



FIG/IHO/ICA INTERNATIONAL BOARD ON STANDARDS OF COMPETENCE FOR HYDROGRAPHIC SURVEYORS AND NAUTICAL CARTOGRAPHERS

Lisbon (Portugal)
15-25 April 2013

FINAL REPORT OF THE 36th MEETING

1. Venue and attendance

The 36th meeting of the FIG/IHO/ICA International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers was held in Lisbon, Portugal from 15 to 25 April 2013 at the Hydrographic Institute, hosted by the Portuguese Navy.

The following were present:

FIG: Mr. Adam Greenland (AG)
Mr. Gordon Johnston (GJ)
Prof. Razali Mahmud (RM) – Vice Chair 2
Prof. Keith Miller (KM)

IHO: Capt Andrew Armstrong (AA)
Prof. Delf Egge (DE) – Vice Chair 1
Prof. Nicolas Seube (NS)

ICA: Mr. Ron Furness (RF)
Prof. Lysandros Tsoulos (LT) – Chair

Apologies: RAdm K. N. Nair (KN) (IHO)

Secretary: Mr. Alberto Costa Neves (AN) (IHB)

2. Opening of the meeting

RAdm Antonio da Silva Ribeiro, Director-General of the Hydrographic Institute, Portuguese Navy, welcome the Board members and wished a productive meeting. He stressed the importance of the Board's work. He assigned Capt. Paulo Ramalho Marreiros as the liaison Officer. The Chair of the IBSC responded by thanking the hosts for the organization of the meeting and highlighted the Portuguese contribution to the development of Navigation, Cartography and Hydrography. IHO Director Mustafa Iptes representing the IHO Directing Committee reaffirmed the support of the DC to the IBSC and acknowledged its important work.

3. Adoption of the agenda and administrative tasks

The Board discussed the agenda and approved revision 4 of the Agenda.

4. Report of the Chairman

a) The Chair reported on his meeting (December 2012) with the IHB Directing Committee and elaborated on the process suggested by the DC for the financial support approved by the XVIII International Hydrographic Conference for the Standards revision. He also referred to the request from the DC to follow a procedure in consultation with stakeholders in order to comply with IHO Resolution 2/2007.

According to the process agreed with the DC:

- A White Paper on the standards was circulated by the IHB to the stakeholders in February asking for comments. The paper was based on the presentations made by AA on this subject in conferences.

- The chair will make a presentation on the development of the new standards at the next IRCC5 meeting in Sydney and the responses of the stakeholders, seeking approval by the IRCC (Item 5 of this report refers to the responses of the stakeholders).
- If everything goes according to the plan, the IHB will release the funds already approved by the International Hydrographic Conference. This will enable the Board members to afford the expenses associated with the extra meetings required etc.

b) The Chair identified “distance learning” as missing from the Standards and invited the Board to address this issue during the meeting in order to incorporate the relevant requirements in the Standards. NS will present a working paper during the meeting.

c) The structure of the standards is also an important part of the new version. KM will address this issue when the specific item will be discussed.

d) The annual assessment report: the Board decided that a letter be sent to institutions offering recognized programmes annually, reminding them to submit their annual assessment reports according to paragraph 3.2.4 of the Standards.

e) Onsite review: the Board reviewed the documents generated in 2012 for the onsite review. The process for the Portuguese review was discussed and agreed. The Board discussed the pros and cons of combining the onsite review with a Board meeting and decided that given the heavy work load associated with the review of the submissions; this should be a separate mechanism. This will be further discussed later in the agenda.

5. Feedback for CL 14/2013 (Revision of the Standards)

The Board has recognized the need for the Standards to continue to evolve in order to meet contemporary and future requirements. The Board believes that a fundamental change to the structure of the Standards is now required. A proposed new structure will have separate Standards for Category A and for Category B programmes, both in S-5 and in S-8. The need for this was recognized by the XVIIIth International Hydrographic Conference that noted the Report of the IBSC Chair and approved Task 3.3.9 in the 2013-2017 IHO Work Programme.

3.3.9 “IBSC to develop a new Standards framework to separate competency requirements for Cat A and Cat B Hydrographers and Nautical Cartographers by developing two discrete parts in the standards S-5 and S-8 and update their content to comply with the scientific and technological developments in the fields of Hydrography and Nautical Cartography”.

In line with the IHO policy concerning the revision of established technical standards the Board recognizes the benefit of feedback and contributions from the broad range of stakeholders in order to ensure that any revision of the existing standards take into account the requirements and expectations of the stakeholders.

In order to promote discussion and obtain feedback on the nature of the next round of changes being proposed by the IBSC, its Chair has provided a White Paper entitled “*Towards New Standards of Competence for Hydrographers and Nautical Cartographers*”. The paper explains the principal reasons for the review of the S-5 and S-8 Standards and the underlying thinking. The White Paper is available from the IHO website in the IBSC web page: www.iho.int/IBSC > IBSC36 > Doc. IBSC36-03.

In addition to the content of the White Paper the Board in its 36th meeting decided on the adoption of a modified version of the “constructive alignment” approach in order to include both the syllabi and the expected competences/learning outcomes for each category programme and profession.

Through CL 14/2013, IHB invited Member States and other stakeholder organizations to review the proposals set out in the IBSC White Paper and to provide comments and suggestions, if any, to the IHB before the end of March 2013. This enabled the IBSC to consider feedback at the 36th meeting in Lisbon.

AN presented the replies from eight Member States (Chile, France, Finland, India, Mexico, New Zealand, Spain, UK) and two external stakeholders (International Federation of Hydrographic Societies and one lecturer from Plymouth University) to the Board as follows:

Summary of responses:

- Broad support to the proposal and the rationale for restructuring the Standards as described in the White Paper.
- IHO Resolution 2/2007 needs to be accounted for in the process of revising the standards
- Safety of navigation must be the cornerstone of the Standards. The development of courses “à la carte” should be avoided, meaning that the Options (S-5) and Specialisms (S-8) should not substitute the core parts of the Standards.
- Suggestion to consider using Hydrographic (Cartographic) Engineer and Hydrographic (Cartographic) Technician instead of Cat A and Cat B, in order to align with other professions.
- Some Member States consider Cat A as a natural evolution of a Cat B and thus the process of separation has to consider this dependency. Others presented a view to the contrary suggesting that there should be a differentiation between Cat A and Cat B developments given that the intellectual skills are different.
- Need to clarify how to progress from Cat B to Cat A or if it is a prerequisite to do a Cat B before a Cat A.
- Support for using modular and blended learning.
- Concerns expressed that the new version will result to lengthy courses comparable to those leading to Master of Sciences (MSc) degree.
- Suggestion for a more detailed analysis of the roles of the Cat A and Cat B Hydrographers and Nautical cartographers.
- Stakeholders pointed out the growth of the market and the need for experienced hydrographers (mainly Cat A).

The Board will take into account these responses when developing the new versions of the Standards and will follow a consultative process with the stakeholders that will provide an opportunity for input in accordance with IHO Publication M-3.

MI stated that the IHB will provide the feedback to MS and stakeholders about the CL14 outcomes. He invited the IBSC to provide an analysis of the feedback through its report to the IRCC5.

6. Review of Programmes Submitted- Extension requests

The Board reviewed sixteen (16) new submissions and re-submissions, considered requests for extension of recognition and decided on pending recognitions from its 35th meeting. The number of programmes under review has been the highest ever - average number of submissions in previous years is nine (9). This is considered as an indication of the interest of the international hydrographic community in establishing educational/training programmes in Hydrography and Nautical Cartography and the reputation of the IBSC. The list of programmes reviewed appears as Annex I to this report.

7. Onsite review – Hydrographic Institute of Portugal (Cat B)

Capt. Marreiros (IHP) presented the Institute and the CATB programme. The Board members paid the review visit to the institute and expressed their satisfaction on the way the programme is delivered.

8. Election of Chair and Vice-Chair

The Board discussed the election of Chair and Vice-Chair. Prof. Delf Egge requested not to be the Chair due to personal reasons. He nominated Prof. Nicolas Seube to be the Chair in the IHO turn. The Board unanimously elected Prof. Seube as the new Chair.

The Board acknowledged the significant contribution of Prof. Tsoulos to the work of Board throughout the last three years. Prof. Razali was unanimously elected as the Vice-Chair 1, according to the RoP. Mr. Ron Furness was also unanimously elected as Vice-Chair 2.

The new Chair and the two Vice-Chairs will take office on 1st October 2013.

9. Onsite visit programme

The Board discussed the rationale for the onsite visits. The need to separate the onsite visits and the ordinary meetings of the Board was also discussed. The fact that the Board now has sufficient funds to support the onsite visits was pointed out.

Criteria for the onsite visits:

- a) The Board has concern on the way a programme is delivered
- b) Institutions requesting assistance for the development of a programme for future submission
- c) Two onsite visits per year (in average)
- d) Development of three year plan (to be reviewed in every meeting)

Onsite review visits program until April 2014:

- 1) Peru and Ecuador combined: AA and KM
- 2) UK: GJ, DE, NS

10. Preparatory work for the new Standards - Set-up specific guidelines for the New S-5 & S-8 Standards

The Board discussed the need to review the Standards in light of the IHO Resolution 2/2007. According to the resolution, the following content will be part of the new edition and the revision. Some clarifications to the text will also be done.

- a) New edition:
 - Separation of the Standards into discrete parts
 - Provision for Modular organization of programmes
 - Blended learning
 - Synchronous and asynchronous modules
 - Interaction process
 - Evaluation process
- b) Revision:
 - Onsite review
 - Field work description (appendix 2): AG, AA, GJ (Working Group 3)
 - Specific software
 - Objectives and other updates
 - Blended learning (discussion on NS's working paper): NS, KM, RF (Working Group 2)
 - Time frames: DE, RM, LT, AN (Working Group 1)
 - Time frame over which a programme is delivered
 - Minimum duration of a programme
 - Rationale
 - Time frame for the recognition
- c) Clarifications:
 - Typos
 - Duplications

One possible structure to be considered is similar to the S-100. One general publication for the introduction, operational procedures and common components, and separate publications for each of the four programmes and categories:

S-200: Hydrographic Surveyor and Nautical Cartographer Programmes Recognition Process

S-201: Hydrographic Surveyor Category A Programmes

S-202: Hydrographic Surveyor Category B Programmes

S-203: Nautical Cartographer Category A Programmes

S-204: Nautical Cartographer Category B Programmes

11. Meetings intervals

The Board discussed the meetings interval and the duration. It was decided that the meetings interval should be a year. The duration will be flexible and dependent on the number and the nature of submissions. In general a one week meeting per year is foreseen.

12. Templates and guidelines

The Board discussed the need to establish Guidelines and Templates to help the submissions. The decision is that it is necessary to develop guidelines, templates, flowcharts, recommendations and investigate other possible tools to help the submitting organizations. It was agreed that the following actions will be taken:

- Action (AG, RF, AN): to develop a draft document on Guidelines to Submissions and report to the Board (before IBSC37)
- Action (NS, AA): investigate the possibility of developing a digital tool to help the submitting institutions in their submissions and report back to the Board (before IBSC37)

13. Ethics

According to the ToR, the Board is *“composed of members: of known competence in the civil, governmental or educational sectors of hydrographic surveying and nautical cartography, selected to provide as wide as possible a spectrum of knowledge and experience in educational practices, hydrography and nautical cartography”*.

The Board decided to draft a Code of Conduct for the IBSC that will be part of the RoP as follows:

Code of Conduct for the FIG-IHO-ICA International Board on Standards of Competence (IBSC)

All IBSC Board members and Secretary commit to the highest ethical and professional conduct and agree:

- To accept responsibility in developing Standards of Competence consistent with the best practices of hydrographic surveying and nautical cartography;
- To accept responsibility in making recognition decisions consistent with the Standards of Competence and the advancement of the hydrographic and nautical cartographic profession;
- To act as faithful agents or trustees of the IBSC and its parent organizations, FIG, IHO, and ICA;
- To keep confidential all matters relating to recognition decisions unless required to disclose information by law or IBSC Terms of Reference or Rules of Procedure;
- To make or issue either public or internal statements only in an objective and truthful manner;
- To conduct themselves honorably, responsibly, ethically, and lawfully so as to enhance the reputation and effectiveness of the IBSC and parent organizations;
- To report concerns regarding accounting, internal accounting controls or auditing matters without fear of retaliation;
- To treat all persons involved in recognition activities with fairness and justice;
- To assist interested institutions in developing effective hydrographic and nautical cartographic education and training programs and obtaining IBSC recognition;
- To support a mechanism for the prompt and fair adjudication of alleged violations of this code.

14. Branding, promotion and outreach

The Board adopted the IBSC logo and decided to use it in the certificate, in the letterheads and the IBSC web pages, together with the parent organizations' logos. This will help to promote the IBSC work.

The outreach of the Board can be improved through the participation in conferences, industry and other events. Support to potential submissions has to be done with caution due to the overload that it may cause. The support should be triggered by the request of assistance. The approach can be to assist potential submitting organizations to organize their submissions in a way that the Board can interpret (this does not lead to a pre-recognition or commitment from the Board). The Board decided to develop a step-by-step description document and make it available in the IBSC web pages.

The Board also decided that the participation in a number of events to promote the Board's activities is important. The Board acknowledged the outreach achieved by the White Paper distributed by CL 14/2013 and the IBSC reports to IRCC4 and IHC18.

15. Recommended time frame and duration

The Board discussed the recommended time frame and duration of programmes and agreed that they are:

a) Time frame over which a programme is delivered

The time frame over which a programme is delivered should be no more than 5 years for a Category B programme and no more than 6 years for a Category A programme.

b) Minimum duration for programmes

- The minimum duration of a Category B programme should be in the order of 24 weeks (without exemptions sought). In case exemptions are sought, this period can be reduced accordingly, but not less than 16 weeks.
- For a Category A programme, the minimum duration should be one year: two semesters plus field training.

16. Structure of the New Standards

The Board discussed the structure of the new Standards and agreed on the following scheme:

Subject 3. Map Projections (example)					
Subject	T/P	Hours	Course and content	Content	Learning outcomes
3.1 general theory of Map projections	T	6	HYD200 (i), (v)	(i) Conformal and non-conformal projections; (ii) cylindrical, azimuthal and conical projections; (iii) use of Grids and graticules; (iv) distortions associated with map projections; (v) worldwide cartographic systems including UTM, GK and UPS.	Use geometrical properties of map projections to contrast and compare the use of different projections for different applications.
3.1a Distortion on Map projections	P	3	HYD200 (ii), (iii)		Use specifications associated with map projections to compute parameters associated with distortions and apply computed values.
3.4 Worldwide Cartographic Systems: UTM, GK, UPS	T	2	HYD200 (v)		Describe the specifications associated with worldwide map projection systems.

Note: submitting institutions will fill the third and the fourth column (in blue in the above table).

The Board discussed the revision of C-6 and C-47 and decided to work intersessionally to prepare a plan to review the two publications.

17. IBSC Fund

The Board agreed on the following decisions and actions (September 2013):

- a) FIG issues the invoices (GJ);
- b) FIG to change the account from Euro to USD (GJ);
- c) Secretary to provide the updated list of institutions and POC to FIG (AN);
- d) Changed RoP (IBSC Chair):
 - i. Change the account from Euro to USD
 - ii. Request identification in the deposits
 - iii. Request institutions to send copy of the deposit to the Secretary
- e) Decided to keep the current procedure of payment in six installments;

The separation of accounts in FIG was discussed. The Board agreed to leave the decision to the Finance Group whether to separate or not.

18. Visit to the Lisbon Naval Base and Azinheira Hydrographic Base

The Board visited the Lisbon Naval Base where Hidro-Oceanographic Vessels N.R.P. "Alme. Gago Coutinho" and N.R.P. "Andr meda" were birthed. The visit continued to the Azinheira Hydrographic Base, where the Hydrographic Brigade, research vessels, seabed sample warehouse and the hydrographic, topographic and oceanographic laboratories were presented.

19. Preparation for the new S-5 work: IBSC Sub-groups

The Board decided to maintain the subgroups agreed during IBSC35, to review the Standards based on the geographic distribution and content of Hydrography and Cartography:

The project plan for the development of the new Standards is as follows:

- a) Finalize S-5 Cat B by the end of the 2015 plenary meeting.
- b) Finalize S-5 Cat A by the end of the 2016 plenary meeting.
- c) Finalize S-8 Cat B and Cat A by the end of 2017 plenary meeting.
- d) Improve the general structure of the two publications.

Timetable

- a) 2 to 3 work group meetings in the second half of 2013.
- b) 2 to 3 work group meetings in the first half of 2014.
- c) 2 to 3 work group meetings in the first three months of 2014.
- d) 2 to 3 work group meetings in the last four months of 2014.

20. Venue for the 37th meeting (2014)

The next meeting will be in China from 7 to 13 April 2014. Alternative dates to be discussed with China: 31 March to 5 April and 28 April to 4 May.

According to a personal communication of the Secretary, Brazil considers hosting the 2015 meeting.

21. Closure of the meeting

The Chair closed the meeting on 25 April 2013 at 15h45.

Annex I to the report of the FIG/IHO/ICA IBSC to IRCC5

N	Institution	Country	Cat	H/C	Op/Sp	Title of Programme	Status	Decision
1	Bangladesh Navy	Bangladesh	A	H		Basic Hydrographic Course	NEW	Not recognized
2	Bangladesh Navy	Bangladesh	B	H		Basic Hydrographic Course	2005	Not recognized - Granted one year extension
3	Antwerp Maritime Academy	Belgium	B	H		Postgraduate programme Hydrography	NEW	Recognized
4	National Institute of Hydrography	India	A	H	1	Long Hydrographic Course	2006	Conditional recognition
5	National Institute of Hydrography	India	B	H	1,6	Basic Hydrographic Course	2006	Conditional recognition
6	Naval Hydro-oceanographic School	Indonesia	B	H	1,2	Category B Hydrographic Surveyor Education Program	2006	Not recognized
7	Hydro Geo School	Iran	B	H	1,2,4	Hydrography Survey Course	NEW	Not recognized
8	Japanese Coast Guard School.	Japan	B	H	1	Ocean Science Course	2007	Recognized
9	University Teknologi Malaysia	Malaysia	B	H	2,7	Course in Hydrography (HYDRO I)	2007	Recognized
10	King Abdul-Aziz University	Saudi Arabia	A	H	1,2,3,5,7	Hydrography Surveying	NEW	Conditional recognition
11	STET Maritime Pte Ltd	Singapore	B	H	1,2	Hydrographic Surveying Course	NEW	Recognized
12	Spanish Hydrographic Institute	Spain	A	H	1,6	Specialization Course in Hydrography and Oceanography for Naval Officers	2005	Recognized
13	Spanish Hydrographic Institute	Spain	B	H	1,6	Specialization Course in Hydrography and Oceanography for Naval Petty Officers	2007	Recognized
14	Royal Navy Flag Officer Sea Training	UK	B	H	6	HM2 Course	2003	Recognized
15	University of Plymouth –	UK	A	H		Postgraduate Diploma Advanced Hydrography for Professionals	NEW	Not recognized

	The Hydrographic Academy							
16	University of Plymouth - The Hydrographic Academy	UK	B	H		Diploma of Higher Education Hydrography for Professionals	NEW	Not recognized
17	Maritiem Instituut Willem Barentsz	Netherlands	B	H	2,4,7	Programme in Hydrography	2007	Granted one year extension
18	United Kingdom Hydrographic Office (UKHO)	UK	B	C		Hydrographic Data Processing and Marine Cartography Programme	2005	Granted one year extension
19	Naval Academy of Colombia	Colombia	A	H	1	Hydrographic Surveyors Programme	2001	Recognition withdrawn
20	General Commission for Survey (GCS)	Saudi Arabia	B	H	1,2	Hydrographic Surveying Programme	2012	Recognized
21	General Commission for Survey (GCS)	Saudi Arabia	B	C	2	Nautical Cartography	2012	Recognized
22	Tunisian Hydrographic Office	Tunisia	B	H	1	Patent Superior Technician in Hydrography	2007	Additional information is required