



The role of the IBSC, Standards of Competence, IBSC 2013-2017 Work-program

Nicolas Seube

FIG/IHO/ICA International Board for Standards of
Competence (IBSC) for Nautical Hydrographers
and Cartographers



Objectives of this seminar

- Inform and get feedback from the stakeholders about the on-going work of the Board
 - S-5 and S-8 revision (session 1);
 - Development of category A and category B separate standards (session 2);
 - New delivery methods and capacity building (session 4) .
- Give examples of the standards in the work place (session 3)

Discussion panels outcomes should include

1. Feedbacks from MS and course coordinators;
2. a list of actions.



The International Board for Standards of Competences

- 10 members (4 FIG, 4 IHO and 2 ICA), from governmental, educational and civil sector;
- Experienced and volunteers professionals in education, hydrography and cartography, from various areas of the world (Australia, France, Caribbeans, Germany, Greece, India, Malaysia, New-Zealand, UK, USA)





The role of the Board

- **Review** syllabi of programmes and individual recognition schemes from education and training organizations (50 recognized programs, 18-20 submissions in dec. 2013);
- **Maintain IBSC publications**
- **Provide guidance** to education and training institutions;
- **Supports the IHB** for the establishment of new hydrographic programs where regional training capacity does not exist.





Some observations



Stakeholders needs and employers expectation

- Most of the job opportunities comes from the industry ;
- The hydrographic and cartographic communities need :
 - more personnel (source : IFHS, Industry, HS) ;
 - specialised qualifications.
- There is a demand for modular type of learning (CB, industry):
 - Life long learning ;
 - hydrographic personnel cannot be removed from their working environment for too long periods .



The Standards need to reflect an up to date set of requirements and widely accepted competences, as well **offering a basis for further professional development.**

Content

Theory,
background

Tutorials

Fieldwork



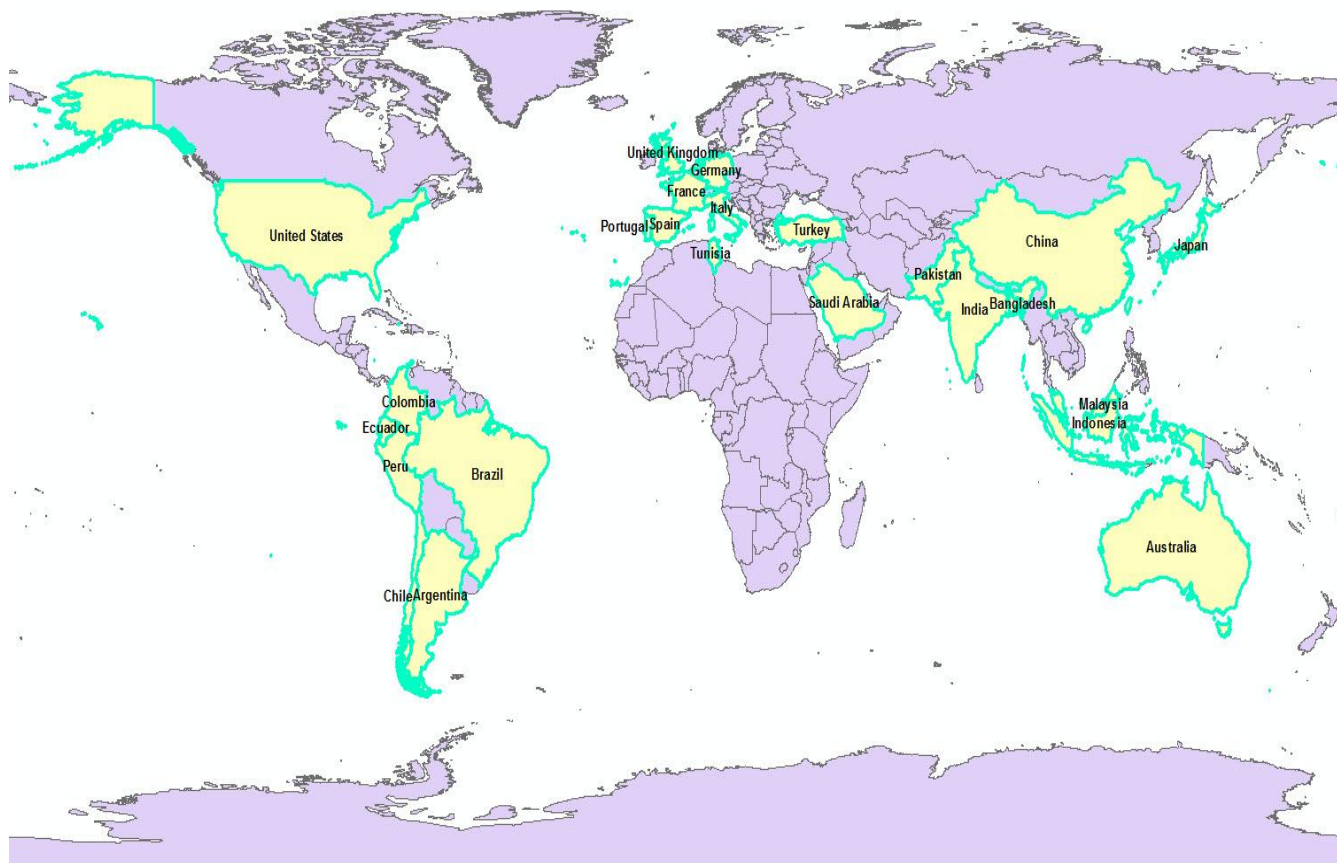
Delivery

Academia

HOs

Industry

The Standards must **maintain the balance for students expectations and employers needs** whilst allowing for the new e-learning experience





S-5 and S-8 revisions



2014: S-5 **11.1.0** and S-8 **3.1.0** revision

- Provision for e-learning component as part of the submission;
- Annual report, and comprehensive internal assessment every 3-5 years;
- IBSC on-site program review process and content (internal review documents, on-site visits, outcomes);
- Guidelines for practical exercises and field training.
- Minimum Time frames:
 - Cat B: 24 weeks, and 16 weeks with exemptions
 - Cat A: 12 months + field training



STANDARDS OF COMPETENCE for Hydrographic Surveyors

Publication S-5
Eleventh Edition
Version 11.0.1 – May 2011

Guidance and Syllabus for Educational and Training Programmes

Published by:
The International Hydrographic Bureau
4, quai Antoine 1er
B.P. 445
Monaco, MC 98011 Cedex
MONACO
<info@ihb.mc>
<www.ihb.int>

Comments arising from the experience gained in the application of the guidance and syllabus are welcome. They should be addressed to the Chairman of the International Board at the above address. This document is published periodically. Please check with IHB for the latest edition, including current amendments.
Please consult the companion IHO publication C-6 "Reference Texts for Training in Hydrography", available from the IHB.



3.2.1. Information about the programme infrastructure

f) Facilities available to students:

- Equipment: Provide a list of relevant equipment/systems
- Software: List specific software (with emphasis on hydrographic and cartographic software packages)
- List of training aids (including any e-learning components and associated platforms for their delivery)

g) Programme structure:

- d. The total number of lecture hours, supervised practical exercise hours, unsupervised practical exercise hours (individual or team project hours) and private study time expected from an average student for each module;
- e. Where distance and e-learning components are used the expected supervised/unsupervised student total working time for each component, e-lecture schedule, tests, exercises, and the way the student self-study time is monitored.



3.2.2. Information about each module (course) in the programme

- a. The programme being submitted should be described in more detail than the S-5 Syllabus (Section 6), with a tabulation of **tutored hours** devoted to S-5 Syllabus subjects. In the tabulation, a distinction should be made between lecture hours, guided exercise hours, **e-learning components**, and – if significant amounts of learning are expected to:
 - occur outside scheduled class hours: the estimated out-of-class hours
 - **be delivered by distance or e-learning: the estimated number of tutor-student interaction hours.**
- b. Representative examination papers, assignment specification, any online assessment component and details covering all subject areas from the previous two years, which are taken by students during the programme (i.e. not only the final examination), showing the marking scheme and pass marks should be submitted. For new programmes a sample set of prospective examinations and assessment specifications should be **provided including those for e-learning components and the validation steps associated with student progression.**



3.2.4 Internal assessment

Institutions are required to have in place an internal review process and to submit an annual report to the IBSC Secretariat. Any change to a recognized programme must be included. A suggested template is offered at Appendix IV - Annual Report. The Board may, from time to time, at its discretion, seek further details of the internal review of any programme.

It is recommended that any programme of study will also undergo a comprehensive internal review every 3-5 years, to address any issues that may arise and to update course content.



The on-site Visit

During the on-site visit the review team will undertake the following activities in accordance with a schedule that is agreed in advance with the hosting institution:

Meet current students, faculty members, administrators, and staff, Meet former students and employers

Visit classrooms, labs, survey vessels and other key facilities, Provide oral feedback to the institution

3.3.3. Report and Outcomes

Recommendations made by the Review Team will be considered by the Board with possible outcomes as follows:

- Programme is satisfactory
- There is a need for minor modifications that can be rectified internally by the hosting institution
- The findings of the review team refer to major issues requiring significant changes to the documentation and/or practices as detailed in the report. Modifications are to be implemented within an agreed timeframe indicated by the Board and documentary evidence of the modifications will be required
- The findings of the Review Team refer to major issues and therefore a new submission is required at a time to be agreed with the Board.



2.7 Recommended time frame and duration

Time frame over which a programme is delivered

The time frame over which a programme is delivered cannot be more than five (5) years for a Category B Programme and no more than six (6) years for a Category A Programme.

Minimum duration for programmes

The minimum duration of a Category B Programme should be in the order of twenty four (24) weeks (without exemptions sought). In case exemptions are sought, this period can be reduced accordingly, but no less than sixteen (16) weeks.

For a Category A Programme, the minimum duration should be one (1) year: two full semesters plus field training.



Synthesis of responses to IHO CL 11/2014

- 18 member states responded ;
- Large majority of approval;
- Some MSs consider Category B as a pre-requisite for Category A. *IBSC do not.*
- In cases where a Category A programme is preceded immediately prior by a Category B programme then time frames for the Category A program may take into account the time devoted to the Category B program : No objection from the Board.
- Time frame *without exemption* = time frame *including basics* subjects
- Remarks on the S-5 syllabus: overtaken by new S-5B in preparation.
- Minor corrections (typos, wording): will be incorporated before publications



The IBSC workprogram (2013-2017)



The IBSC workprogram (2013-2017)

“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 ;**
- **updating their content to comply with the scientific and technological developments in the fields of Hydrography and Nautical Cartography.”**



Rationale for Category A and Category B separation (1)

Category A:

- Project leader : design, plan, choose appropriate technology, select and supervise a survey team
- Should be familiar with underlying physics and mathematics of survey or cartographic works

Category B:

- Watchleader : reports to a project leader
- Should be familiar with fundamentals and practicals aspects of hydrographic surveying and/or cartographic works



Rationale for Category A and Category B separation (2)

For both Categories, the ability:

- to conduct or operate hydrographic surveys in the field;
- to utilise hydrographic/cartographic databases to compile and produce charts,

remain fundamental competencies, and thus are important parts of education and training through **practicals** (field exercises and/or projects).



Synthesis of answers to IBSC white paper on new standards developments, following IHO CL 14/2013

- Technical, legal and economic aspects should be considered, as well as the compliance with IHO resolution 2/2007 ;
- Safety of navigation needs to be kept as the cornerstone and other usage of the sea to be built around. Options should not be fully integrated to the core essentials (would then require longer course duration);
- Support to use e-learning and modular type of delivery;
- Some MSs consider cat B as a pre-requisite for cat A, other have a opposite view, that cat B and cat A development should be done independently;
- Some MSs would like cat A and cat B linked to academic degrees (BSc, MSc);
- Improve the description of the role of cat A and cat B personnels.



New category B standards

Integration of multi-platform (vessels, underwater vehicles, airborne, satellite) and multi-sensors surveys. Data management to access, store, maintain and distribute extremely large data sets.

- Same S-5 Essential Subjects (Bathymetry, Water levels and flow, Positioning, Hydrographic practice, Hydrographic data management, Environmental Science, Law of the Sea) ;
- More emphasis on learning outcomes ;
- Options to be revisited, some options contents may be moved to « essential » subjects ;
- Basics to be defined accordingly to new essentials contents.



New Category A standards

- Standards essentials will be modified in three blocks of subjects:
 - Surveying specific subjects
 - Hydrography specific subjects
 - Data processing and management subjects
- Options (to be defined)
- Complex multidisciplinary project including hydrographic practice



New Category A and Category B standards development plan

- Standards for hydrographers : S-5A, S-5B
- Standards for Nautical cartographers: S-8A, S-8B
- S-6 will detail the submission process , guidelines, and required documentation

Milestones:

1. Standards for Category B hydrographers : will apply for the 2016 meeting;
2. Standards for Category A hydrographers : will apply for the 2017 meeting;
3. Standards for category A and B nautical cartographers: will apply for the 2018 meeting.