDIWG | |

## 9.2 MSDIWG Meetings

| Date | Location | Activity |
|---|---|---|
| 4-5 Feb 08 | IHB, Monaco | 1st Meeting |
| 10-11 Sep 08 | IHB, Monaco | 2nd Meeting |

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