

New Standards of Competence for Hydrographic Surveyors and Nautical Cartographers

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FIG/IHO/ICA International Board on Standards of Competence

Stakeholder Workshop

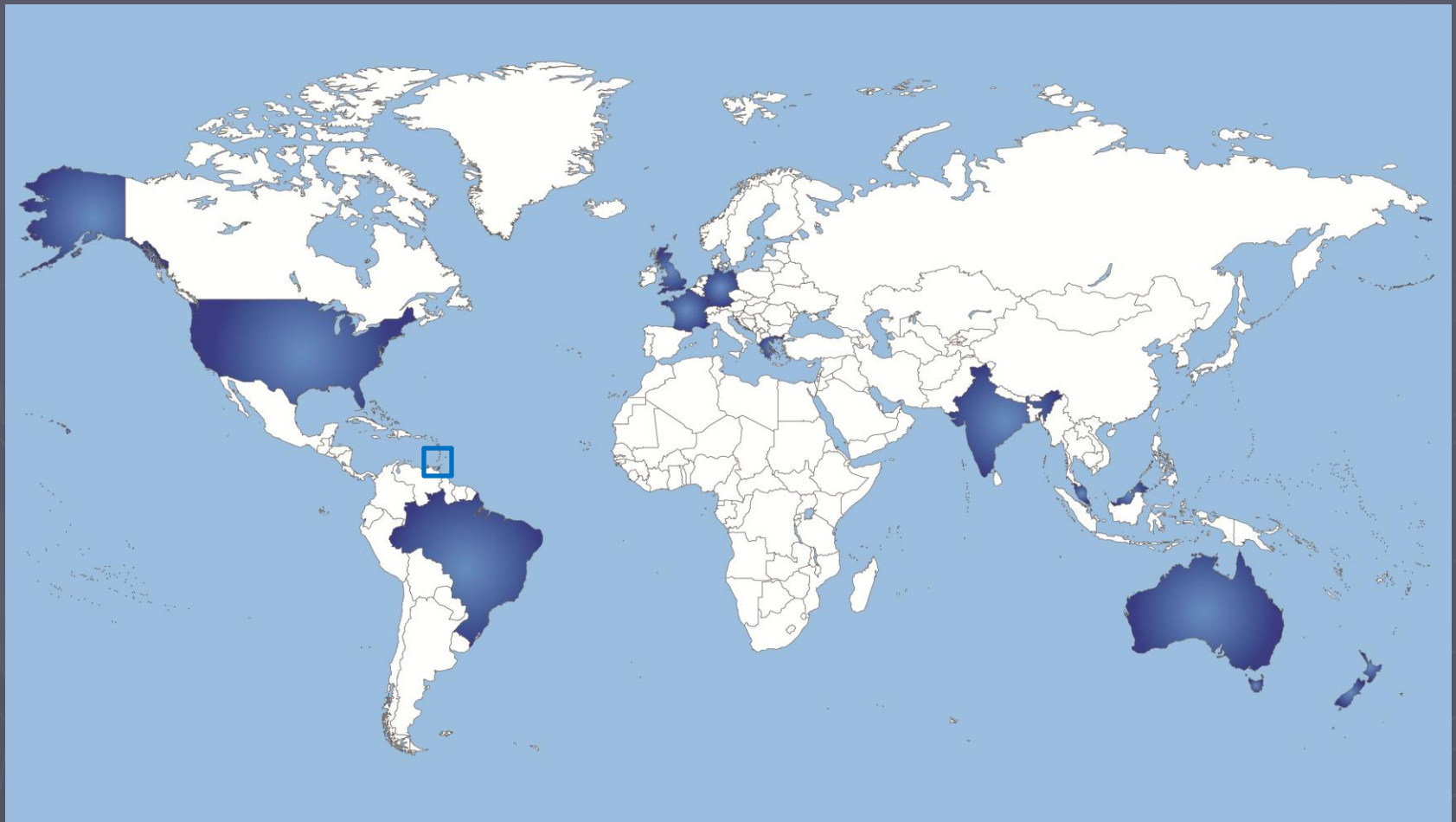
Monaco, 7 March 2014

IBSC Membership

► Individuals

- From civil, governmental, and educational sectors
 - With wide spectrum of knowledge and experience in education, hydrography, and nautical cartography
 - From different geographical areas
- 4 from IHO, 4 from FIG, 2 from ICA

Members of the IBSC



Duties

- ▶ Establish standards of competence
- ▶ Maintain publications (especially S-5, S-8)
- ▶ Review syllabi & national schemes for individuals
- ▶ Provide advice on syllabi & schemes
- ▶ Communicate with parent organizations
- ▶ Meet annually

Standards of Competence

- ▶ Establish curriculum standards for educational programs for hydrographers and nautical cartographers
- ▶ Describe competencies that students should master in the training environment

Standards of Competence

INTERNATIONAL
FEDERATION OF
SURVEYORS



INTERNATIONAL
HYDROGRAPHIC
ORGANIZATION



INTERNATIONAL
CARTOGRAPHIC
ASSOCIATION



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.iho.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.

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STANDARDS OF COMPETENCE for NAUTICAL CARTOGRAPHERS

**S-8
Third Edition 2010**

Guidance and Syllabus for Educational and Training Programmes

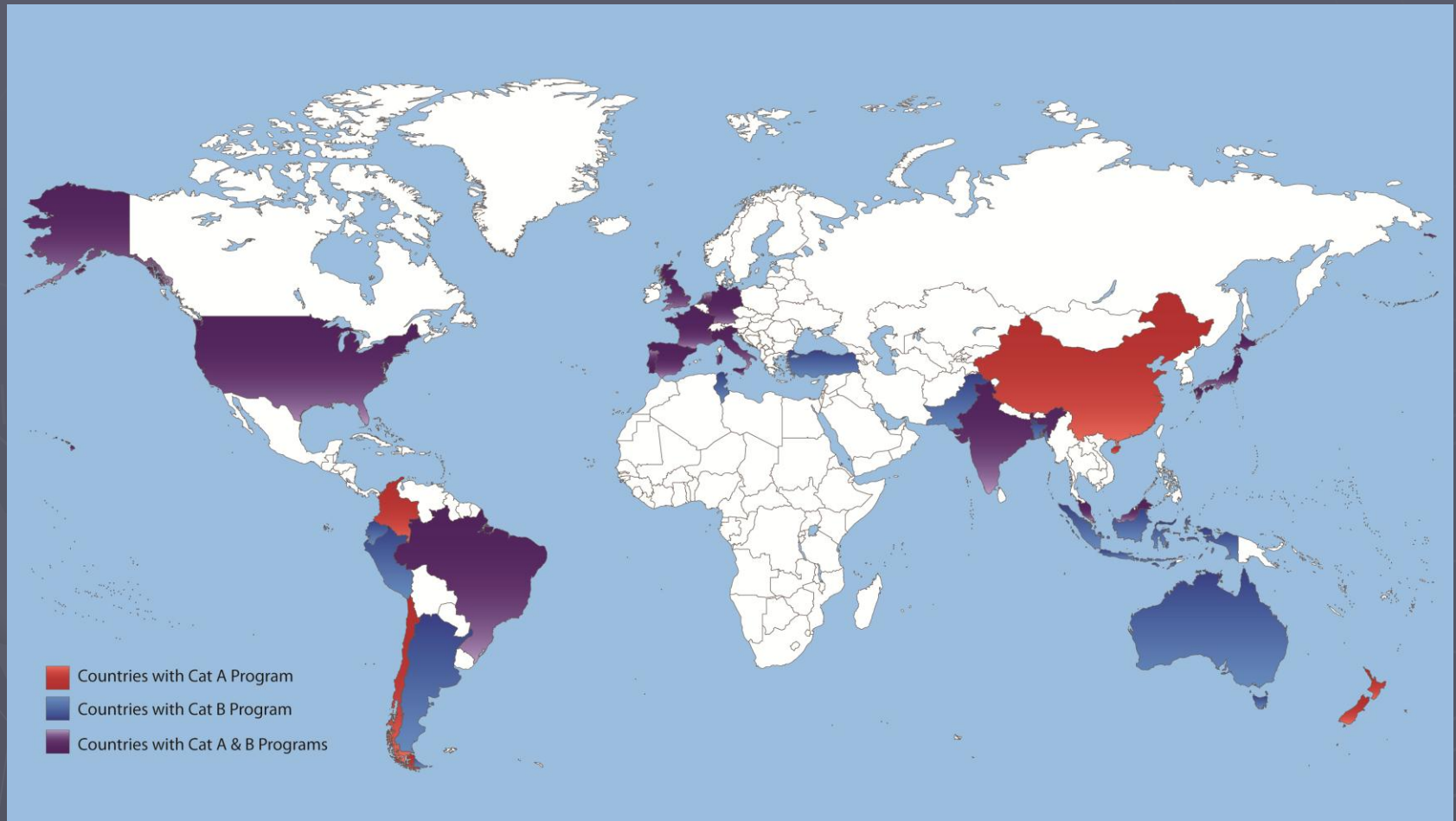
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Recognition

- ▶ The IBSC develops standards and recognizes educational and training programs at two levels
 - Category B
 - Category A
- ▶ The IBSC maintains a list of recognized programs on the IHO website

Recognized Hydrographic Programs (end of 2012)



Category B

(S-5 example)

A programme which provides a practical comprehension of hydrographic surveying for individuals with the skill to carry out the various hydrographic surveying tasks.

Example competency:

Explain the principles of various types of water level gauges and poles. Describe characteristics of river, coastal and offshore water level gauges. Install and operate water level gauges and poles.

Category A

(S-5 example)

A program which provides a comprehensive and broad-based knowledge in all aspects of the theory and practice of hydrography and allied disciplines for individuals who will practice analytical reasoning, decision making and development of solutions to non-routine problems.

Example Competency:

Evaluate and select appropriate instruments and sites for water level monitoring. Calibrate analogue and digital recording water level gauges. Evaluate sources of error. Apply appropriate corrections.

The way forward

- ▶ In view of the foreseen challenges in hydrography and nautical cartography, the Board believes that a fundamental change to the structure of the Standards is appropriate.
- ▶ The Board is in the process of developing a new structure for S-5 and S-8 that will separate the Standards for Category A and Category B programs. Standards for each category are being designed and developed independently.
- ▶ A Category A program will introduce the topics from the beginning at the underlying principles level. A Category B program will introduce the topics from a practical level.

Category A

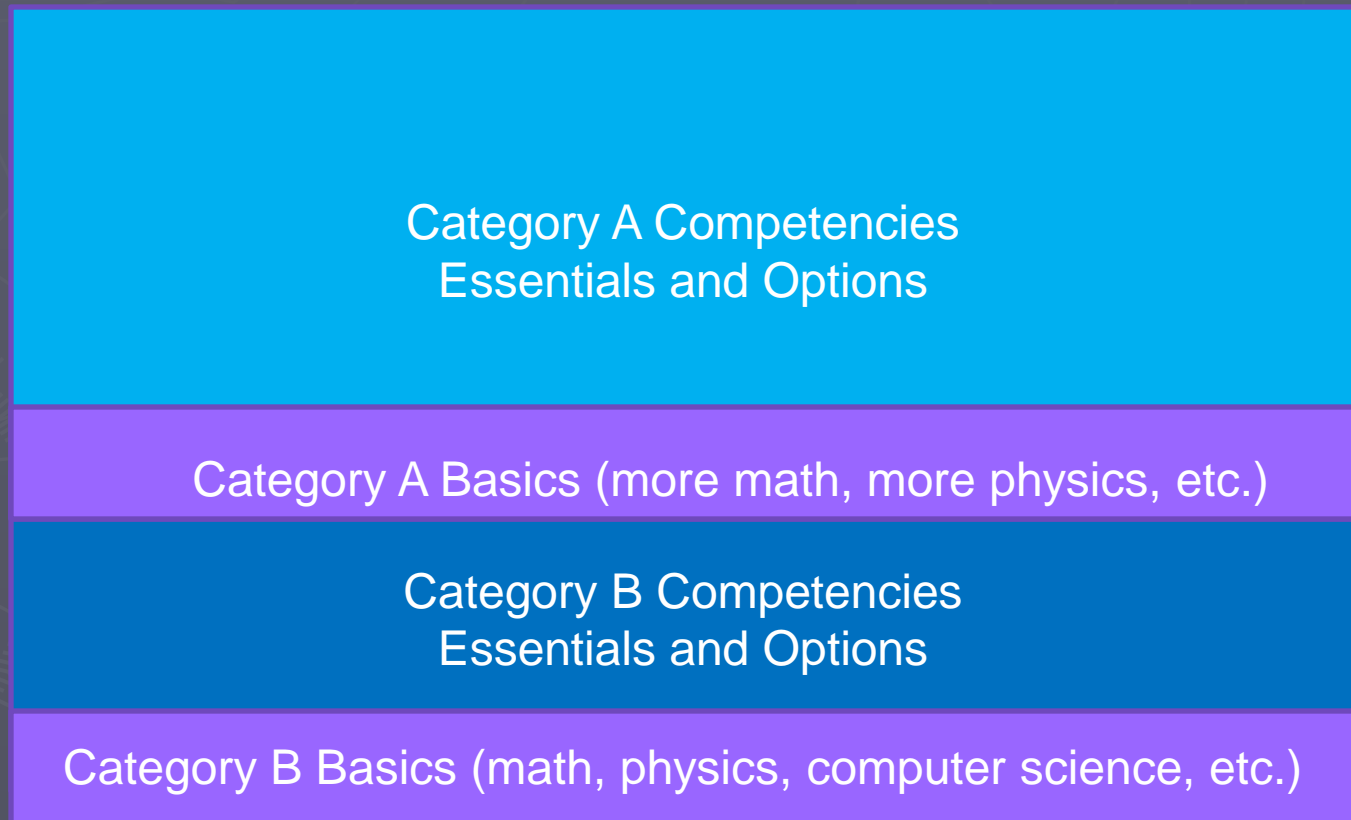
- ▶ Category A hydrographic surveyors and nautical cartographers, with appropriate experience, will be project leaders. They will design and plan the survey or the cartographic product, choosing appropriate technology, and methodologies, and will select and supervise the team completing the survey or cartographic project.
- ▶ They should have a complete understanding of the underlying theoretical and practical elements of the survey or cartographic processes employed, and should be able to evaluate results against expectations.
 - In the Navy, this would be the hydrographer in charge of a major survey unit, or a supervising nautical cartographer.
 - In industry, (or government) this would be the lead hydrographer or nautical cartographer for a major surveying or technological development project.
- ▶ Category A trained surveyors and cartographers will almost certainly have completed or will simultaneously complete a technical degree (surveying, math, physics, computer science, earth science, etc.)

Category B

- ▶ Category B hydrographic surveyors and nautical cartographers, with appropriate experience, will be watch leaders on a survey vessel or cartographic team leaders.
 - In the Navy, this might be a junior officer who is in charge of a survey launch or a senior petty officer who manages the data for a survey unit.
 - In the private sector, it might be a team leader in charge of a small survey vessel for harbour or localized surveys, or a watch leader on a large survey operation.
- ▶ Category B surveyors and cartographers will typically report to a Category A project leader.
- ▶ Category B trained surveyors/cartographers may have technical degrees, but a technical degree is not necessary. A technical diploma, business degree, or liberal arts degree should provide satisfactory preparation.

Existing Model (for many programs)

Learning Progression
↑



New Model

To be introduced 2016 - 2018

Category B

Practical Competencies and
Basic-level Theoretical
Understanding



Typical Academic
Prerequisites

Associate Degree, Technical Diploma, or
BA degree

Category A

Theoretical,
Analytical, and Practical
Competencies



Typical Academic
Prerequisites

BSc degree

Input Invited

- ▶ Category A and Category B models
- ▶ Critical competencies
- ▶ Distance learning and e-learning roles
- ▶ Importance of direct student contact
- ▶ Optional Specialties?