



9<sup>th</sup> Meeting of the IHO Inter-Regional Coordination Committee (IRCC9)

Paramaribo, Suriname, 12-14 June 2017

**Draft New Edition 1.0.0 of the IHO Publication S-8A *Standards of Competence for Category "A" Nautical Cartographers***

<b>Submitted by:</b>	IBSC Chair
<b>Related Documents:</b>	<ul style="list-style-type: none"> <li>a) CL 6/2017</li> <li>b) IRCC9-07H1</li> <li>c) IRCC9-07H3</li> <li>d) IHO Resolution 2/2007</li> </ul>
<b>Related Projects:</b>	Task 3.3.9 of the IHO 2013-2017 Work Programme

**Background:**

1. The FIG/IHO/ICA International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC) developed a draft New Edition 1.0.0 of the IHO Publication S-8A *Standards of Competence for Category "A" Nautical Cartographers*, in accordance with task 3.3.9 of the IHO 2013-2017 Work Programme.

**New standards development:**

2. The development of the new set of Standards of Competence was done mainly intersessionally complemented by working group meetings as reported in *doc. IRCC9-07H1*. In accordance with the IHO Resolution 2/2007, the IBSC organized stakeholders' seminars in conjunction with other events in order to get comments and feedback from the broad hydrographic community in order to assure the new draft S-8A is fit for purpose.

3. The first draft S-8A was made available in the IHO website under *Draft Publications for discussion* and the IHO Circular Letter 6/2017 *Call for comments on draft new edition 1.0.0 of IHO Publication S-8A Standards of Competence for Category "A" Nautical Cartographers* sought feedback from IHO Member States and Stakeholders.

4. Comments arising from Circular Letter 6/2017 were reviewed by the Board during IBSC40 (New Zealand, 20-31 March 2017). The comments and the Board responses are available in the Annex.

5. The revised draft New Edition 1.0.0 of S-8A took into consideration the comments received and the feedback received from institutions holding recognized programmes is now available under *Draft Publications for discussion* at:

[www.iho.int](http://www.iho.int) → Standards & Publications → Download

6. The Board seeks the endorsement of the IRCC to the draft New Edition 1.0.0 of the IHO Publication S-8A *Standards of Competence for Category "A" Nautical Cartographers* and subject to this endorsement, requests the approval of the IHO Member States, in accordance with the Assembly Decision 15.

**Actions Required of IRCC:**

7. IRCC is invited to:
- a) **Note** the report;
  - b) **Endorse** the draft New Edition 1.0.0 of the IHO Publication S-8A *Standards of Competence for Category "A" Nautical Cartographers*;
  - c) **Request** the IHO Secretariat to seek approval of the IHO Member States of the IHO Publication S-8A *Standards of Competence for Category "A" Nautical Cartographers*;
  - d) **Take** any other actions as appropriate.

**MEMBER STATES' RESPONSES TO IHO CL 6/2017 AND COMMENTS FROM THE  
FIG/IHO/ICA INTERNATIONAL BOARD ON STANDARDS OF COMPETENCE FOR  
HYDROGRAPHIC SURVEYORS AND NAUTICAL CARTOGRAPHERS (IBSC)**

**CALL FOR COMMENTS ON DRAFT NEW EDITION 1.0.0 OF IHO PUBLICATION S-8A  
STANDARDS OF COMPETENCE FOR CATEGORY "A" NAUTICAL CARTOGRAPHERS**

Note: responses from the IBSC are given along the text in *italics*

**AUSTRALIA**

It is not clear if an individual must have attained the Category "B" certification first, and if so the Category "B" content should be copied in its entirety or removed with a reference to it and then the additional competencies added/highlighted.

*IBSC Comment: The two levels of competence are self-contained and stand-alone, independent of each other. It is not required for an individual to first undertake a Category B program. Category "A" programmes introduce the competences from the underlying principles level. Category "B" programmes introduce the competences from a practical level appropriately underpinned by the relevant theoretical content. A Category B programme will not necessarily meet Category A requirements for the same content.*

- It would be nice if the Category "B" and Category "A" columns could be formatted the same for uniformity

*IBSC Comment: agreed and fixed.*

- A for advanced is missing from Page 5 list of Acronyms

*IBSC Comment: agreed and amended.*

- We would like HTML added to programming languages in B3.2

*IBSC Comment: HTML was included in B3.2 (now C3.11) in the current draft.*

- We would like an additional topic related to raster formats in particular GeoTIFF looking at internal structures and differences between projected and deprojected formats

*IBSC Comment: noted, covered in E7.6 (now C4.6) and GeoTIFF to be removed from the acronym list*

- In Australia our cartographers deal with deconfliction of bathy sources, at this level we would expect to see "deconfliction of complex and diverse bathymetric sources"

*IBSC Comment: noted, already included in E4.2 (now C2.2)*

- A practical topic on traditional Paper Chart Navigation and how paper charts are used for planning, route monitoring etc.

*IBSC Comment: noted, already covered in E3.1 (now F2.1) and E7.1b (now C4.1c)*

- A practical topic on ECDIS and how ENCs are used for planning, monitoring, alarm setting etc.

*IBSC Comment: noted, covered in E7.5a (now C4.5a) and should be part of the teaching strategy.*

- A practical topic on vessel types and characteristics – sizes, manoeuvrability, etc.

*IBSC Comment: noted, not considered part of the minimum standards*

- In E7.2 a practical topic on INT to GIS tool

*IBSC Comment: noted, not considered part of the minimum standards*

- Product metadata management should be included, how to version control products, what metadata is important, catalogues, index charts etc.

*IBSC Comment: noted, considered covered in E4.8 and E4.9 (now C2.8 and C2.9)*

- Reporting and statistics – use of Key Performance Indicators, ability to prioritise and for what purposes, definition of "safety critical" information

*IBSC Comment: noted, considered covered in E4.9 (now C2.9)*

- Some discussion around establishing teams and roles – worker, reviewer etc.; Regional teams, paper vs ENC teams etc.

*IBSC Comment: noted, considered covered in E4.9 (now C2.9)*

In Australia our high schools and tertiary education covers the mathematics components required for Nautical Cartographers and now days our computer software also makes this manual skill obsolete.

*IBSC Comment: noted, assessment of eligibility of individuals to enter a programme will depend on local circumstances.*

## **BELGIUM**

The only remark that we have is that the IHO logo has to be adjusted to the new one.

*IBSC Comment: noted and agreed*

## **BRAZIL**

DHN would like to congratulate IBSC for the effort on publishing the first draft edition 1.0.0 of S-8A- Standards of Competence for Category "A" Nautical Cartographers and adds that there are no objections to the first draft edition.

*IBSC Comment: the IBSC thanks Brazil for the support*

## **CROATIA**

Croatia appreciates efforts of the IBSC in preparation of the first edition of IHO Publication S-8A. We generally support the structure and contents of the draft standard. In our opinion, the choice and scope of subjects and topics of subjects, and thus the requirements for the development of educational/training programmes are appropriate to Category "A" level of competence for Nautical Cartographers.

*IBSC Comment: the IBSC thanks Croatia for the support*

We especially appreciate that the IBSC has recognized the need to include the subject E8 "Legal Aspects (Relating to Nautical Cartography)". In this respect, we consider that introducing the topic E8.2

"Intellectual property and copyright" is particularly important. The presented elaboration of the topic E8.2 shows that the topic has been sufficiently covered to suit Category "A" programme for Nautical Cartographers.

However, taking into account our longstanding experience in day-to-day dealing with very complex work of hydrographic data licensing, we believe that it may be necessary to consider the development of a separate standard of competence for educational/training programmes for this kind of work.

Such standard could define, among other things, the requirements of educational/training programme for staff of national hydrographic offices for competences in managing bilateral agreements and licensing of hydrographic data, supervision of contract / agreement implementation, analysis of royalty reports, settlement of disputes, and issues relating to unauthorized use of data.

The need for consideration is supported by the fact that the IHO Publication M-2 in Part 2 "Cost Recovery and the "Public Good" Nature of National Hydrographic Programmes", as a potential source of funding for hydrographic offices, specifies the income from licensing of hydrographic data for use in derived products and services that are not of themselves "public goods" in nature.

Croatia would appreciate IBSC's comments on the above mentioned comments and proposals, and be willing to help in this respect.

*IBSC Comment: the IBSC agrees that Legal Aspects ("Relating to Nautical Cartography") is an important issue however the national nature of the complex issues precludes in our view the development of an international standard. Thus it is considered outside the terms of reference of the IBSC*

## FRANCE

In reply to the letter in reference, I am pleased to send Shom comments on draft new edition 1.0.0 of IHO Publication S-8A. Remarks and suggestions for improvements are specified in the attached table. The most important points are as follows:

- Geodesy: during their activities, cartographers are asked to compile recent and legacy data. It is therefore crucial that they have a sound knowledge of not only modern geodetic systems but also of former geodetic systems;
- Hydrography: same remark as above. Cartographers should be familiar not only with the modern techniques in hydrography but also with the old ones.

### **Detailed comments from Shom on draft S--8A**

The following table lists the points of improvement which Shom wishes to integrate in the standard. SHOM is of the opinion that:

- The comments marked as "important" should result in a correction of the standard;
- The comments marked as "advisable" are suggestions of modification.

#### 1) Advisable:

E1.1 In the "learning outcomes" specify whether this relates to "geodetic lines".

*IBSC Comment: noted but no change as less ambiguous as currently written*

#### 2) Important

E1.2

During their activities, cartographers are asked to compile recent and legacy data. It is therefore crucial that they have a sound knowledge of not only modern geodetic systems but also of former geodetic systems.

Shom is recommending the following modifications:

Content

(vi) Modern *and former* geodetic datum based on terrestrial reference frames.

Learning outcomes

Define and specify modern *and former* geodetic reference systems and associated reference frames.

*IBSC Comment: noted. To make the geodetic datums more inclusive the word modern is removed.*

3) Advisable:

E1.3

Shom is recommending the following modification:

Learning outcomes

*Describe*, select and apply horizontal and vertical datum transformation methods.

*IBSC Comment: noted, agreed and changed*

4) Advisable:

E2.10

Shom is recommending the following modification:

Learning outcomes

Develop a digital and analog compilation worksheet covering a defined *complex* region and utilize it for map/chart composition and symbolization.

*IBSC Comment: noted, the term "complex" was inserted*

5) Important:

E3.4

Cartographers should be familiar not only with the modern techniques in hydrography but also with the former ones.

Shom is recommending the following modifications:

Content

(ii) Hydrographic survey operation (*former and modern methods*)

Learning outcomes

Differentiate the type and purpose of different hydrographic surveys *using former and modern methods*.

*IBSC Comment: noted, Course Content modified as suggested. The Learning Outcome is not changed as it is considered inclusive of the content.*

6) Important:

E3.5

Shom is recommending the following modifications:

Content

(iii) Relative accuracy of commonly available systems *and former systems*.

Learning outcomes

Classify different methods and systems (*former and modern*) used for positioning with respect to their accuracy.

*IBSC Comment: noted and Course Content modified as suggested. The Learning Outcome is not changed as it is considered inclusive of the content.*

7) Advisable:

E4.6

Shom is recommending the following modifications:

Content

(iii) Tidal *and current* data (selection, evaluation, depiction).

Learning outcomes

Select and depict oceanographic, *current* and tidal information on nautical and special purpose charts.

*IBSC Comment: noted and amended*

8) Advisable:

E5.5

Shom is recommending the following modification:

Learning outcomes

*Explain and perform* shoreline extraction with regards to the state of the tide at the time of imagery.

*IBSC Comment: noted and amended*

9) Advisable:

E6.4

The word "problems" in line (iii) should be detailed.

*IBSC Comment: noted and typo corrected*

10) Advisable:

E6.8

It is not required to list methods in line (i).

*IBSC Comment: noted. List retained and "e.g." inserted*

11) Advisable:

E7.4a

Shom is suggesting the following modifications:

Learning outcomes

*Describe* common commercial systems and their functionality.

*IBSC Comment: noted and amended*

12) Advisable:

E8.3

Shom is suggesting the following modification:

Learning outcomes

Specify and analyze the types of lines and areas defined under UNCLOS and their delimitation and apply them on charts. *Explain the methods to calculate those limits.*

*IBSC Comment: noted but the IBSC does not consider necessary to add the expression*

13) Advisable:

E9.1c

Shom is suggesting the following modification:

## Learning outcomes

Describe specific requirements *and apply guidelines* for the charting of dredging surveys.

*IBSC Comment: noted and amended*

**ITALY**

Having read the draft text of S-8A edition 1.0.0, Italy presents the following comments/suggestions:

1. add in B3.4 column "Learning outcomes " the following sentence: "Interpret (or understand) numerical ocean model results and dissemination products";

*IBSC Comment: noted but not considered required for minimum Basic level*

2. there is no mention of the GEBCO project and of GEBCO products and of the relevant correlation to IHO standards such as S-23 for sea and ocean limits and B-6 for undersea features.

*IBSC Comment: noted and amended in C2.2*

**NETHERLANDS**

The Netherlands has no comments on the main document S-8A, but wishes to request the IBSC to give due consideration to conclusions 6 and 7 in document IRCC8/07H5 when the Guidelines companion document will be updated (as stated in Paragraph 6 of the CL). In particular, the use of the word "recommend"/"recommendation" should be considered for Paragraph 3.2.

*IBSC Comment: noted in the context of the Guidelines document that will be updated and published separately. After careful deliberation, Paragraph 3.2 of the updated Guidelines is sufficient to convey the Board's expectations for minimum programme duration without the use of the word "recommend"/"recommendation".*

**ROMANIA**

I would like to inform you that we have studied the new proposals of specifications on *Guidelines for the Implementation of the Standards of Competence for Hydrographic Surveyors and Nautical Cartographers, Second Edition, Version 2.0.0 – Month 2017* and agree with your suggestions.

*IBSC Comment: the IBSC thanks Romania for the support*