

2nd IHO-HSSC Meeting  
Rostock, Germany, 26-29 October 2010

## Paper for Consideration by HSSC

### Standardised Development, Consultation and Approval Procedures for IHO Technical Standards

<b>Submitted by:</b>	IHB
<b>Executive Summary:</b>	This paper invites the HSSC to recommend to MS a revision to IHO Resolution 2/2007 (formerly, A1.21) to more clearly define the development, consultation and approval procedures for IHO technical standards.
<b>Related Documents:</b>	IHO Resolution 2/2007 (formerly, A1.21) - <i>Principles and Procedures for making changes to IHO Technical Standards and Specifications</i>  HSSC-1 paper HSSC1-06.1B - <i>Standardised Development, Consultation and Approval Procedures for IHO Technical Standards</i>  HSSC-2 paper HSSC2-05.1B - <i>Draft IHO Publication S-99 - IHO Geospatial Information Registry - Structure, Organization and Management</i>

#### Introduction / Background

1. In 2009, the IHB submitted paper HSSC1-06.1B - *Standardised Development, Consultation and Approval Procedures for IHO Technical Standards* that proposed certain changes to IHO Resolution 2/2007 (formerly, A1.21) to standardise the procedures for the approval and versioning of changes to IHO technical standards. A copy of the existing IHO Resolution 2/2007 is at Annex A.
2. The proposals were agreed by HSSC-1, subject to the IHB taking into account certain special cases, such as S-4 and the Hydrographic Dictionary (HSSC-1 Action 14 refers). As a result of these considerations, and extensive discussions with the chairman of TSMAD leading to a comprehensive understanding of the status and capabilities of the IHO Geospatial Registry and the management framework described in the proposed IHO publication S-99 - *IHO Geospatial Information Registry - Structure, Organization and Management* (see paper HSSC2-05.1B), the IHB has revised its proposal for further consideration by HSSC. The proposed revisions are shown at Annexes B and C.

#### Consultation and Approval Processes for IHO Standards

3. IHO Resolution 2/2007 highlights the need to ensure that any changes to IHO technical standards are very carefully considered, especially in relation to the impact on existing users and stakeholders. For this reason, it is acknowledged that the most important and far reaching changes require consultation with relevant stakeholders both in the IHO and elsewhere and then the final approval of Member States before they can enter into force. At the same time, less significant changes to technical standards, for example, to add clarification or to correct errors or omissions have less or no direct impact on existing users. So, in the interests of efficiency and timeliness, the same wide consultation and processes and high-level approval that applies to new technical standards or major revisions should not be required. However, the existing IHO Resolution 2/2007 does not provide guidance regarding which processes should apply for any particular circumstance. The proposals contained in this paper seek to provide that guidance.

## ISO Definition of a Standard

4. ISO/IEC Directives, Part 2 - *Rules for the Structure and Drafting of International Standards* defines a standard as

... a document, established by consensus and approved by a recognized body, that provides for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context.

5. The ISO defines a guide as

... a document giving orientation, advice or recommendations on non normative matters relating to international standardization.

6. Using these definitions, the existing IHO standards and guidelines can be categorized according to the list at Annex D to this paper.

7. According to the ISO/IEC definitions, certain IHO documents, such as S-23 – *Limits of Seas and Oceans*, S-60 - *Users Handbook on Datum Transformations involving WGS 84*, S-65 – *ENC Production Guidance*, S-100 – *Universal Hydrographic Data Model* are NOT standards. Conversely, there are some IHO “guidelines” that should be considered as standards, such as S-11 Part A – *Guidance for the Preparation and Maintenance of INT chart schemes*, and S-58 – *Recommended ENC Validation Checks*. In the context of the proposals in this paper, *product specifications* are definitely considered as *standards*.

## Controlling Changes to Standards

8. Most standards and authoritative technical references, such as software programs classify changes at various levels (typically 3) according to their impact on users and stakeholders. The development, consultation and approval process for each level of change is different; ranging from a very comprehensive evaluation regime for changes that introduce major new features or requirements, to working level approval for simple editorial changes or clarifications to an existing text. IHO standards S-52 and S-57 have followed this approach with three levels of changes being designated as *extensions*, *corrections*, and *clarifications*. IHO publication S-100 follows the same approach. For the sake of consistency, this methodology could be extended to cover all the IHO standards and product specifications using the following definitions:

**New Edition.** *New Editions* of standards and product specifications introduce significant changes to a standard or a dependent product specification. *New Editions* enable new concepts, such as the ability to support new functions or applications, or the introduction of new constructs or data types, covering subject matter not previously part of the standard. *New Editions* are likely to have a significant impact on either existing users or future users of the revised standard or specification. It follows that a full consultative process that provides an opportunity for input from as many stakeholders as possible is required. Proposed changes to a standard should be evaluated and tested wherever practicable. The approval of Member States is required before any *New Edition* of a standard or a product specification can enter into force. All cumulative *clarifications* and *revisions* should be included with the release of an approved *New Edition* of a standard or product specification.

**Revision.** *Revisions* are substantive semantic changes to a standard or a dependent product specification. Typically, revisions change existing specifications to correct factual errors; introduce necessary changes that have become evident as a result of practical experience or changing circumstances, or add new specifications within an existing section. A *revision* shall not be classified as a *clarification*. *Revisions* could have an impact on either existing users or future users of a revised standard or product specification. It follows that a full consultative process that provides an opportunity for input from as many stakeholders as possible is required. Proposed revisions to a standard should be evaluated and tested wherever practicable. The approval of Member States is required before any *revisions* to a standard or a product specification can enter into force. All cumulative *clarifications* should be included with the release of approved revisions.

**Clarification.** Clarifications are non-substantive changes to a standard or a dependent product specification. Typically, clarifications remove ambiguity, correct grammatical and spelling errors,

amend or update cross references, or insert improved graphics. A clarification must not cause any substantive semantic change to a standard or a product specification. *Clarifications* are the responsibility of the relevant expert WG and may be delegated to the responsible editor.

9. A *revision* shall not be classified as a *clarification* in order to by-pass the appropriate consultation processes.

10. Version control numbering used to identify changes (***n***) would then be as follows:

*New Editions* denoted as ***n***.0.0

*Revisions* denoted as n.***n***.0

*Clarifications* denoted as n.n.***n***

### **Standardised Development and Approval Processes for IHO Standards**

11. Controlling and properly considering changes to IHO technical standards and product specifications are one of the most critical aspects of the IHO technical programme because they can have a direct impact on stakeholders. For this reason, significant changes (*new editions* and *revisions*) to standards and product specifications must undergo a thorough evaluation, consultation and approval process. This principle is already reflected in the overview governance lifecycle diagram for IHO standards contained in Resolution 2/2007. However, a process flow diagram is missing.

12. A flow diagram showing the generic development, consultation and approval process that could be applied to IHO technical standards and to IHO Product Specifications is shown in the changes proposed in Annexes B and C. The diagram shows that stakeholder consultation and input is achieved through circulating all proposals to the external stakeholders registered with the IHB. Testing also would also involve relevant stakeholders as *expert contributors*.

13. Noting that in the proposed flow diagram external stakeholders are invited to review and comment on developments prior to final review by the HSSC, the existing requirement in resolution 2/2007 for the IHB to publish a “change note” can be removed from the Resolution.

14. Within the flow diagram, the role of the HSSC is to approve proposals for work to commence on new standards and changes to existing standards, to monitor progress as work proceeds and finally to consider the impact of the completed work on relevant stakeholders.

### **Urgent Amendments**

15. The introduction of *new editions* and *revisions* to existing standards and specifications is intentionally a thorough process, in order to allow for appropriate levels of development, testing and consultation. However, there will be instances where more urgent action is required, especially where there are serious implications to safety of navigation. In such cases, a “fast-track” approval and implementation process for *revisions* may be needed. This should only occur in exceptional circumstances and under the authority of the Member States. Any such fast-tracked *revisions* will still require the approval of Member States before they can enter into force. A recent example was the urgent introduction of temporal attribution rules for S-57 objects, announced by IHO Circular Letter 32/2009.

### **Recommendations**

16. In order to provide consistency in the administration, development, consultation and approval procedures for IHO standards, it is recommended that IHO Resolution 2/2007 be expanded as shown in Annexes B and C.

## Impact Statement

17. The proposal to amend IHO Resolution 2/2007 will ensure that changes to IHO technical standards are standardised according to agreed principles and include appropriate consultation processes as envisaged in the existing Resolution.

18. The general process diagram shown in the proposed amendment is based primarily on existing practices; therefore, there should be no adverse impacts (but see next paragraph concerning IHO publication S-4- *Chart Specifications for the IHO and Regulations for International (INT) Charts*).

19. In the case of the extensive and ongoing revision to S-4 - *Chart Specifications for the IHO and Regulations for International (INT) Charts* , it is proposed that the existing approval arrangements set out in S-4 Part B-160 and accepted by Member States remain in force until the current major revision of S-4 is completed (estimated to complete in 2012). This will avoid changing a well-established and accepted practice midway through the revision process.

### Extract from S-4 concerning the change approval process:

*The CSPCWG must recommend amendments to the Specifications to the IHB, who must communicate them to all IHO Members by Circular Letter, asking Members to make known any major objection within three months. After three months, in the absence of objections from one or more Members, the IHB must update the on line version of S-4 and announce, by a second Circular Letter, that the amendments have come into force and that members should consequently correct their copies of the Specifications. In the event of disagreement, the proposed amendments should be modified, if appropriate, to take account of objections or suggestions received, and an explanation must be given in the second Circular Letter, which will also promulgate the final version.*

## Action required of HSSC

20. HSSC is requested to:

**agree** the overall framework for the development, consultation and approval procedures described in this proposal

**agree** the list at Annex D of existing and anticipated IHO publications that will be considered as Standards

**agree** that the approval process for the extensive and ongoing revision of S-4 remains unchanged until the current revision task is completed (estimated to complete in 2012)

**recommend** to MS the proposed amendments to IHO Resolution 2/2007 as set out in Annexes B and C.

## **Existing IHO Resolution 2/2007 (formerly A1.21) – (introduced via CL106/07)**

### 2/2007 PRINCIPLES AND PROCEDURES FOR MAKING CHANGES TO IHO TECHNICAL STANDARDS AND SPECIFICATIONS

#### **History**

These principles and procedures are derived from those agreed at the 18th meeting of CHRIS in Cairns, Australia 26-29 September 2006. The latter superseded those developed at the 13th meeting of CHRIS in Athens, September 2001 and revised at the 15th meeting of CHRIS in Monaco in June 2003.

#### **Scope**

These principles and procedures are intended to be applied to all proposals for changes to IHO technical standards and specifications and for new work items that will require significant resources to resolve or will potentially impact on those who need to apply the standards and specifications.

These procedures are not intended to be applied to minor or technical issues that arise from the work of HSSC and its subordinate bodies, or for the correction of identified problems or for clarification of elements of the standards themselves.

Any reference to “standards” in these principles and procedures also includes specifications and guidelines as appropriate.

#### **Principles**

Improvements to technical standards can only occur by change. However, significant change can lead to problems such as incompatibility between systems, high updating costs, market monopoly, dissatisfied users, or increased risks to safety of navigation. These guiding principles have been developed to avoid these circumstances.

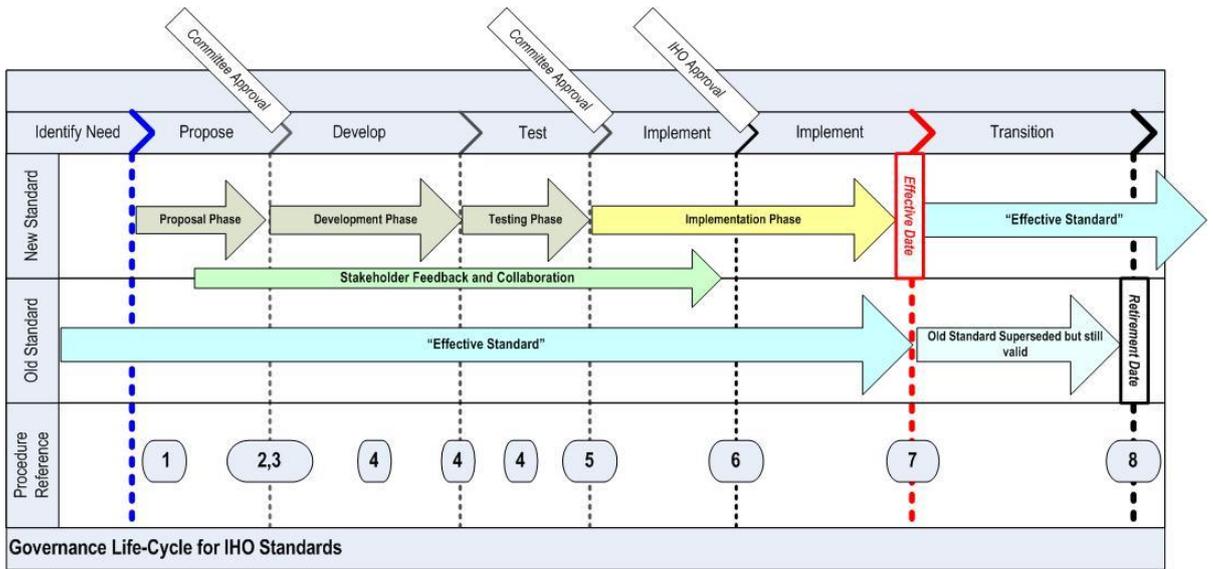
1. Before approval is granted, any proposed changes to existing standards should be assessed from a technical and commercial perspective, also taking into account any other relevant factors.
2. Where possible, assessment should involve all relevant parties such as international organisations, maritime administrations, equipment manufacturers, data distributors, users and other professional organisations.
3. As far as practicable, any change to standards or systems should be "backwards compatible", or the existing version must be supported for a specified time.
4. If changes are required for the basis of product enhancement rather than for safety of navigation, then the previously approved system must be allowed to continue to be used at sea for a sufficient time to allow changes to be implemented on board.
5. If not already specified by external or higher IHO authority, the timeline for making changes should be defined.
6. In exceptional cases (for example, those affecting safety of navigation), it may be necessary to make recommendations for immediate change to standards and systems to the relevant authorities. This may be achieved through shortening the normal time frames for submission and consideration of proposals.
7. The principles of a recognised project management system should be followed.
8. All interested parties should be encouraged to continuously improve IHO technical standards. Constructive feedback should therefore be provided for all rejected proposals.

#### **Procedures**

These procedures are recommended to ensure that any proposed changes are properly assessed and implemented. These procedures should remain simple to encourage their use.

The life cycle of a typical standard is illustrated in Annex A.

1. The HSSC will consider proposals at its meetings.
  - The HSSC will consider the impact on relevant stakeholders in assessing the proposal and planning any subsequent work. Relevant stakeholders may include representation from international organisations, maritime administrations, non governmental international organisations, equipment manufacturers, data distributors and other users of the standard.
  - If rejected, feedback will be provided to the proposal originator giving the reasons for rejection.
2. After endorsing proposals, and establishing a work priority, the HSSC will forward proposals to the IHB for necessary action including incorporation into the relevant IHO work programs.
3. Relevant stakeholders should be notified by the IHB of the timetable for new work items and be invited to comment and participate as appropriate. The notification should include a summary forecast of:
  - the potential changes,
  - the documents affected,
  - the likely action list for relevant stakeholders,
  - the timetable for implementation, and
  - the proposed effective date of the new or revised standard.
4. The HSSC should provide progress reports on a regular basis and after each milestone during the development and testing phases. These should be made available to stakeholders by the IHB.
5. At the end of the development and testing phases the HSSC will review the standard. If endorsed, a "*change note*" should be forwarded to relevant stakeholders. The "*change note*" will provide:
  - a summary of changes,
  - the documents affected,
  - a recommended action list ,
  - the timetable for implementation, and
  - the proposed effective date of the new or revised standard.
6. Following an adequate period for comment on the "*change note*", and incorporation of any relevant feedback, the revised standards should be submitted to Member States by the IHB for approval of the content, and confirmation of the "*effective date*".
7. At the "*effective date*", the revised standard becomes the effective standard. The "*superseded*" standard will usually remain available concurrently with the revised standard for a suitable transition period.
8. A "*superseded*" standard may be "*retired*" as an available standard when it is no longer appropriate for use, subject to Member State approval.



## Proposed Amendment to IHO Resolution 2/2007 (formerly A1.21)

(deletions are shown in ~~strike through~~; additions are shown in red typescript)

### PRINCIPLES AND PROCEDURES FOR MAKING CHANGES TO IHO TECHNICAL STANDARDS AND SPECIFICATIONS

#### History

~~These principles and procedures are derived from those agreed at the 18th meeting of CHRIS in Cairns, Australia 26-29 September 2006. The latter superseded those developed at the 13th meeting of CHRIS in Athens, September 2001 and revised at the 15th meeting of CHRIS in Monaco in June 2003.~~

#### 1. Scope

1.1 ~~These principles and procedures are intended to be applied to all proposals for changes to IHO technical standards and specifications and for new work items that will require significant resources to resolve or will potentially impact on those who need to apply the standards and specifications. They are not intended for IHO publications, catalogues or supporting documentation of a~~ **guidance**, general or non-technical nature.

~~These procedures are not intended to be applied to minor or technical issues that arise from the work of HSSC, or for the correction of identified problems or for clarification of elements of the standards themselves.~~

1.2 Any reference to "standards" in these principles and procedures **follows the ISO/IEC definitions for standard and guide and may therefore also** includes **some IHO "specifications" and "guidelines" as appropriate.**<sup>1</sup> **IHO product specifications are considered to be standards.**

#### 2. Principles

2.1 Improvements to technical standards can only occur by change. However, significant change can lead to problems such as incompatibility between systems, high updating costs, market monopoly, dissatisfied users, or increased risks to safety of navigation. These **following** guiding principles have been developed to avoid these circumstances.

2.1.1. Before approval is granted, any proposed changes to existing standards should be assessed from a technical and commercial perspective, also taking into account any other relevant factors.

2.1.2. Where possible, assessment should involve **not only IHO Member States but** all relevant parties such as international organisations, maritime administrations, equipment manufacturers, data distributors, users and other professional organisations. **These are the stakeholders.**

2.1.3. As far as practicable, any change to standards or systems should be "backwards compatible", or the existing version must be supported for a specified time.

2.1.4. If changes are required for the basis of product enhancement rather than for safety of navigation, then the previously approved system must be allowed to continue to be used at sea for a sufficient time to allow changes to be implemented on board.

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<sup>1</sup> ISO/IEC Directives, Part 2 - *Rules for the Structure and Drafting of International Standards* defines a standard as

*... a document, established by consensus and approved by a recognized body, that provides for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context.*

The ISO defines a guide as

*... a document giving orientation, advice or recommendations on non normative matters relating to international standardization.*

2.1.5. If not already specified by an external or higher IHO authority, the timeline for making changes should be defined, where appropriate.

2.1.6. In exceptional cases (for example, those affecting safety of navigation), it may be necessary to make recommendations for immediate change to standards and systems to the relevant authorities. This may be achieved through shortening the normal time frames for submission and consideration of proposals.

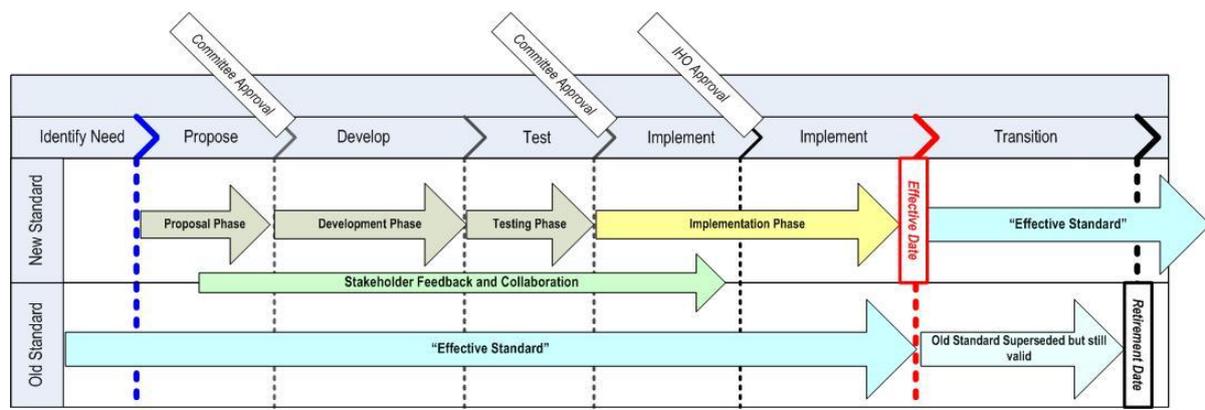
2.1.7. The principles of a recognised project management system should be followed.

2.1.8. All interested parties should be encouraged to continuously improve IHO technical standards. Constructive feedback should therefore be provided for all rejected proposals.

### 3. Procedures - General

3.1 Standardised procedures are recommended help to ensure that any proposed changes to IHO standards are properly assessed and implemented. These procedures should remain simple to encourage their use.

3.2 The following diagram illustrates the typical life cycle of an IHO typical standard is illustrated in Annex A.:



3.2.1 Changes to IHO standards are classified at one of three different levels: *new edition*, *revision*, or *clarification* (see paragraph. 5.1). In each case, the development, consultation and approval process will be slightly different; ranging from a very comprehensive regime for *new editions*, to Working Group level approval for *clarifications*. *New editions* and *revisions* are considered to be “significant changes” for the purposes of review, consultation and approval.

3.2.2 The HSSC should consider all proposals to develop *new editions* and *revisions* to standards before work begins.

- The HSSC ~~will~~ **should** consider the impact on relevant stakeholders ~~in~~ **when** assessing a proposal and planning any subsequent work. Relevant stakeholders may include representation from international organisations, maritime administrations, non governmental international organisations, equipment manufacturers, data distributors and other users of the standard.

- If rejected, feedback ~~will~~ **should** be provided to the proposal originator giving the reasons for rejection.

3.2.3 After ~~the HSSC has endorsed~~ **the HSSC has endorsed** proposals, and ~~established~~ **established** a work priority, the HSSC ~~IHB will~~ **will** forward proposals to the IHB for necessary action including incorporation ~~tasks~~ **tasks** into the relevant IHO work programs.

3.2.4 Relevant stakeholders should be notified by the IHB of the timetable for new work items and be invited to comment and participate as appropriate. The notification should include a summary forecast of:

- the potential changes,
- the documents affected,
- the likely action list for relevant stakeholders,

- the timetable for implementation, and
- the proposed effective date of the new or revised standard.

3.2.5 The IHB should maintain an on-line register of IHO stakeholders. The register should be used to inform and seek input from stakeholders concerning any proposed changes to IHO standards.

4.3.2.6 The HSSC-relevant Working Groups should provide HSSC with progress reports on a regular basis and after each milestone during the development and testing phases. These should be made available to stakeholders by the IHB.

5.3.2.7 At the end of successful completion of the development and testing phases for new standards and proposed changes to existing standards, the HSSC will should review the standard work done in terms of its impact on relevant stakeholders and whether the appropriate non-IHO stakeholder consultation process has been achieved. If endorsed, a "change note" should be forwarded to relevant stakeholders. The "change note" will provide:

- a summary of changes,
- the documents affected,
- a recommended action list,
- the timetable for implementation, and
- the proposed effective date of the new standard, or revised.

6.3.2.8 After endorsement by the HSSC, Following an adequate period for comment on the "change note", and incorporation of any relevant feedback, the new or changed revised standard should be submitted to Member States by the IHB for approval of the content, and confirmation of the "effective date".

7.3.2.9 At the "effective date", the new or changed revised standard becomes the effective standard. The A "superseded" standard will should normally usually remain available concurrently with the revised standard for a suitable transition period.

8.3.2.10 A "superseded" standard may be "retired" as an available standard when it is no longer appropriate for use, subject to Member State approval.

3.2.11 HSSC Working Groups may assess and authorise clarifications to standards and associated references, subject to seeking input from relevant stakeholders.

## 4. Urgent Amendments

4.1 The introduction of amendments to existing standards and specifications is intentionally a thorough process, in order to allow for appropriate levels of development, testing and consultation. However, there may be instances where more urgent action is required, especially where there are serious implications to safety of navigation. In such cases, a "fast-track" approval and implementation process may be needed. This should only occur in exceptional circumstances and in consultation with Member States. Any such fast-tracked amendments still require the approval of Member States before they can enter into force.

## 5. Procedures - Specific

### 5.1 New Editions, Revisions and Clarifications

**New Edition** *New Editions* of standards and product specifications introduce significant changes to a standard or a dependent product specification. *New Editions* enable new concepts, such as the ability to support new functions or applications, or the introduction of new constructs or data types, to be introduced. *New Editions* are likely to have a significant impact on either existing users or future users of the revised standard or specification. It follows that a full consultative process that provides an opportunity for input from as many stakeholders as possible is required. Proposed changes to a standard should be evaluated and tested wherever practicable. The approval of Member States is required before any *New Edition* of a standard or a product specification can

enter into force. All cumulative *clarifications* and *revisions* must be included with the release of an approved *New Edition* of a standard or product specification.

**Revision** *Revisions* are defined as substantive semantic changes to a standard or a dependent product specification. Typically, revisions change existing specifications to correct factual errors; introduce necessary changes that have become evident as a result of practical experience or changing circumstances; or add new specifications within an existing section. A *revision* shall not be classified as a *clarification*. *Revisions* could have an impact on either existing users or future users of a revised standard or product specification. It follows that a full consultative process that provides an opportunity for input from as many stakeholders as possible is required. Proposed changes to a standard should be evaluated and tested wherever practicable. The approval of Member States is required before any *revisions* to a standard or a product specification can enter into force. All cumulative *clarifications* must be included with the release of approved corrections revisions.

A *revision* shall not be classified as a *clarification* in order to by-pass the appropriate consultation processes.

**Clarification** Clarifications are non-substantive changes to a standard or a dependent product specification. Typically, clarifications: remove ambiguity; correct grammatical and spelling errors; amend or update cross references; insert improved graphics in spelling, punctuation and grammar. A clarification must not cause any substantive semantic change to a standard or product specification. *Clarifications* are the responsibility of the relevant expert WG and may be delegated to the responsible editor.

5.2 The associated version control numbering to identify changes (***n***) to IHO standards should be as follows:

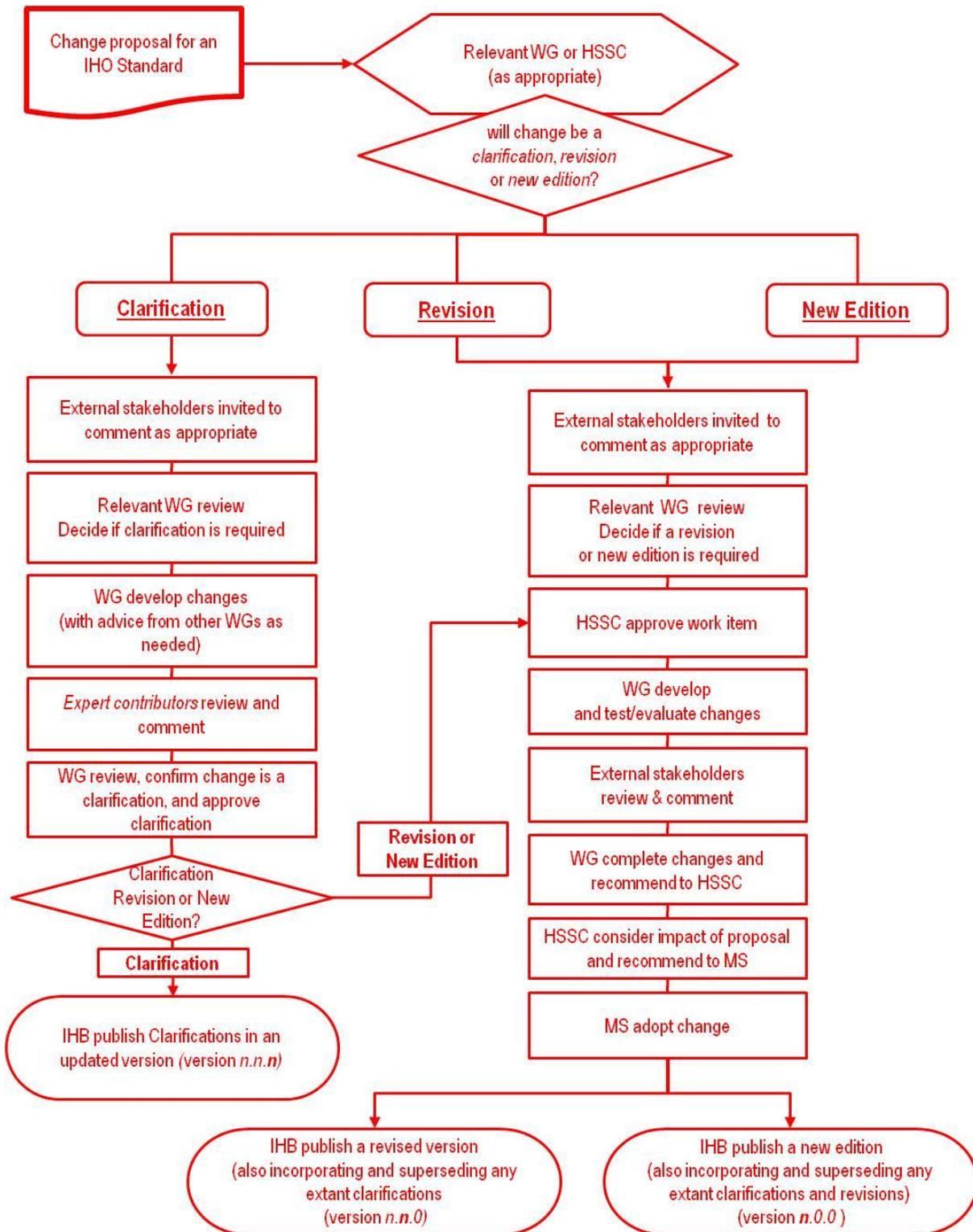
*New Editions* denoted as ***n.0.0***

*Revisions* denoted as ***n.n.0***

*Clarifications* denoted as ***n.n.n***

5.3 The following diagram illustrates the development, consultation and approval processes for IHO standards:

Diagram - Changes to IHO Standards and Specifications – General Case



## Proposed Amendment to IHO Resolution 2/2007 (formerly, A1.21)

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#### PRINCIPLES AND PROCEDURES FOR MAKING CHANGES TO IHO TECHNICAL STANDARDS AND SPECIFICATIONS

##### 1. Scope

1.1 These principles and procedures are intended to be applied to all proposals for changes to IHO technical standards and for new work items that will require significant resources to resolve or will potentially impact on those who need to apply the standards. They are not intended for IHO publications, catalogues or supporting documentation of a guidance, general or non-technical nature.

1.2 Any reference to "standards" in these principles and procedures follows the ISO/IEC definitions for *standard* and *guide* and may therefore also include some IHO "specifications" and "guidelines" as appropriate.<sup>2</sup> IHO product specifications are considered to be standards.

##### 2. Principles

2.1 Improvements to technical standards can only occur by change. However, significant change can lead to problems such as incompatibility between systems, high updating costs, market monopoly, dissatisfied users, or increased risks to safety of navigation. These following guiding principles have been developed to avoid these circumstances.

2.1.1. Before approval is granted, any proposed changes to existing standards should be assessed from a technical and commercial perspective, also taking into account any other relevant factors.

2.1.2. Where possible, assessment should involve not only IHO Member States but all relevant parties such as international organisations, maritime administrations, equipment manufacturers, data distributors, users and other professional organisations. These are the *stakeholders*.

2.1.3. As far as practicable, any change to standards or systems should be "backwards compatible", or the existing version must be supported for a specified time.

2.1.4. If changes are required for the basis of product enhancement rather than for safety of navigation, then the previously approved system must be allowed to continue to be used at sea for a sufficient time to allow changes to be implemented on board.

2.1.5. If not already specified by an external or higher IHO authority, the timeline for making changes should be defined, where appropriate.

2.1.6. In exceptional cases (for example, those affecting safety of navigation), it may be necessary to make recommendations for immediate change to standards and systems to the relevant authorities. This may be achieved through shortening the normal time frames for submission and consideration of proposals.

2.1.7. The principles of a recognised project management system should be followed.

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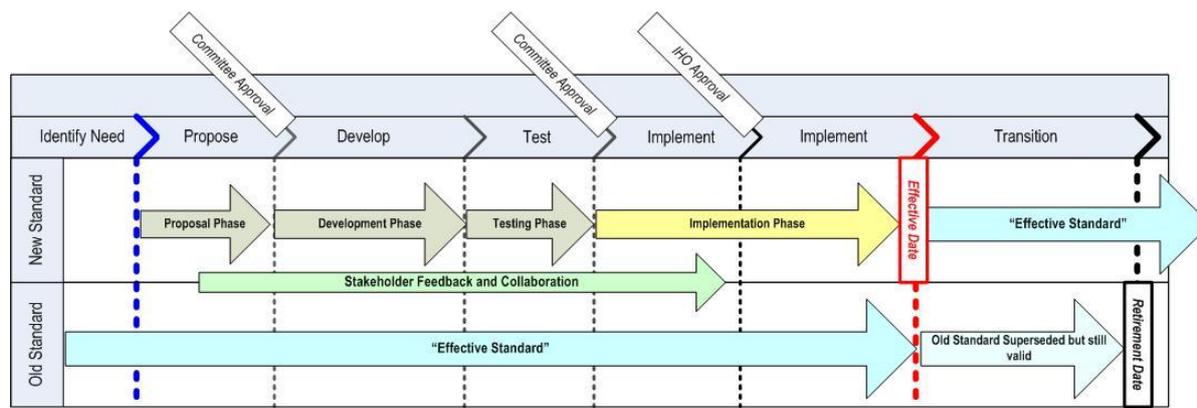
... a document giving orientation, advice or recommendations on non normative matters relating to international standardization.

2.1.8. All interested parties should be encouraged to continuously improve IHO technical standards. Constructive feedback should therefore be provided for all rejected proposals.

### 3. Procedures - General

3.1 Standardised procedures help to ensure that any proposed changes to IHO standards are properly assessed and implemented. These procedures should remain simple to encourage their use.

3.2 The following diagram illustrates the typical life cycle of an IHO:



3.2.1 Changes to IHO standards are classified at one of three different levels: *new edition*, *revision*, or *clarification* (see paragraph 5.1). In each case, the development, consultation and approval process will be slightly different; ranging from a very comprehensive regime for *new editions*, to Working Group level approval for *clarifications*. *New editions* and *revisions* are considered to be “significant changes” for the purposes of review, consultation and approval.

3.2.2 The HSSC should consider all proposals to develop *new editions* and *revisions* to standards before work begins.

- The HSSC should consider the impact on relevant stakeholders when assessing a proposal and planning any subsequent work. Relevant stakeholders may include representation from international organisations, maritime administrations, non governmental international organisations, equipment manufacturers, data distributors and other users of the standard.

- If rejected, feedback should be provided to the proposal originator giving the reasons for rejection.

3.2.3 After the HSSC has endorsed proposals, and established a work priority, the IHB will incorporate tasks into the relevant work programs.

3.2.4 Relevant stakeholders should be notified by the IHB of the timetable for new work items and be invited to comment and participate as appropriate. The notification should include a summary forecast of:

- the potential changes,
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3.2.7 At the successful completion of the development and testing phases for new standards and proposed changes to existing standards, the HSSC should review the work done in terms of its impact on relevant stakeholders and whether the appropriate non-IHO stakeholder consultation process has been achieved.

3.2.8 After endorsement by the HSSC, the new or changed standard should be submitted to Member States by the IHB for approval of the content, and confirmation of the “*effective date*”.

3.2.9 At the “*effective date*”, the new or changed standard becomes the effective standard. A “*superseded*” standard should normally remain available concurrently with the revised standard for a suitable transition period.

3.2.10 A “*superseded*” standard may be “*retired*” as an available standard when it is no longer appropriate for use, subject to Member State approval.

3.2.11 HSSC Working Groups may assess and authorise *clarifications* to standards and associated references, subject to seeking input from relevant stakeholders.

#### 4. Urgent Amendments

4.1 The introduction of amendments to existing standards and specifications is intentionally a thorough process, in order to allow for appropriate levels of development, testing and consultation. However, there may be instances where more urgent action is required, especially where there are serious implications to safety of navigation. In such cases, a “fast-track” approval and implementation process may be needed. This should only occur in exceptional circumstances and in consultation with Member States. Any such fast-tracked amendments still require the approval of Member States before they can enter into force.

#### 5. Procedures - Specific

##### 5.1 New Editions, Revisions and Clarifications

**New Edition** *New Editions* of standards and product specifications introduce significant changes to a standard or a dependent product specification. *New Editions* enable new concepts, such as the ability to support new functions or applications, or the introduction of new constructs or data types, to be introduced. *New Editions* are likely to have a significant impact on either existing users or future users of the revised standard or specification. It follows that a full consultative process that provides an opportunity for input from as many stakeholders as possible is required. Proposed changes to a standard should be evaluated and tested wherever practicable. The approval of Member States is required before any *New Edition* of a standard or a product specification can enter into force. All cumulative *clarifications* and *revisions* must be included with the release of an approved *New Edition* of a standard or product specification.

**Revision** *Revisions* are defined as substantive semantic changes to a standard or a dependent product specification. Typically, revisions change existing specifications to correct factual errors; introduce necessary changes that have become evident as a result of practical experience or changing circumstances; or add new specifications within an existing section. A *revision* shall not be classified as a clarification. *Revisions* could have an impact on either existing users or future users of a revised standard or product specification. It follows that a full consultative process that provides an opportunity for input from as many stakeholders as possible is required. Proposed changes to a standard should be evaluated and tested wherever practicable. The approval of Member States is required before any *revisions* to a standard or a product specification can enter into force. All cumulative *clarifications* must be included with the release of approved corrections revisions.

A *revision* shall not be classified as a *clarification* in order to by-pass the appropriate consultation processes.

**Clarification** Clarifications are non-substantive changes to a standard or a dependent product specification. Typically, clarifications: remove ambiguity; correct grammatical and spelling errors; amend or update cross references; insert improved graphics in spelling, punctuation and grammar. A clarification must not cause any substantive semantic change to a standard or product

specification. *Clarifications* are the responsibility of the relevant expert WG and may be delegated to the responsible editor.

5.2 The associated version control numbering to identify changes (***n***) to IHO standards should be as follows:

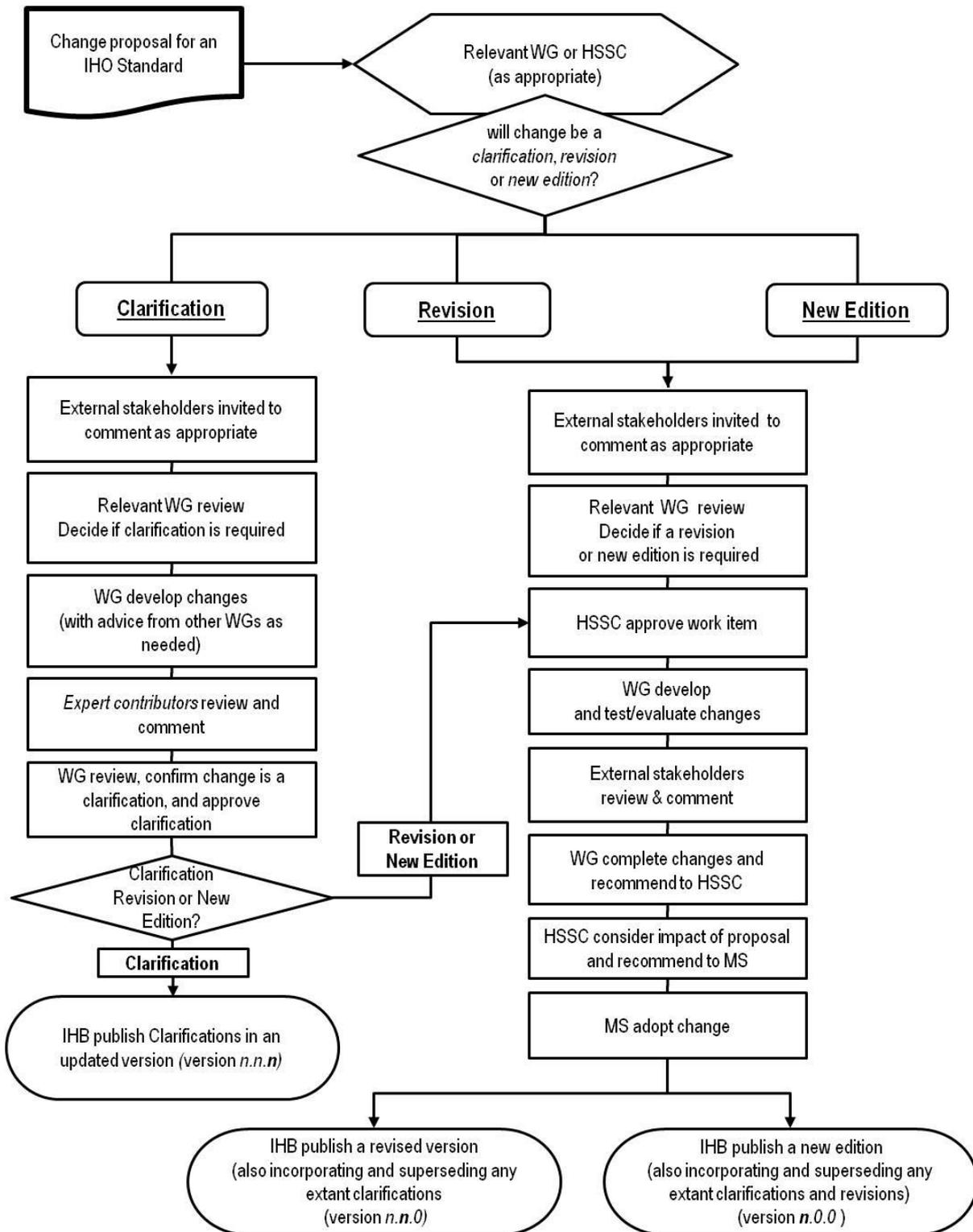
*New Editions* denoted as ***n***.0.0

*Revisions* denoted as n.***n***.0

*Clarifications* denoted as n.n.***n***

5.3 The following diagram illustrates the development, consultation and approval processes for IHO standards:

Diagram - Changes to IHO Standards and Specifications – General Case



**Classification of IHO Technical Standards**  
(according to ISO/IEC definitions)

	<b>IHO Standards</b>	Relevant maintenance body
	<i>... a document, established by consensus and approved by a recognized body, that provides for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context</i>	
<b>S-4</b>	Regulations of the IHO for International (INT) Charts and Chart Specifications of the IHO (including INT 1, INT 2, INT 3)	CSPCWG
<b>S-11 Part A</b>	Guidance for the Preparation and Maintenance of INT Chart schemes	CSPCWG
<b>S-12</b>	Standardization of List of Lights and Fog Signals	WG when/if required
<b>S-32</b>	Hydrographic Dictionary	HDWG
<b>S-44</b>	IHO Standards for Hydrographic Surveys	S44 WG when required
<b>S-49</b>	Standardization of Mariners' Routeing Guides	CSPCWG
<b>S-52</b>	Specifications for Chart Content and Display Aspects of ECDIS	DIPWG
<b>S-57</b>	IHO Transfer Standard for Digital Hydrographic Data	TSMAD
<b>S-57 Appendix B1</b>	ENC Product Specification	TSMAD
<b>S-58</b>	Recommended ENC Validation Checks	TSMAD
<b>S-61</b>	Product Specifications for Raster Navigational Charts (RNC)	WG when/if required
<b>S-62</b>	ENC Producer Codes	IHB
<b>S-63</b>	IHO Data Protection Scheme	DPSWG
<b>S-64</b>	Test Data Sets for ECDIS	TSMAD, DPSWG, DIPWG
<b>S-99</b> (when adopted)	Operational Procedures for the Organization and Management of the IHO Geospatial Information Registry	TSMAD
<b>S-10n</b> (when adopted)	S-100 based Product Specifications	WG when/if required

	<b>IHO Framework Models and Guides</b>	
	<i>... a document giving orientation, advice or recommendations on non normative matters relating to international standardization</i>	
<b>S-23</b>	Limits of Seas and Oceans	S-23 WG
<b>S-60</b>	Users Handbook on Datum Transformations involving WGS 84	WG when/if required
<b>S-65</b>	ENC Production Guidance	TSMAD
<b>S-100</b>	IHO Universal Hydrographic Data Model	TSMAD