

INTERNATIONAL HYDROGRAPHIC ORGANIZATION



**XVIIIth
INTERNATIONAL HYDROGRAPHIC
CONFERENCE**

23 – 27 April

**2012
M O N A C O**

REPORT of PROCEEDINGS

VOLUME 2 - Rev.1

INTERNATIONAL HYDROGRAPHIC ORGANIZATION



XVIIIth INTERNATIONAL HYDROGRAPHIC CONFERENCE

Monaco, 23-27 April 2012

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VOLUME 2 - Rev.1

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VOLUME 2

TABLE OF CONTENTS – VOLUME 2
CONFERENCE DOCUMENTS

CONFERENCE DOCUMENT NUMBER	TITLE	PAGES
GENERAL INFORMATION		
CONF.18/G/03/Rev1	Tables of Tonnages, Shares and votes.....	11
WORK PROGRAMMES		
CONF.18/REP/01	Proposed IHO Work Programme 2013-2017.....	17
CONF.18/REP/02	Proposed IHO Work Programme 2013.....	73
CONF.18/WP1	Corporate Affairs for the period 2007-2011.....	87
CONF.18/WP1/Add.1	- Report on the S-23 Working Group.....	107
CONF.18/WP1/Add.2	- Report on the IHB on the implementation of the Strategic Plan.....	113
CONF.18/WP1/Add.3	- Report on the Staff Regulations Working Group.....	117
CONF.18/WP2	Hydrographic Services and Standards for the Period 2007-2011.....	121
CONF.18/WP3	Inter Regional Coordination & Support for the Period 2007-2011.....	157
CONF.18/WP3/Add.1	- IRCC Report on developing IHO Publication C-55, Status of Hydrographic Surveying and Nautical Charting Worldwide.....	240
FINANCE		
CONF.18/F/01	Preliminary Finance Report 2007-2011.....	249
CONF.18/F/02/Rev1	Proposed IHO Five-Year Budget for the period 2013-2017.....	267
CONF.18/F/03	Proposed IHO Budget for 2013.....	281
CONF.18/F/REP	Finance Committee Report.....	291
ELIGIBILITY		
CONF.18/E/REP	Eligibility Committee Report.....	297

GENERAL INFORMATION DOCUMENT

**TABLE OF TONNAGES,
AND NUMBER OF SHARES AND VOTES**

TABLE OF TONNAGES, AND NUMBER OF SHARES AND VOTES
Tableau des tonnages, et nombres de parts et voix

Member Govern./ Gouvern. Membres	Updating Source/ Source /Maj	Tonnages Lloyd's List (1)		Tonnages reported	Shares - Parts			Votes - Voix		
					Fix.	Sup.	Tot.	Fix.	Sup.	Tot.
ALGERIA - ALGERIE	CCL9 - Tonnage	789 053		785 145	2	4	6	2	2	4
ARGENTINA - ARGENTINE	CCL9 - Tonnage	608 825		1 075 769	2	5	7	2	2	4
AUSTRALIA - AUSTRALIE	CCL9 - Tonnage	1 474 473		2 126 004	2	7	9	2	3	5
BAHREIN	CCL9 - Tonnage	534 569		833 796	2	4	6	2	2	4
BANGLADESH	CCL9 - Tonnage	1 006 462		902 558	2	4	6	2	2	4
BELGIUM - BELGIQUE	CCL9 - Tonnage	4 474 280		4 350 180	2	10	12	2	3	5
BRAZIL - BRESIL	CCL9 - Tonnage	2 328 426		3 697 270	2	9	11	2	3	5
CANADA	CCL9 - Tonnage	3 134 778		4 786 774	2	11	13	2	3	5
CHILE - CHILI	CCL9 - Tonnage	810 596		772 763	2	4	6	2	2	4
CHINA - CHINE	CCL9 - Tonnage	97 402 360		97 570 000	2	25	27	2	4	6
COLOMBIE	Yearbook 2011	93 803	*	154 984	2	1	3	2	1	3
CROATIA - CROATIE	CCL9 - Tonnage	1 542 571		1 669 234	2	6	8	2	2	4
CUBA	Yearbook 2011	38 913	*	80 327	2	0	2	2	0	2
CYPRUS - CHYPRE	CCL9 - Tonnage	21 194 832		22 489 207	2	22	24	2	4	6
DENMARK - DANEMARK	CCL9 - Tonnage	12 186 663		11 744 389	2	16	18	2	4	6
D.P.R. OF KOREA - REP. DEM. DE CO	CCL9 - Tonnage	813 851		705 000	2	3	5	2	2	4
ECUADOR - EQUATEUR	Yearbook 2011	348 342	*	456 757	2	3	5	2	1	3
EGYPT - EGYPTTE	Yearbook 2011	1 255 268	*	980 510	2	4	6	2	2	4
ESTONIA - ESTONIE	CCL9 - Tonnage	378 955		455 705	2	3	5	2	1	3
FIJI - FIDJI	Yearbook 2011	42 188	*	50 317	2	0	2	2	0	2
FINLAND - FINLANDE	CCL9 - Tonnage	1 515 544		1 605 293	2	6	8	2	2	4
FRANCE	CCL9 - Tonnage	6 858 903		7 116 603	2	13	15	2	3	5
GERMANY - ALLEMAGNE	CCL9 - Tonnage	15 907 817		15 871 882	2	19	21	2	4	6
GREECE - GRECE	CCL9 - Tonnage	40 713 076		43 193 430	2	25	27	2	4	6
GUATEMALA	Yearbook 2011	3 912	*	1 586	2	0	2	2	0	2
ICELAND - ISLANDE	CCL9 - Tonnage	163 272		162 870	2	1	3	2	1	3
INDIA - INDE	CCL9 - Tonnage	9 571 774		11 113 181	2	16	18	2	4	6
INDONESIA - INDONESIE	Yearbook 2011	9 608 479	*	3 438 335	2	9	11	2	3	5
IRAN	CCL9 - Tonnage	701 134		1 108 934	2	5	7	2	2	4
IRELAND	CCL9 - Tonnage	213 754		249 830	2	1	3	2	1	3
ITALY - ITALIE	CCL9 - Tonnage	18 207 470		18 449 142	2	20	22	2	4	6
JAMAICA - JAMAIQUE	Yearbook 2011	152 992	*	10 000	2	0	2	2	0	2
JAPAN - JAPON	CCL9 - Tonnage	16 998 413		16 496 342	2	19	21	2	4	6
KUWAIT - KOWEIT	Yearbook 2011	2 236 541	*	2 354 000	2	7	9	2	3	5
LATVIA - LETTONIE	CCL9 - Tonnage	204 786		292 656	2	2	4	2	1	3
MALAYSIA - MALAISIE	CCL9 - Tonnage	8 147 436		10 938 309	2	16	18	2	4	6
MAURITIUS - MAURICE	CCL9 - Tonnage	115 244		198 490	2	1	3	2	1	3
MEXICO	CCL9 - Tonnage	1 408 275		2 767 145	2	8	10	2	3	5
MONACO	Yearbook 2011	135	*	1 228	0	0	0	2	0	2
MOROCCO - ROYAUME DU MAROC	CCL9 - Tonnage	384 319		452 919	2	2	4	2	1	3
MOZAMBIQUE	Yearbook 2011	39 625	*	45 581	2	0	2	2	0	2
MYANMAR	Yearbook 2011	205 386	*	600 309	2	3	5	2	2	4
NETHERLANDS - PAYS-BAS	CCL9 - Tonnage	6 996 018		6 772 632	2	13	15	2	3	5
NEW ZEALAND - NOUVELLE ZELAN	CCL9 - Tonnage	215 591		242 397	2	1	3	2	1	3
NIGERIA	Yearbook 2011	638 982	*	204 422	2	1	3	2	1	3
NORWAY - NORVEGE	CCL9 - Tonnage	16 683 836		17 564 236	2	20	22	2	4	6
OMAN SULTANATE - SULTANAT D'O	CCL9 - Tonnage	30 637		38 167	2	0	2	2	0	2
PAKISTAN	CCL9 - Tonnage	387 556		405 449	2	2	4	2	1	3

Member Govern./ Gouvern. Membres	Updating Source/ Source /Maj	Tonnages Lloyd's List (1)		Tonnages reported	Shares - Parts			Votes - Voix		
					Fix.	Sup.	Tot.	Fix.	Sup.	Tot.
PAPUA NEW GUINEA	CCL9 - Tonnage	113 784		158 929	2	1	3	2	1	3
PERU - PEROU	CCL9 - Tonnage	395 753		419 932	2	2	4	2	1	3
PHILIPPINES	Yearbook 2011	5 269 721	*	4 980 880	2	11	13	2	3	5
POLAND - POLOGNE	CCL9 - Tonnage	162 245		149 463	2	1	3	2	1	3
PORTUGAL	CCL9 - Tonnage	1 285 415		1 371 496	2	5	7	2	2	4
QATAR	Yearbook 2011	960 840	*	652 280	2	3	5	2	2	4
REPUBLIC OF KOREA - REPUBLIQUE	CCL9 - Tonnage	12 235 501		29 885 000	2	25	27	2	4	6
REP. OF SOUTH AFRICA - AFRIQUE I	CCL9 - Tonnage	167 041		170 221	2	1	3	2	1	3
ROMANIA - ROUMANIE	CCL9 - Tonnage	92 681		126 096	2	1	3	2	1	3
RUSSIA - RUSSIE	CCL9 - Tonnage	7 790 396		8 969 709	2	14	16	2	4	6
SAUDI ARABIA - ARABIE SAOUDITE	CCL9 - Tonnage	1 617 347		1 678 474	2	6	8	2	2	4
SERBIA - SERBIE	Yearbook 2011	14 828	*	18 492	2	0	2	2	0	2
SINGAPORE - SINGAPOUR	CCL9 - Tonnage	48 608 787		53 691 448	2	25	27	2	4	6
SLOVENIA - SLOVENIE	CCL9 - Tonnage	2 597		2 718	2	0	2	2	0	2
SPAIN - ESPAGNE	CCL9 - Tonnage	3 075 247		2 952 369	2	8	10	2	3	5
SRI LANKA	Yearbook 2011	196 212	*	150 089	2	1	3	2	1	3
SURINAME	Yearbook 2011	5 015	*	13 136	2	0	2	2	0	2
SWEDEN - SUEDE	CCL9 - Tonnage	3 468 425		4 095 310	2	10	12	2	3	5
SYRIA - SYRIE	Yearbook 2011	134 644	*	498 145	2	3	5	2	1	3
THAILAND - THAILANDE	CCL9 - Tonnage	2 805 069		3 846 758	2	9	11	2	3	5
TONGA	Yearbook 2011	43 386	*	69 034	2	0	2	2	0	2
TRINIDAD & TOBAGO - TRINITE & T	Yearbook 2011	50 045	*	19 381	2	0	2	2	0	2
TUNISIA - TUNISIE	Yearbook 2011	232 780	*	276 394	2	2	4	2	1	3
TURKEY - TURQUIE	CCL9 - Tonnage	5 976 008		6 891 750	2	13	15	2	3	5
UKRAINE	CCL9 - Tonnage	729 448		856 508	2	4	6	2	2	4
UNITED ARAB EMIRATES	Yearbook 2011	1 075 569	*	1 008 069	2	4	6	2	2	4
UNITED KINGDOM - ROYAUME UNI	CCL9 - Tonnage	45 862 765		45 360 141	2	25	27	2	4	6
U.S.A. - ETATS UNIS D'AMERIQUE	CCL9 - Tonnage	11 801 029		23 063 117	2	22	24	2	4	6
URUGUAY	CCL9 - Tonnage	96 698		122 387	2	1	3	2	1	3
VENEZUELA	Yearbook 2011	1 040 834	*	577 330	2	3	5	2	2	4
TOTAL (Member States / Etats membres)		464 080 224		509 457 113	154	551	705	156	156	312
Suspended Member States / Etats Membres privés de leurs droits										
DOMINICAN REPUBLIC - REP DOMINICAINE		12 039		12 039	0	0	0	0	0	0
REP DEMOCRATIQUE DU CONGO		12 918		12 918	0	0	0	0	0	0
TOTAL (Member States / Etats membres)		464 105 181		509 482 070	0	0	0	0	0	0

(1) In accordance with Tech. Resol. R.2.1.1 (b)

(1) Conformément à la Résolution Technique R.2.1.1 (b)

* Member States who have not reported their tonnage, in accordance with CCL9

* Etats Membres qui n'ont pas reporté leur tonnage, conformément avec la LCC9F

WORK PROGRAMMES

PROPOSED IHO FIVE-YEAR WORK PROGRAMME 2013 – 2017

PREAMBLE

In accordance with Article 23 (c) of the IHO General Regulations, the Directing Committee, taking into consideration the work of the Committees and Working Groups, is required to present to each International Hydrographic Conference a proposal containing the Work Programme to be carried out during the following period (in this case 2013-2017) together with the financial implications related to it.

For the preparation of the proposed Work Programme 2013-2017, the Directing Committee requested the Chairmen of all IHO bodies to contribute to this process by providing input thereby making the IHO Work Programme document as complete as possible with regard to the activities that the Organization plans to undertake in the next five-year period.

As you are aware, the IHO has defined three Programmes to meet its goals:

- *Programme 1 “Corporate Affairs”* under the principal responsibility of the International Hydrographic Bureau (to be replaced by the Secretary General when the revised IHO Convention enters into force);
- *Programme 2 “Hydrographic Services and Standards”* under the principal responsibility of the relevant Hydrographic Services and Standards Committee (HSSC);
- *Programme 3 “Inter Regional Coordination and Support”* under the principal responsibility of the Inter Regional Coordination Committee (IRCC).

The document provided here follows that structure.

Under each programme there are various elements, with a clearly stated objective for each, followed by the tasks (actions). In identifying the tasks, the input from the Chairs of the relevant IHO bodies together with other information held by the IHB have been taken into account.

Annex A provides the Capacity Building Work Programme for the period of 2013-2017.

Annex B provides a cross reference between the proposed 2013-2017 IHO Budget Chapters and the Work Programme.

Annex C lists all tasks with an indication of the timeframe in which each task is expected to be executed. This layout will serve as the basis and guide for the preparation of the yearly work programmes during the period.

A table of graphs is also provided, illustrating for each Programme the resources allocated from the different Chapters of the budget.

The Directing Committee submits the IHO FIVE-YEAR WORK PROGRAMME 2013-2017 for the approval of the XVIIIth IH Conference in April 2012.

WORK PROGRAMME No. 1

CORPORATE AFFAIRS

TABLE OF CONTENTS

- Element 1.1 Co-operation with International Organizations and participation in relevant meetings
- Element 1.2 Information Management
- Element 1.3 Public Relations
- Element 1.4 Work Programme & Budget, Strategic Plan and Performance Monitoring
- Element 1.5 IHB Management
- Element 1.6 International Hydrographic Conferences or future Assemblies

Note: Please note that the Proposed IHO Budget for the period 2013-2017 is presented separately.

PROGRAMME 1 - “CORPORATE AFFAIRS”

Concept: This Programme seeks to ensure the effectiveness of the IHO, promote its roles and objectives and ensure that it operates efficiently and effectively.

Element 1.1 Cooperation with International Organizations and participation in relevant meetings

Objective: To maintain relationships with relevant international organizations in order to further the interests of the IHO by enlisting their support and cooperation, and to participate in projects of common interest. Represent IHO and participate in international forums dealing with matters of relevance to the IHO WP, including:

Task 1.1.1	Antarctic Treaty Consultative Meeting (ATCM)	1 meeting annually – 1 Dir
Task 1.1.2	Comité International Radio Maritime (CIRM)	1 meeting annually- 1 Dir/PA
Task 1.1.3	Council of Managers of National Antarctic Programs (COMNAP)	1 meeting annually, if found appropriate based on its Agenda. 1 Dir/PA
Task 1.1.4	European Union Initiatives (such as INSPIRE)	2 meetings annually. 1 Dir/PA per meeting
Task 1.1.5	International Federation of Surveyors (FIG)	1 meeting every 2 years. 1 Dir/PA
Task 1.1.6	International Federation of Hydrographic Societies (IFHS)	1 meeting annually. 1 Dir/PA
Task 1.1.7	International Association of Antarctic Tour Operators (IAATO)	1 meeting annually, if found appropriate based on its Agenda. 1 Dir/PA
Task 1.1.8	IALA (such as the e-NAV Committee)	2 meetings annually. 1 Dir+PA per meeting.
Task 1.1.9	International Association of Ports and Harbours (IAPH)	1 meeting every 2 years. 1 Dir
Task1.1.10	International Cartographic Association (ICA) (such as ICA Commission on Geoinformation Infrastructures and Standards)	1 meeting every 2 years. 1 Dir+ PA
Task1.1.11	International Electrotechnical Commission (IEC) (such as IEC Technical Committee 80)	2 meetings annually. 1 Dir/PA
Task1.1.12	International Maritime Organization (IMO) Assemblies, Councils, COMSAR, MSC, NAV, TCC.	7 meetings annually. 1 Dir + PA or 1 PA
Task1.1.13	International Maritime Pilots’ Association (IMPA)	1 meeting annually, if found appropriate based on its Agenda. 1 Dir /PA
Task1.1.14	Intergovernmental Oceanographic Commission (IOC) of UNESCO, Assemblies, Councils or specialized WGs.	2 meetings annually. 1 Dir/PA
Task1.1.15	International Standards Organization (ISO) (such as ISO Technical Committee 211)	2 meetings annually. 1 Dir/PA
Task1.1.16	Joint Board of Geospatial Information Societies (JB-GIS)	1 meeting annually if coinciding with other meetings. 1 Dir/PA
Task1.1.17	NATO (such as DGIWG)	1 meeting annually. 1 Dir/PA
Task1.1.18	UN (such as UNICPOLOS, CGGIM)	2 meetings annually. 1 Dir
Task1.1.19	World Meteorological Organization (WMO)	1 meeting annually. 1 Dir/PA

Task1.1.20	Other organizations when their agendas have relevance to the programme of the IHO, such as : Group on Earth Observation (GEO); Pan-American Institute of Geography and History (PAIGH); Port Management Association West and Central Africa (PMAWCA) & Maritime Organizations of West and Central Africa (MOCWA) or the Scientific Committee on Antarctic Research (SCAR).	Participation to be defined based on their Agendas and significance to the IHO WP. 1 Dir/PA to be defined.
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Note: For planning purposes an average of 30 meetings each year with an average cost of 3K for each meeting has been assumed. That is to say, 90K annually. This amount includes travel and allowances.

Element 1.2 Information Management

Objective: To provide MS and IHO stakeholders with accurate and relevant information in a timely and accessible manner.

Task 1.2.1	Maintain and extend the IHO website using commercial contract support.	2013-17	2013: 20K 2014 to 2017: 10K annually
Task 1.2.2	Develop IHO GIS and webserver and web mapping services in support of RHCs, ENC availability, INT chart coordination, C-55 and other related activities, including using commercial contract support.	2013-17	2013: 25K 2014 to 2017: 10K annually
Task 1.2.3	Develop and maintain IHB desk-top and in-house publishing facilities	2013-17	7.5K annually
Task 1.2.4	Compile and publish the following documents that are not allocated to a specific IHO body: P-5 – IHO Yearbook P-7 – IHO Annual Report P-6 – Reports of IHC M-3 – Technical and Administrative Resolutions	As required	no significant IHO expense anticipated
Task 1.2.5	Maintain and extend IHB Admin IT infrastructure	2013-17	60K annually (includes hardware, software and contract maintenance support)
Task 1.2.6	Communication between the IHB and Member States through Circular Letters	2013-17	no significant IHO expense anticipated
Task 1.2.7	IHB Technical Library – incorporate new material	2013-17	2.0K annually

Element 1.3 Public Relations

Objective: To raise awareness of the role of the IHO and its Member States and the importance of hydrography, particularly by government and in the user community.

Task 1.3.1	Maintain relationships with the Government of Monaco and the diplomatic corps accredited in Monaco	2013-17	no significant IHO expense anticipated
Task 1.3.2	Compile and publish P-1 – <i>International Hydrographic Review</i> in collaboration with IHR editor	2013-17	15K annually
Task 1.3.3	World Hydrography Day – Preparation of the theme's material and social celebration event in Monaco	2013-17	5K annually
Task 1.3.4	General Public Relation support. Representation expenses	2013-17	3K annually

Element 1.4 Work Programme & Budget, Strategic Plan and Performance Monitoring.

Objective: To ensure that the formulation and the execution of the IHO Work Programme and Budget is managed, monitored and executed efficiently to best meet the requirements of Member States and the interests of stakeholders. This Element focuses on the implementation of the IHO's Strategic Plan particularly with regard to risk assessment and performance indicators.

Task 1.4.1	Implement and administer processes for programme management, performance monitoring and risk assessment, including the acquisition and operation of suitable business software tools.	2013-17	10K annually (estimates to be confirmed)
Task 1.4.2	Execute the IHO Work Programme and Budget approved by the XVIII th IHC, monitoring its progress and adopting the necessary adjustment according to the circumstances.	2013-17	no significant IHO expense anticipated
Task 1.3.3	Conduct biennial IHO stakeholders' forums	2013 2015 2017	1 meeting every 2 years, at least 1Dir + 2PA per meeting

Element 1.5 IHB Management

Objective: To ensure that the IHB meets the requirements set by the Member States, by providing the best service (quality, opportunity, reasonable cost) within the resources available.

Task 1.5.1	Maintain, update and develop necessary procedures to facilitate and improve effectiveness of the general and permanent Finance and Administrative work.	2013-17	no significant IHO expense anticipated
Task 1.5.2	Provide in-house translation service English/French and French/English in support of the IHO WP. Include Spanish translations as much as possible in accordance with relevant IHO Resolutions.	2013-17	no significant IHO expense anticipated
Task 1.5.3	Engage contract support to supplement maintenance and development of technical standards beyond the resources or competence of the IHB or the IHO WGs, including: - Translation - Technical editing - Cataloguing the IHO working document archive	2013-17	40K each year
Task 1.5.4	Monitor and maintain the Staff Regulations and the Job Descriptions of the IHB Staff in step with the evolution of the IHO work programme and IHO requirements.	2013-17	no significant IHO expense anticipated
Task 1.5.5	Maintain the IHB premises as required as the occupant. Maintain operational hardware, software and furniture, carry out renovations or modifications as requirements arise.	2013-17	30K each year

Element 1.6 International Hydrographic Conferences or Future Assemblies

Objective: To ensure the successful functioning of Conferences or Assemblies so that they fulfil their top-level governance and decision-making functions in accordance with Convention and the other Instruments of the Organization.

Task 1.6.1	Organize the 5 th Extraordinary International Hydrographic Conference or Extraordinary International Hydrographic Assembly in the event the Protocol of Amendment to the IHO Convention has entered into force.	2014	To be confirmed by the XVIII IHC Funded by the Conference Fund
Task 1.6.2	Organize the XIX th International Hydrographic Conference or IHO Assembly in the event the Protocol of Amendment to the IHO Convention has entered into force.	2017	Funded by the Conference Fund

WORK PROGRAMME No. 2

HYDROGRAPHIC SERVICES AND STANDARDS

TABLE OF CONTENTS

Element 2.1	Technical Programme Coordination
Element 2.2	Hydrographic Data Transfer Standards
Element 2.3	Nautical Cartography
Element 2.4	Digital Data Protection and Authentication
Element 2.5	Data Quality
Element 2.6	Nautical Publications
Element 2.7	Tides and Datums
Element 2.8	Digital Data Updating
Element 2.9	Marine Spatial Data Infrastructures
Element 2.10	Hydrographic Data Acquisition and Processing
Element 2.11	Hydrographic Dictionary
Element 2.12	Hydrographic Aspects of UNCLOS

PROGRAMME 2 - "HYDROGRAPHIC SERVICES AND STANDARDS"

Concept: This Programme seeks to develop, maintain and extend technical standards, specifications and guidelines to enable the provision of standardised products and services that meet the requirements of mariners and other users of hydrographic information.

Element 2.1 Technical Programme Coordination

Objective: To monitor technical developments, oversee the development of IHO technical standards, specifications and publications through the coordination and interaction of relevant IHO Working Groups, and to make recommendations to Member States.

Task 2.1.1	Conduct annual meetings of HSSC	2013-17	1 meeting per year, 1 Dir + 2 PA per meeting
Task 2.1.2	Provide technical advice and guidance on IHO technical standards, specification and publications	2013-17	= 0.25 D/PA man-years

Element 2.2 Hydrographic Data Transfer Standards

Objective: To monitor developments related to transfer standards for digital hydrographic data, to develop and maintain the relevant IHO standards, specifications and publications, and to provide technical advice as appropriate.

Task 2.2.1	Conduct annual and biennial meetings of relevant HSSC WGs dealing with hydrographic data transfer standards	2013-17	3 meetings per year, 1 PA per meeting
Task 2.2.2	Maintain and extend the relevant IHO standards, specifications and publications, using contract support assistance as appropriate, including: <ul style="list-style-type: none"> - S-57 IHO Transfer Standard for Digital Hydrographic Data - S-100 IHO Universal Hydrographic Data Model - S-101 ENC Product Specification - S-102 Bathymetric Surface Product Specification - S-58 Recommended ENC Validation Checks - S-65 ENC Production Guidance - S-64 IHO Test Data Sets for ECDIS - S-61 Product Specification for Raster Navigational Charts - S-99 Operational Procedures for the Organization and Management of the S-100 Geospatial Information Registry - S-66 Facts about Electronic Charts and Carriage Requirements 	2013-17	Contract support: 15K each year
Task 2.2.3	Develop and maintain as-yet undefined S-100-based Product Specifications	2013-14	1 meeting per year, 1 PA per meeting
Task 2.2.4	Maintain and extend S-100 registry	2013-17	no significant IHO expense anticipated
Task 2.2.5	Provide outreach and technical assistance regarding transfer standards	2013-17	1 meeting per year, 1 Dir + 1 PA per meeting

Element 2.3 Nautical Cartography

Objective: To monitor developments related to nautical cartography for paper nautical charts and the colours, symbols and display rules used to show SENC information on ECDIS, to develop and maintain the relevant IHO standards, specifications and publications, and to provide technical advice as appropriate.

Task 2.3.1	Conduct annual meetings of relevant HSSC WGs dealing with nautical cartography	2013-17	2 meetings per year, 1 PA per meeting
Task 2.3.2	Maintain and extend the relevant IHO standards, specifications and publications, using contract support assistance as appropriate, including: <ul style="list-style-type: none"> - S-4 Chart Specifications of the IHO and Regulations for International (INT) Charts <ul style="list-style-type: none"> INT 1 - Symbols, Abbreviations and Terms used on Charts INT 2 - Borders, Graduations, Grids and Linear Scales INT 3 - Use of Symbols and Abbreviations - S-11 Part A - Guidance for the Preparation and Maintenance of INT Chart schemes - S-11 Part B - Catalogue of INT Charts - S-49 Standardization of Mariners' Routeing Guides - Digital data updating related elements of Appendix 1 to S-52 - Guidance on Updating the Electronic Navigational Chart - S-52 and its accompanying Presentation Library - Specifications for Chart Content and Display Aspects of ECDIS - Portrayal related elements of S-101 - ENC Product Specification and other S-100-based Product Specifications 	2013-17	Contract support: 15K each year

Element 2.4 Digital Data Protection and Authentication

Objective: To monitor developments related to data protection and data authentication, to develop and maintain the relevant IHO standards, specifications and publications, and to provide technical advice as appropriate

Task 2.4.1	Conduct annual meetings of relevant HSSC WG dealing with digital data protection and authentication	2013-17	1 meeting per year, 1 PA per meeting
Task 2.4.2	Maintain and extend the relevant IHO standards, specifications and publications, including: <ul style="list-style-type: none"> - S-63 IHO Data Protection Scheme - Data protection and authentication related elements of S-100 - IHO Universal Hydrographic Data Model and - S-101 - ENC Product Specification 		no significant IHO expense anticipated

Element 2.5 Data Quality

Objective: To monitor developments related to methods of classifying and depicting the quality of hydrographic information, to develop and maintain the relevant IHO standards, specifications and publications, and to provide technical advice as appropriate.

Task 2.5.1	Conduct annual meetings of relevant HSSC WG dealing with data quality	2013-17	1 meeting per year, 1 PA per meeting
Task 2.5.2	Maintain and extend the relevant IHO standards, specifications and publications, including: - Data quality related elements of S-57 - IHO Transfer Standard for Digital Hydrographic Data - Data quality related elements of S-52 - Specifications for Chart Content and Display Aspects of ECDIS - Data quality related elements of S-100 - IHO Universal Hydrographic Data Model - S-101 - ENC Product Specification and other S-100-based Product Specifications		no significant IHO expense anticipated

Element 2.6 Nautical Publications

Objective: To monitor developments related to the preparation of nautical publications, to develop and maintain the relevant IHO standards, specifications and publications, and to provide technical advice as appropriate.

Task 2.6.1	Conduct annual meetings of relevant HSSC WG dealing with nautical publications	2013-17	1 meeting per year, 1 PA per meeting
Task 2.6.2	Develop, maintain and extend S-10n - Nautical Information Product Specification		no significant IHO expense anticipated
Task 2.6.3	Maintain and extend the relevant IHO standards, specifications and publications, including: - IHO Resolutions in M-3 relating to Nautical Publications - S-12 Standardization of List of Lights and Fog Signals		no significant IHO expense anticipated

Element 2.7 Tides and Datums

Objective: To monitor developments related to tidal and water level observation, analysis and prediction and other related information including vertical and horizontal datums, to develop and maintain the relevant IHO standards, specifications and publications, and to provide technical advice as appropriate.

Task 2.7.1	Conduct annual meetings of relevant HSSC WG dealing with tides and datums	2013-17	1 meeting per year, 1 PA per meeting
Task 2.7.2	Maintain and extend the relevant IHO standards, specifications and publications, including: - Relevant IHO Resolutions in M-3 - S-60 User's Handbook on Datum Transformations involving WGS 84 - Standard Tidal Constituent List Inventory of Tide Gauges used by Member States	2013-17	no significant IHO expense anticipated
Task 2.7.3	Develop, maintain and extend a Product Specification for digital tide tables	2013-17	no significant IHO expense anticipated
Task 2.7.4	Develop, maintain and extend a Product Specification for the transmission of real-time tidal data	2013-17	no significant IHO expense anticipated
Task 2.7.5	Develop, maintain and extend a Product specification for dynamic tides in ECDIS	2013-17	no significant IHO expense anticipated

Element 2.8 Digital Data Updating

Objective: To monitor developments in standardized processes for the updating of digital hydrographic data products, to develop and maintain the relevant IHO standards, specifications and publications, and to provide technical advice as appropriate.

Task 2.8.1	Maintain and extend the relevant IHO standards, specifications and publications, including: - Digital data updating related elements of S-65 - ENC Production Guidance - S-52 Appendix 1 - Guidance on Updating the Electronic Navigational Chart	2013-17	no significant IHO expense anticipated
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Element 2.9 Marine Spatial Data Infrastructures

Objective: To monitor developments related to the hydrographic component of Spatial Data Infrastructures, to develop and maintain the relevant IHO publications, and to provide technical advice as appropriate.

Task 2.9.1	Conduct annual meetings of relevant HSSC WG dealing with MSDI	2013-17	1 meeting per year, 1 PA per meeting
Task 2.9.2	Maintain the relevant IHO standards, specifications and publications, including: - C-17 Spatial Data Infrastructures: "The Marine Dimension" - Guidance for Hydrographic Offices	2013-17	no significant IHO expense anticipated

Element 2.10 Hydrographic Data Acquisition and Processing

Objective: To monitor developments related to hydrographic data acquisition and processing, to develop and maintain the relevant IHO publications, and to provide technical advice as appropriate.

Task 2.10.1	Conduct annual meetings of relevant HSSC WG dealing with hydrographic data acquisition and processing when WG required	2013-17	no meetings planned at present
Task 2.10.2	Maintain and extend, when required, the relevant IHO standards, specifications and publications, including: S-44 - IHO Standards for Hydrographic Surveys	2013-17	no meetings planned at present

Element 2.11 Hydrographic Dictionary

Objective: To develop, maintain and extend S-32 - Hydrographic Dictionary in English, French and Spanish and to provide technical advice as appropriate.

Task 2.11.1	Maintain and extend the IHO Hydrographic Dictionary in English, French and Spanish.	2013-17	no significant IHO expense anticipated
Task 2.11.2	Develop the Spanish language Wiki version of S-32 with commercial contract support	2013-14	contract support: 20K

Element 2.12 Hydrographic Aspects of UNCLOS

Objective: To monitor developments related to the hydrographic aspects of the UN Convention on the Law of the Sea, to develop and maintain the relevant IHO publications, and to provide technical advice as appropriate.

Task 2.12.1	Organise and prepare ABLOS annual business meetings	2013-17	1Dir + PA at each meeting in 2013, 2015, 2017
Task 2.12.2	Organise and prepare the biennial ABLOS Conferences.	2014-16	self-funding
Task 2.12.3	Contribute to the revision of IHO publication C-51- TALOS Manual.	2013-17	no significant IHO expense anticipated

WORK PROGRAMME No. 3

INTER REGIONAL COORDINATION AND SUPPORT

TABLE OF CONTENTS

Element 3.0	Inter Regional Coordination Committee
Element 3.1	Co-operation with Member States and attendance at relevant meetings
Element 3.2	Increase Participation by non-Member States
Element 3.3	Capacity Building Management
Element 3.4	Capacity Building Assessment
Element 3.5	Capacity Building Provision
Element 3.6	Coordination of Global Surveying and Charting
Element 3.7	Maritime Safety Information
Element 3.8	Ocean Mapping Program

PROGRAMME 3 - "INTER REGIONAL COORDINATION AND SUPPORT"

Concept: This programme refers primarily to the Organization's strategic direction "*Facilitate global coverage and use of official hydrographic data, products and services*" through enhancing and supporting cooperation on hydrographic activities among the IHO Member States (MS) under the aegis of the Regional Hydrographic Commissions (RHCs). It also contributes to the strategic direction "*Assist Member States to fulfil their roles*" through the IHO capacity-building programme in supporting MS as well as non Member States to build national hydrographic capacities where they do not exist and to contribute to the improvement of the already established hydrographic infrastructure. The programme includes major topics that require a regionally coordinated approach, such as ENC adequacy, availability, coverage and distribution, maritime safety information and ocean mapping.

Element 3.0 Inter Regional Coordination Committee (IRCC)

Objective: To promote and coordinate those activities that might benefit from a regional approach:

- establish, coordinate and enhance cooperation in hydrographic activities amongst States on a regional basis, and between regions;
- establish co-operation to enhance the delivery of capacity building programs;
- monitor the work of specified IHO Inter-Organizational Bodies engaged in activities that require inter-regional cooperation and coordination.

The IRCC will foster coordination between all RHCs and other bodies that have a global/regional structure (i.e.: HCA, GGC, CBSC, IBSC, WWNWS-SC, WEND-WG). Also it will provide advice to the IHB on the implementation of the IHO planning mechanisms agreed at the 4th EIHC. One IHB Director and two Professional Assistants (PAs) are directly involved in this activity.

Task	Title	Activities / Deliverables	Comments	SD ¹	SPI ²
3.0.0	IRCC - Inter Regional Coordination Committee.	A) Organize, prepare, attend and report (annual) IRCC meetings. B) Report to the Conference (Council). C) Support the IHB to implement the planning mechanism annually and at the end of each 5-year (3-year) cycle. D) Contribute to the IHO Annual Report. E) Update and implement the IRCC Work Programme.	2013 to 2017 annually 2017 (annually when the Council is established) 2013 to 2017 annually 2013 to 2017 annually Permanent.	2	

Element 3.1 Cooperation with Member States and attendance at relevant meetings

Objective: To facilitate IHO MS coordination, cooperation and collaboration to improve hydrographic services and the provision of hydro-cartographic products through the structure of the RHCs.

Priorities depend on regional circumstances but RHC should first assess the adequacy, availability and consistency of coverage by nautical publications including paper charts and ENCs against international shipping requirements (risk assessment), identify difficulties and develop mechanism for solving them, including assisting members in bilateral or multilateral discussions, as necessary, with the support of other relevant IHO bodies. This element is largely accomplished through the meetings of the RHCs. The frequency of meetings varies from one every year to one every three years. These meetings have increased in importance and will continue to do so as the RHCs are increasingly involved in the overall planning, execution and assessment of the IHO Work Programme and the development of the IHO Strategic Plan, through the IRCC. These two to four-day meetings - often held in conjunction with a workshop, a seminar or a capacity building initiative - constitute the best opportunity for countries in a region, whether Member States or not, to discuss accomplishments, identify initiatives and develop regional positions on IHO issues. More and more accredited NGIOs and representatives from hydrographic industry participate in these events offering a unique opportunity to developing countries to keep updated on the technological developments and training opportunities. Attendance varies according to region, but is usually in the order of 20 to 50 participants at each event. A Director, sometimes accompanied by a PA, represents the IHB at the meetings,

¹ SD: Strategic Direction.

² SPI: Strategic level Performance Indicator.

providing guidance and assistance on IHO matters. Also the nominated Director monitors the follow-up of the actions agreed at each RHC meeting.

Task	Title	Activities / Deliverables	Comments	SD³	SPI⁴
3.1.1	ARHC – Arctic Region Hydrographic Commission.	Organize, prepare, attend and report (annual) ARHC Conferences.	2013 to 2017 annually	2	
3.1.2	BSHC - Baltic Sea Hydrographic Commission.	Organize, prepare, attend and report (annual) BSHC Conferences.	2013 to 2017 annually	2	
3.1.3	EAHC - East Asia Hydrographic Commission.	Organize, prepare, attend and report: -Coordinating Meetings, -ENC Task Group Meetings, -EAHC Conferences.	2013 to 2017 annually 2013 to 2017 annually 2015	2	
3.1.4	EAtHC - Eastern Atlantic Hydrographic Commission	Organize, prepare, attend and report EAtHC Conferences.	2014, 2016	2	
3.1.5	MACHC - Meso American and Caribbean Hydrographic Commission.	Organize, prepare, attend and report (annual) MACHC Conferences.	2013 to 2017 annually	2	
3.1.6	MBSHC - Mediterranean and Black Seas Hydrographic Commission	Organize, prepare, attend and report MBSHC Conferences.	2013-2015-2017	2	
3.1.7	NHC - Nordic Hydrographic Commission.	Organize, prepare, attend and report (annual) NHC Conferences.	2013 to 2017 annually	2	
3.1.8	NIOHC - North Indian Ocean Hydrographic Commission.	Organize, prepare, attend and report (annual) NIOHC Conferences.	2013 to 2017 annually	2	
3.1.9	NSHC - North Sea Hydrographic Commission	Organize, prepare, attend and report NSHC Conferences.	2014, 2016	2	
3.1.10	RSAHC - ROPME Sea Area Hydrographic Commission	Organize, prepare, attend and report RSAHC Conferences.	2013, 2015, 2017	2	
3.1.11	SAIHC - Southern Africa and Islands Hydrographic Commission	Organize, prepare, attend and report (annual) SAIHC Conferences.	2013 to 2017 annually	2	
3.1.12	SEPHC - South East Pacific Hydrographic Commission	Organize, prepare, attend and report SEPHC Conferences and working group meetings.	2013, 2015, 2017	2	
3.1.13	SWAtHC - South West Atlantic Hydrographic Commission.	Organize, prepare, attend and report (annual) SWAtHC Conferences.	2013 to 2017 annually	2	
3.1.14	SWPHC - South West Pacific Hydrographic Commission.	Organize, prepare, attend and report SWPHC Conferences.	2013, 2015, 2016	2	

³ SD: Strategic Direction

⁴ SPI: Strategic level Performance Indicator.

3.1.15	USCHC - USA and Canada Hydrographic Commission.	Organize, prepare, attend and report (annual) USCHC Conferences.	2013 to 2017 annually	2	
3.1.16	HCA - Hydrographic Commission on Antarctica.	A) Organize, prepare, attend and report (annual) HCA meetings. B) HCA to conduct a risk assessment for the Antarctic region and develop a Work Program to improve Antarctic charting. C) HCA through IHB to submit to ATCM the risk assessment conducted by HCA for the Antarctic Region together with a proposed HCA work program to improve Antarctic charting, for consideration, endorsement and support from ATCM.	2013 to 2017 annually 2013-2014 2015	2	
3.1.17	WEND Working Group	Report on the work by correspondence and when necessary prepare, attend and report WEND WG meetings.	2013 to 2017 annually	2	
3.1.18	Industry participation in RHC meetings.		To be considered on a case by case basis in conjunction with tasks 3.1.1 to 3.1.15.	1	

Element 3.2 Increase participation by non Member States

Objective: To raise awareness in non-Member States of the importance of hydrography and nautical charting services and their related products. Give advice to Coastal States on how to comply with international regulations such as SOLAS Chapter V and highlight the importance of coordinated efforts in providing for safety of navigation and protection of the marine environment. Stress the importance of becoming an IHO Member State and of integration in the work of the RHCs.

The importance of increasing the participation by non Member States is recognized by the General Assembly of the United Nations (UN) and by the International Maritime Organization (IMO). This activity is coordinated at the regional level by RHC Chairs and monitored and supported by the IHB Director and PA assigned to the relevant RHC. This element also includes activities to encourage the reinstatement of suspended Member States, approval of applications and deposit of instruments of accession, as appropriate. Different channels may be activated for these purposes, including relations with the relevant entities in concerned countries and their representatives in international organizations to which they are Parties to.

Task	Title	Activities / Deliverables	Comments	SD⁵	SPI⁶
3.2.1	EAHC - Execute strategy to increase participation of non-Member States in IHO activities and advise them on how to comply with international regulations such as SOLAS V.		To be considered in conjunction with tasks 3.1.3 and 3.3.5.	2	SPI 7
3.2.2	EAtHC - Execute strategy to increase participation of non-Member States in IHO activities and advise them on how to comply with international regulations such as SOLAS V.	A) Maintain contact with pending applicants in the region to encourage the ratification of the IHO Convention. B) Maintain contact with suspended Member State in the region to encourage its re-insertion in IHO.	To be considered in conjunction with tasks 3.1.4 and 3.3.5.	2	SPI 7
3.2.3	MACHC - Execute strategy to increase participation of non-Member States in IHO activities and advise them on how to comply with international regulations such as SOLAS V.	Contact suspended Member State in the region to encourage its re-insertion in IHO.	To be considered in conjunction with tasks 3.1.5 and 3.3.5.	2	SPI 7
3.2.4	MBSHC - Execute strategy to increase participation of non-Member States in IHO activities and advise them on how to comply with international regulations such as SOLAS V.		To be considered in conjunction with tasks 3.1.6 and 3.3.5.	2	SPI 7
3.2.5	NIOHC - Execute strategy to increase participation of non-Member States in IHO activities and advise them on how to comply with international regulations such as SOLAS V.		To be considered in conjunction with tasks 3.1.8 and 3.3.5.	2	SPI 7

⁵ SD: Strategic Direction.

⁶ SPI: Strategic level Performance Indicator.

3.2.6	RSAHC - Execute strategy to increase participation of non-Member States in IHO activities and advise them on how to comply with international regulations such as SOLAS V.		To be considered in conjunction with tasks 3.1.10 and 3.3.5.	2	SPI 7
3.2.7	SAIHC - Execute strategy to increase participation of non-Member States in IHO activities and advise them on how to comply with international regulations such as SOLAS V.		To be considered in conjunction with task 3.1.11 and 3.3.5.	2	SPI 7
3.2.8	SEPHC - Execute strategy to increase participation of non-Member States in IHO activities and advise them on how to comply with international regulations such as SOLAS V.	Continue the efforts to include Panama as Observer Country to the Commission.	To be considered in conjunction with task 3.1.12 and 3.3.5.	2	SPI 7
3.2.9	SWAtHC - Execute strategy to increase participation of non-Member States in IHO activities and advise them on how to comply with international regulations such as SOLAS V.		To be considered in conjunction with task 3.1.13 and 3.3.5.	2	SPI 7
3.2.10	SWPHC - Execute strategy to increase participation of non-Member States in IHO activities and advise them on how to comply with international regulations such as SOLAS V.		To be considered in conjunction with tasks 3.1.14 and 3.3.5.	2	SPI 7

3.2.11	RHCs to encourage the approval of pending applications for IHO membership.	Notification of approval within 12 months of the application.	Permanent.	2	SPI 6
3.2.12	RHCs to encourage the ratification of the IHO Convention by approved applicants.	Ratification of the IHO Convention within two years of the approval of the application.	Permanent.	2	SPI 6

Element 3.3 Capacity Building Management

Objective: To maintain an IHO Strategy on Capacity Building (CB), and the establishment of coordination, operational and control procedures directed to achieve effective and efficient interaction between all parties involved in the IHO CB effort.

This element includes the activities of the CB Sub-Committee (CBSC) and the joint FIG-IHO-ICA International Board on Standards of Competence for hydrographic surveyors and nautical cartographers (IBSC).

- With regard to the CBSC, this element contains various tasks focused on the need to optimize the IHO CB structure by improving coordination with the RHCs, increasing the control over the projects / initiatives agreed, following the procedures developed to help the management of the CB Fund. Priority is being given to developing first and second phase hydrographic capabilities in developing countries. ENC production capabilities are also included. All possibilities of developing efficiently the IHO strategy on CB will be explored, including considering setting up shared regional capacities. A Director and a PA are involved for about 30% of their overall time in the execution of this activity. The IHB Finance personnel also contribute to this element. The IHB and the CBSC Chair will maintain coordination with the secretariats of IMO, IOC, IALA, WMO and any other relevant organizations in respect of CB matters aiming at improving the effectiveness of the capacity building effort in these organizations' areas as they relate to hydrography, nautical cartography and marine safety information. A Director and a PA are involved.

- With regard to the IBSC, the intention is 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 the process of the new standards framework the IBSC will also consider:

- (i) modular learning over a limited time period to achieve a full Cat A or Cat B curriculum;
- (ii) modern approaches in offering courses i.e. e-learning;
- (iii) the increasing role that the private sector plays in educational activities.

The IBSC will continue to review the syllabi of programmes and individual recognition schemes submitted by Hydrographic Offices, institutions and learned bodies taking into account comments and recommendations received from National Focal Points and other authorities. The IBSC work will be supported by a special fund administered by FIG.

The IBSC activities involve a Director, a PA and representatives of four MSs.

Task	Title	Activities / Deliverables	Comments	SD ⁷	SPI ⁸
3.3.1	CBSC - Capacity Building Sub-Committee.	A) Organize, prepare, conduct and report annual CBSC meetings. B) Follow-up the coordination required to execute the action lists agreed. C) Keep IHO publication M-2 "National Maritime Policies and Hydrographic Services" duly updated.	2013 to 2017 annually 1 Dir + 1 PA per meeting (annual). Permanent. Permanent.	4	SPI 4 & 4bis
3.3.2	Capacity Building Fund (CB Fund) Management.	IHB to administer the CB Fund in conformity with IHO Resolutions 4 to 7/2004 as amended and report to MSs on its use and status through the IHO Annual Report.	Permanent. Development and maintenance of a CB Management system: 80K for 5 years.	4	

⁷ SD: Strategic Direction.

⁸ SPI: Strategic level Performance Indicator.

3.3.3	Meetings with other organizations, funding agencies, private sector and academia.	IHB or CBSC Chair to participate in coordination meetings with international organizations such as IMO, IOC, FIG, WMO, IALA and others; with funding agencies, the private sector and academia, related to initiatives with a capacity building component aimed at developing hydrographic capabilities in developing countries, informing MSs of results.	2013 to 2017 annually 1 Dir + 1 PA per meeting (biannual).	1	
3.3.4	IHO Capacity Building Strategy.	CBSC to keep the IHO Capacity Building Strategy updated. At each CBSC meeting, the Sub-Committee is to review the Strategy in the light of new elements, update it accordingly and display it in the IHO website.	To be considered in conjunction with task 3.3.1.	4	
3.3.5	Capacity Building Work Programme.	CBSC to study the CB needs presented to the CBSC by the RHCs, to foster the sharing of lessons learned and to help RHCs to develop best practices. CBSC to develop and propose an annual IHO Capacity Building Work Program (CBWP) to be included in the general IHO WP. CBSC to maintain and control the execution of the approved CBWP.	To be considered in conjunction with task 3.3.1.	4	
3.3.6	Follow-up of CB activities and initiatives.	CBSC to follow-up the CB activities and initiatives, especially those for which the CB Fund and MS have contributed. To study and install measures to improve the technical work with the Management Plan, i.e. developing a database, aiming at reducing the administrative work.	To be considered in conjunction with task 3.3.1.	4	
3.3.7	IBSC - International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers.	A) Prepare, attend and report annual IBSC meetings. B) Update and implement the IBSC Work Programme. C) Manage the IBSC Fund and report to IHO	2013 to 2017 annually 1 PA per meeting (annual).	1 & 4	
3.3.8	Provide guidance to training institutions.		As required.	4	
3.3.9	Maintain IBSC Publications (C-6, C-47, S-5, S-8).	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.	2013-2017 Support to IBSC on the complete development of new set of Standards of Competence: 60 k€ for 5 years.	1 & 4	

Element 3.4 Capacity Building Assessment

Objective: To assess the hydrographic surveying, nautical charting and nautical information status of nations and regions where hydrography is developing. Provide guidelines for the development of local hydrographic capabilities taking into account the regional context and possibilities of support for shared capabilities. Identify regional requirements and study the possibilities for capacity building assistance and training from the CB Fund and other sources.

This element includes technical and advisory visits to selected countries identified by RHCs. The visits will be made by teams of experts from the respective region supported by staff from the IHB or MS as appropriate. The CBSC will continue reviewing the procedures established for assessing the effectiveness of individual CB projects. The IHB and RHCs will assist in assessing in-country follow-up actions in relation to any recommendations included in technical visit reports. This task involves a Director and a PA.

Task	Title	Activities / Deliverables	Comments	SD ⁹	SPI ¹⁰
3.4.1	Technical and advisory visits.	RHCs, with the support of the CBSC Chair and IHB, to establish appropriate teams of experts and to schedule and undertake Technical and Advisory Visits to assess the status of hydrography, cartography and aids to navigation in accordance with the IHO CBWP.	Permanent. According to CBSC Work Programme and CB Fund. Detailed information on the technical and advisory visits expected so far are provided in the attached "CB requirements".	4	
3.4.2	Review existing CB procedures and develop new ones.	CBSC to maintain and improve where necessary the CB procedures to be used by RHCs when assessing hydrographic, cartographic and safety of navigation status.	As required.	4	
3.4.3	Enhance publication C-55	IHB with the support of the RHCs, CBSC and GGC to develop a new framework for C-55.	2013-2015 Develop the framework for the input, presentation and assessment of the survey and nautical cartography status: 60 k€ for 3 years.	2	

Element 3.5 Capacity Building Provision

Objective: To undertake initiatives for the provision of general support, training and education to address identified CB shortcomings; identify aid agencies and other sources of funds; liaise with MS, other organizations and funding agencies for such provision and establish and participate in joint development projects.

Several tasks are included under this element, including raising awareness of the importance of hydrography during visits requested by governments. Technical workshops and short courses are programmed in accordance with the priorities identified by the relevant RHCs. The CBSC studies and assesses all requests and determines the level of support that will be provided by the CB Fund. This element also includes the monitoring of several marine projects. The follow-up and coordination of all CB activities absorbs close to 50% of the time of a Director and a PA.

⁹ SD: Strategic Direction.

¹⁰ SPI: Strategic level Performance Indicator.

Task	Title	Activities / Deliverables	Comments	SD¹¹	SPI¹²
3.5.1	Raise Awareness on the Importance of Hydrography.	IHB, RHC Chairmen and individual National Hydrographers in cooperation with CBSC to provide the Governmental Authorities of the Developing Countries with the necessary information required to raise the awareness of the importance of Hydrography and its contribution to socio-economic development.	According to CBSC Work Programme.	3	
3.5.2	Technical Workshops, Seminars, Short Courses.	RHCs in conjunction with CBSC and with the support of IHB, to organize Technical Workshops, Seminars and Short Courses with a view to highlighting the responsibilities of Coastal States (SOLAS V); to provide the basic technical knowledge and to jointly explore initiatives to achieve a minimum level of response to national, regional and international obligations.	According to CBSC Work Programme and CB Fund. Detailed information on the technical workshops, seminars, short courses expected so far are provided in the attached "CB requirements".	4	
3.5.3	Hydrographic and Nautical Cartography Courses.	IHB, in conjunction with IBSC and CBSC, to encourage the development and delivery of new Hydrographic and Nautical Cartography Programs, including the establishment of new Hydrographic Schools where that regional capacity does not exist. Report to the IHO on the results.	According to CBSC Work Programme and CB Fund. Detailed information on the courses expected so far are provided in the attached "CB requirements".	4	
3.5.4	On the Job Training (ashore / on board).	A) CBSC, with IHB support, to investigate "on-the-job training opportunities" ashore and on board (ships of opportunity). B) To study and develop a procedure to take advantage of this innovative training tool and report the results to the IHO proposing the adoption of an IHO resolution on the subject.	According to CBSC Work Programme.	4	
			2014		
3.5.5	Marine/Maritime Projects.	IHB, with the support of CBSC and RHCs, to ensure awareness of multilateral or bilateral projects with hydrographic and/or cartographic components, and to provide advice to governments, project managers and funding agencies on the importance of including a hydrographic Capacity Building Component. Report to IHO annually on the results obtained.	According to CBSC Work Programme.	2	

¹¹ SD: Strategic Direction.

¹² SPI: Strategic level Performance Indicator.

3.5.6	CBSC to foster bilateral agreements in order to help satisfy SOLAS V/9.		According to CBSC Work Programme.	2	SPI 3
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Element 3.6 Coordination of Global Surveying and Charting

Objective: To facilitate the achievement of a world-wide quality nautical charting coverage to suit the needs of the mariner in support of safe and efficient navigation through the development of specifications and standards for the production, distribution and updating of cartographic products and supporting publications.

The WEND WG will monitor progress on implementing the WEND principles, in accordance with the relevant decisions of the Conference and in liaison with RHCs. This WG will also assist the IHB in the preparation of reports to IMO and other relevant organizations on availability of ENC. The maintenance of ENC and INT chart schemes and the monitoring or the associated production of ENC and INT charts are also included. The new framework for publication C-55 on the status of hydrographic surveying and nautical charting world-wide will be implemented together with other actions agreed by the Conference to improve the collection, quality and availability of hydrographic data world-wide, monitor and rectify possible deficiencies and shortcomings, cooperate with other international organizations and stakeholders as necessary, and to keep MS informed on progress on this issue. One Director and a PA are involved in the components of this element.

Task	Title	Activities / Deliverables	Comments	SD ¹³	SPI ¹⁴
3.6.1	C-55 Status of Hydrographic Surveying and Nautical Charting World-wide.	A) MS to provide annual update.	Permanent.	2	SPI 3
		B) IHB to implement the new framework for publication C-55 to improve the collection, quality and availability of hydrographic data world-wide, monitor and rectify possible deficiencies and shortcomings, cooperate with other international organizations and stakeholders as necessary, and to keep MS informed on progress on this issue.	To be considered in conjunction with task 3.4.3.		
		C) IHB to report periodically to IMO (NAV and MSC) on the impact of poor bathymetric data availability, datum mis-adjustment problems, and other relevant factors governing the limitations and requirements for improvements in global charting and associated services.	Permanent.		
3.6.2	WEND WG to foster the implementation of the WEND principles, monitor progress and report to IRCC.	A) WG to facilitate the production, distribution and updating of ENC cartographic products ensuring uniform ENC quality and consistency	2013 to 2017 annually	2	SPI 1 SPI 2
		B) WG to facilitate the resolution of gaps and overlaps in ENC coverage	2013 to 2017 annually		
		C) WG to facilitate the promotion of RENC co-operation for the benefit of ENC end-users.	2013 to 2017 annually		

¹³ SD: Strategic Direction.

¹⁴ SPI: Strategic level Performance Indicator.

3.6.3	Maintain and coordinate ENC schemes, consistency and quality.	RHCs to elaborate and maintain adequate ENC schemes in their regions and progress the production and maintenance of ENC.	In accordance with Element 3.1	2	SPI 8
3.6.4	Maintain and coordinate INT Chart Schemes and improve the availability of the INT Chart Series.	RHCs to maintain INT Chart Schemes and progress the production of INT Chart in their regions, in line with ENC production.	Permanent.	2	

Element 3.7 Maritime Safety Information

Objective: To facilitate the efficient provision of MSI to mariners through coordination and the establishment of relevant standards between agencies.

Included under this element are the annual meetings of the WWNWS Sub-Committee and the continuous improvement of coordination of NAVAREAs in liaison with the RHCs and relevant international organizations. In particular, the Sub-Committee will participate and contribute to the IMO work items on the modernization of the GMDSS and the development of the e-navigation implementation plan. Routine review and maintenance of the relevant publications such as S-53 are also included. Members of the WWNWS-SC will contribute to the delivery of the MSI component at relevant courses under the CB programme. One Director and one PA are involved in monitoring this activity.

Task	Title	Activities / Deliverables	Comments	SD ¹⁵	SPI ¹⁶
3.7.1	WWNWS-SC - World-Wide Navigational Warning Service Sub-Committee.	Organize, prepare, attend and report annual WWNWS-SC meetings.	2013 to 2017 annually	2	
3.7.2	WWNWS Document Review Working Group.	Conduct annual meetings of the WWNWS Document Review WG.	2013 to 2017 annually	2	
3.7.3	Maintain and extend the following IHO standards, specifications and publications: -relevant IHO Resolutions in M-3, -S-53.	Provide up-to-date WWNWS documentation.	Permanent.	1	
3.7.4	Liaise with IMO and WMO on the delivery of MSI within the GMDSS.	Ensure the timely provision of adequate MSI to global shipping.	Permanent.	1	
3.7.5	Participate and contribute to the IMO work items on the modernization of the GMDSS and the development of the e-navigation implementation plan.	Improve the delivery and exploitation of MSI to global shipping by taking full advantage of technological developments.	Permanent.	1	

¹⁵ SD: Strategic Direction.

¹⁶ SPI: Strategic level Performance Indicator.

Element 3.8 Ocean Mapping Programme

Objective: To contribute to global ocean mapping programmes through the IHO/IOC General Bathymetric Chart of the Oceans (GEBCO) Project, the International Bathymetric Chart (IBC) Projects and other related international initiatives.

This element includes the meeting of the Guiding Committee and its three sub-committees (SCRUM, SCUFN, TSCOM). Improving the availability of shallow water bathymetry continues to be a high priority in this element. Gathering existing dispersed bathymetric data of Antarctica and the Arctic region is also a key activity to progress. Other tasks include the enhancement and maintenance of the associated publications (B-4, B-6, B-7, B-8, B-9, B-10). GEBCO matters are handled by a Director, three PAs and as many as ten MS representatives who participate in the GEBCO Guiding Committee and its Sub-Committees.

Task	Title	Activities / Deliverables	Comments	SD ¹⁷	SPI ¹⁸
3.8.1	GEBCO Guiding Committee and associated bodies.	Organize, prepare, attend and report annual meetings of relevant GEBCO bodies (including GC, TSCOM, SCUFN, SCRUM and Science Day).	2013 to 2017 annually	1 & 2	
3.8.2	IHO Digital Bathymetry Data Center (DCDB).	Ensure effective operation of the IHO DCDB through monitoring and advising the IHO DCDB operators.	Permanent.	2	
3.8.3	Encourage the contribution of bathymetric data to the IHO DCDB.	A) Identify priority areas for regional mapping.	Permanent.	2 & 4	
		B) Promote data contribution through GEBCO participation in RHCs meetings.			
3.8.4	Maintain IHO bathymetric publications (B-4, B-6, B-7, B-8, B-9, B-10)	A) Develop the on-line function of B-4	Permanent.	1 & 2	
		B) Publications kept current and updated.			
3.8.5	Contribute to outreach and education about ocean mapping.	Increase understanding of the importance of hydrography and interest in following ocean mapping as a career through activities such as: 1) Development of outreach materials (paper maps, brochures, web-based presentations) and educational materials; 2) Production of GEBCO Globes; 3) Printing of GEBCO World Map at various locations in MSs.	Permanent.	3	
3.8.6	GEBCO Web site.	GEBCO Web site kept current and updated regularly.	Permanent.	2 & 3	

¹⁷ SD: Strategic Direction.

¹⁸ SPI: Strategic level Performance Indicator.

3.8.7	Develop short course and course material on compiling digital bathymetric models (DBMs) to be included in GEBCO from a heterogeneous bathymetric source database.	Associated deliverables: -a course curriculum -two one-week workshops held during 2013, where potential course teachers are invited to take part in developing the curriculum. One week in Stockholm, Sweden and one at NGDC in Boulder, Colorado, USA.	2013	2	
3.8.8	Update and enhance the GEBCO Gazetteer (B-8) for internet access.	A) Provide the GEBCO Gazetteer as a web service via a geospatially enabled database.	2013-2015	1 & 2	
		B) Develop and make available public and management on-line interfaces to the Gazetteer.			

ANNEX A
“CAPACITY BUILDING REQUIREMENTS”
(based on information received from the
RHCs)

TABLE OF CONTENTS

Introduction
Proposed CBWP 2013
Proposed CBWP 2014
Proposed CBWP 2015
Proposed CBWP 2016
Proposed CBWP 2017

INTRODUCTION

The following pages are intended to capture the training and development needs for the region in support of the international capacity building initiative. There are a range of programmes and courses available that provide opportunities for hydrographic organizations and their employees. The information provided will enable the IHO Capacity Building Sub-Committee to make informed decisions on training requirements and enable the appropriate training and development opportunities to be appropriately planned. The information provided will help inform future decisions and planning but do not ensure future attendance and acceptance onto a programme. Other training and development needs maybe identified which cannot be matched to the courses listed. These needs can be identified in textual form under "Other" on the following pages so as to ensure all training requirements are articulated and understood.

PROPOSED CBWP 2013

1.- Technical and Advisory Visits

a) High level technical visit to governmental authorities

RHC	MACHC	NIOHC	RSAHC	SWAtHC	SWPHC
Countries	Dominica and St Vincent & Grenadines. Panama	Sudan and Eritrea	Iraq	Bolivia	Samoa, Tonga

b) Technical assessment and advice visit

RHC	EAHC	SWPHC
Countries	Brunei and DPRK	Kiribati, Vanuatu

2.- Technical Workshops, Seminars, Short Courses

RHC	EAHC	MACHC	NIOHC	RSAHC	SAIHC	SWPHC
Phase 1 Skills: MSI course (3 days) plus introduction to the assessment and promulgation of navigational significant data (2 days)	X	X			X	
Basic Hydrographic Survey Course (10 days)	X	X			X	X
Basic ENC and ENC Production course (10 days)	X		X	X		
Law of the Sea Workshop (5 days)		X			X	
MSDI and Database Management (5 days)	X	X			X	
Seabed Classification workshop (5 days)	X					

Module 1 - Marine Cartography of the CAT B Cartographic Course (5 weeks)	X					
Module 2 - Hydrographic Data Processing of the CAT B Cartographic Course (5 weeks)	X					X
Module 3 - Electronic Navigational Charts (ENC) of the CAT B Cartographic Course (5 weeks)	X					

3.- Other

	EAHC	SEPHC	SWAtHC	SWPHC
Technical Workshops on HDP		X	X	
Technical Workshop on S-100	X	X		
Representation at Pacific Islands Maritime Administration (PacMA)				X
National Hydrographic Capability Development				Solomon Islands

PROPOSED CBWP 2014

1.- Technical and Advisory Visits

c) High level technical visit to governmental authorities

RHC	MACHC	NIOHC	SAIHC	SWAtHC
Countries	Nicaragua & Panama	Jordan	Repeat visits of selected coastal states	Paraguay

d) Technical assessment and advice visit

RHC	EAHC
Countries	Vietnam & Cambodia

2.- Technical Workshops, Seminars, Short Courses

RHC	EAHC	MACHC	NIOHC	RSAHC	SAIHC	SWPHC
Phase 1 Skills: MSI course (3 days) plus introduction to the assessment and promulgation of navigational significant data (2 days)	X		X	X		
Basic Hydrographic Survey Course (10 days)	X		X	X		
Basic ENC and ENC Production course (10 days)	X	X			X	
Law of the Sea Workshop (5 days)	X		X			
MSDI and Database Management (5 days)			X	X		
Tides and water level workshop (5 days)	X					X
Module 1 - Marine Cartography of the CAT B Cartographic Course (5 weeks)	X					X

Module 2 - Hydrographic Data Processing of the CAT B Cartographic Course (5 weeks)	X					
Module 3 - Electronic Navigational Charts (ENC) of the CAT B Cartographic Course (5 weeks)	X					X

3.- Other

RHC	EAHC	SEPHC	SWAtHC	SWPHC
Technical Workshops on Hydro /Carto River Survey		X		
Technical Workshop on Print on Demand			X	
Technical Workshop on S-100	X			
Representation at Pacific Islands Maritime Administration (PacMA)				X
Hydrographic Administration Training Placements within Regional HO				X
National Hydrographic Capability Development				Vanuatu

PROPOSED CBWP 2015

1.- Technical and Advisory Visits

e) High level technical visit to governmental authorities

RHC	MACHC
Countries	Repeat visits of selected coastal states

f) Technical assessment and advice visit

RHC	EAHC	SWAtHC	SWPHC
Countries	Brunei and DPRK	Bolivia	Samoa & Tonga

2.- Technical Workshops, Seminars, Short Courses

RHC	EAHC	MACHC	NIOHC	RSAHC	SAIHC	SEPHC	SWPHC
Phase 1 Skills: MSI course (3 days) plus introduction to the assessment and promulgation of navigational significant data (2 days)	X	X			X		
Basic Hydrographic Survey Course (10 days)	X	X			X		
Basic ENC and ENC Production course (10 days)	X		X	X			
Port and Shallow Water Survey Course (5days)							X
MBES Processing (5 days)						X	

MSDI and Database Management (5 days)	X	X			X		
Tsunami inundation mapping workshop (5 days)	X						
Seabed Classification workshop (5 days)	X						
Module 1 - Marine Cartography of the CAT B Cartographic Course (5 weeks)	X						
Module 2 - Hydrographic Data Processing of the CAT B Cartographic Course (5 weeks)	X						X
Module 3 - Electronic Navigational Charts (ENC) of the CAT B Cartographic Course (5 weeks)	X						

3.- **Other**

RHC	SWAtHC	SWPHC
Technical Workshop on LAT & Dynamical application of Tides to ECDIS	X	
Representation at Pacific Islands Maritime Administration (PacMA)		X
National Hydrographic Capability Development		Cook Islands, Kiribati

PROPOSED CBWP 20161.- **Technical and Advisory Visits**

g) High level technical visit to governmental authorities

RHC	NIOHC	RSAHC	SAIHC
Countries	Repeat visits of selected coastal states	Repeat visits of selected coastal states	Repeat visits of selected coastal states

h) Technical assessment and advice visit

RHC	EAHC	SWAtHC
Countries	Vietnam & Cambodia	Paraguay

2.- **Technical Workshops, Seminars, Short Courses**

RHC	EAHC	MACHC	NIOHC	RSAHC	SAIHC	SWAtHC	SWPHC
Phase 1 Skills: MSI course (3 days) plus introduction to the assessment and promulgation of navigational significant data (2 days)	X		X	X			
Basic Hydrographic Survey Course (10 days)	X		X	X			X
Basic ENC and ENC Production course (10 days)	X	X			X		

Law of the Sea Workshop (5 days)	X			X			
MSDI and Database Management (5 days)	X		X	X		X	
Tides and water level workshop (5 days)	X						
Module 1 - Marine Cartography of the CAT B Cartographic Course (5 weeks)	X						
Module 2 - Hydrographic Data Processing of the CAT B Cartographic Course (5 weeks)	X						
Module 3 - Electronic Navigational Charts (ENC) of the CAT B Cartographic Course (5 weeks)	X						X

3.- Other

RHC	SEPHC	SWAtHC	SWPHC
Technical Workshops on Coastal Survey with Lidar	X		
Technical Workshop on S-100		X	
Representation at Pacific Islands Maritime Administration (PacMA)			X
National Hydrographic Capability Development			Tonga

PROPOSED CBWP 2017

1.- Technical and Advisory Visits

i) High level technical visit to governmental authorities

RHC	MACHC	NIOHC
Countries	Repeat visits of selected coastal states	Repeat visits of selected coastal states

j) Technical assessment and advice visit

RHC	EAHC
Countries	Brunei & DPRK

2.- Technical Workshops, Seminars, Short Courses

RHC	EAHC	MACHC	NIOHC	RSAHC	SAIHC	SWPHC
Phase 1 Skills: MSI course (3 days) plus introduction to the assessment and promulgation of navigationally significant data (2 days)	X	X			X	X
Basic Hydrographic Survey Course (10 days)	X	X			X	
Basic ENC and ENC Production course (10 days)	X		X	X		

Law of the Sea Workshop (5 days)					X	
MSDI and Database Management (5 days)		X			X	
Tsunami inundation mapping workshop (5 days)	X					
Tides and water level workshop (5 days)	X					X
Seabed Classification workshop (5 days)	X					
Module 1 - Marine Cartography of the CAT B Cartographic Course (5 weeks)	X					
Module 2 - Hydrographic Data Processing of the CAT B Cartographic Course (5 weeks)	X					
Module 3 - Electronic Navigational Charts (ENC) of the CAT B Cartographic Course (5 weeks)	X					

3.- **Other**

RHC	SEPHC	SWAtHC	SWPHC
Technical Workshops on Offshore Survey	X		
Technical Workshop on role of HOs on e-Navigation strategy		X	
Representation at Pacific Islands Maritime Administration (PacMA)			X
National Hydrographic Capability Development			Samoa

Note: Programs highlighted in Green all together constitute the IHO Cat “C” Course.

ANNEX B
***CROSS REFERENCE BUDGET CHAPTERS
V/S PROGRAMMES, ELEMENTS AND TASKS***

ANNEX B

CROSS REFERENCE BUDGET CHAPTERS V/S PROGRAMMES, ELEMENTS AND TASKS				
CHAPTER I	ITEM	PROGRAMMES	ELEMENT	TASKS
PERSONNEL COSTS	a	1 to 3	All	All
	b	1 to 3	All	All
	c	1 to 3	All	All
	d	1 to 3	All	All
	e	1 to 3	All	All
	f	1 to 3	All	All
	g	1 to 3	All	All
	h	1 to 3	All	All
	i	1 to 3	All	All
	j	1 to 3	All	All
	k	1 to 3	All	All
	m	1 to 3	All	All
	n	1 to 3	All	All
	o	1	1,5	1.5.2.
p	1	1,5	1.5.1.	
CHAPTER II	ITEM	PROGRAMMES	ELEMENT	TASKS
CURRENT OPERATING COSTS	a	1	1.2-1.5	1.2.5/1.5.5.
	b	1 to 3	All	All
	c	1 to 3	All	All
	d	1 to 3	All	All
	e	1 to 3	All	All
	f	1 to 2	1.2-1.4-1.5	1.2.1.-1.2.2.-1.2.3/1.4.1/1.5.3
			2.2-2.3-2.11	2.2.2-2.2.3/2.3.2/2.11.2
	g	1 to 3	All	All
	h	1	1.3-1.4	1.3.3.-1.3.4./1.4.3.
	i	1 to 3	All	All
	j	3	3.3/3.4/3.5	All
	k	1 to 2	1,1	1.1.1-1.1.2-1.1.3-1.1.4-1.1.5-1.1.6-1.1.7 1.1.8-1.1.9-1.1.10-1.1.11-1.1.12-1.1.13 1.1.14-1.1.15-1.1.16-1.1.17-1.1.18-1.1.19
			2.1-2.2-2.3-2.4-2.5	2.1.1-2.2.1-2.2.5/2.3.1/2.4.1/2.5.1
			2.6-2.7-2.9-2.12	2.6.1/2.7.1/2.9.1/2.12.1
3.0-3.1			3.0.0/3.1.1-3.1.2-3.1.3-3.1.4-3.1.5-3.1.6- 3.1.7-3.1.8-3.1.9-3.1.10-3.1.11-3.1.12 3.1.13-3.1.14-3.1.15-3.1.16-3.1.17-3.1.18	
l	1	3.7-3.8	3.7.1-3.7.2/3.8.1-3.8.2	
m	1 - 3	1,3	1.3.2.	
		1.2/3.7	1.2.3-1.2.4-1.2.7/3.7.3	
CHAPTER III	ITEM	PROGRAMMES	ELEMENT	TASKS
CAPITAL EXPENDITURE	a	1	All	All
	b	1	All	All
	c	1	All	All
	d	1	All	All
CHAPTER IV	ITEM	PROGRAMMES	ELEMENT	TASKS
ALLOCATION TO FUNDS	a	3	3,8	3.8.3-3.8.4-3.8.5-3.8.6-3.8.7-3.8.8
	b	1	All	All
	c	1	1,6	1.6.1-1.6.2
	d	1	All	All
	e	3	3.3/3.4/3.5	3.4.1-3.4.3/3.5.1-3.5.2-3.5.3-3.5.4
	f	1	All	All

ANNEX C
LIST OF TASKS AND TIMEFRAME

PROGRAMME 1 - "CORPORATE AFFAIRS"

Element 1.1 Cooperation with International Organizations and participation in relevant meetings

Task 1.1.1	Antarctic Treaty Consultative Meeting (ATCM)	2013	2014	2015	2016	2017
Task 1.1.2	Comité International Radio Maritime (CIRM)	2013	2014	2015	2016	2017
Task 1.1.3	Council of Managers of National Antarctic Programs (COMNAP)	2013	2014	2015	2016	2017
Task 1.1.4	European Union Initiatives (such as INSPIRE)	2013(2)	2014(2)	2015(2)	2016(2)	2017(2)
Task 1.1.5	International Federation of Surveyors (FIG)	2013	-----	2015	-----	2017
Task 1.1.6	International Federation of Hydrographic Societies (IFHS)	2013	2014	2015	2016	2017
Task 1.1.7	International Association of Antarctic Tour Operators (IAATO)	2013	2014	2015	2016	2017
Task 1.1.8	IALA (such as the e-NAV Committee)	2013(2)	2014(2)	2015(2)	2016(2)	2017(2)
Task 1.1.9	International Association of Ports and Harbours (IAPH)	2013	-----	2015	-----	2017
Task1.1.10	International Cartographic Association (ICA) (such as ICA Commission on Geoinformation Infrastructures and Standards)	2013	-----	2015	-----	2017
Task1.1.11	International Electrotechnical Commission (IEC) (such as IEC Technical Committee 80)	2013(2)	2014(2)	2015(2)	2016(2)	2017(2)
Task1.1.12	International Maritime Organization (IMO) Assemblies, Councils, COMSAR, MSC, NAV, TCC.	2013(7)	2014(7)	2015(7)	2016(7)	2017(7)
Task1.1.13	International Maritime Pilots' Association (IMPA)	2013	2014	2015	2016	2017
Task1.1.14	Intergovernmental Oceanographic Commission (IOC) of UNESCO, Assemblies, Councils or specialized WGs.	2013(2)	2014(2)	2015(2)	2016(2)	2017(2)
Task1.1.15	International Standards Organization (ISO) (such as ISO Technical Committee 211)	2013(2)	2014(2)	2015(2)	2016(2)	2017(2)
Task1.1.16	Joint Board of Geospatial Information Societies (JB-GIS)	2013	2014	2015	2016	2017

Task1.1.17	NATO (such as DGIWG)	2013	2014	2015	2016	2017
Task1.1.18	UN (such as UNICPOLOS, CGGIM)	2013(2)	2014(2)	2015(2)	2016(2)	2017(2)
Task1.1.19	World Meteorological Organization (WMO)	2013	2014	2015	2016	2017
Task1.1.20	Other organizations when their agendas have relevance to the programme of the IHO, such as : Group on Earth Observation (GEO); Pan-American Institute of Geography and History (PAIGH); Port Management Association West and Central Africa (PMAWCA) & Maritime Organizations of West and Central Africa (MOCWA) or the Scientific Committee on Antarctic Research (SCAR).	-----	-----	-----	-----	-----

Element 1.2 Information Management

Task 1.2.1	Maintain and extend the IHO website using commercial contract support.	2013	2014	2015	2016	2017
Task 1.2.2	Develop IHO GIS and webserver and web mapping services in support of RHCs, ENC availability, INT chart coordination, C-55 and other related activities, including using commercial contract support	2013	2014	2015	2016	2017
Task 1.2.3	Develop and maintain IHB desk-top and in-house publishing facilities	2013	2014	2015	2016	2017
Task 1.2.4	Compile and publish the following documents that are not allocated to a specific IHO body: P-5 – IHO Yearbook P-7 – IHO Annual Report P-6 – Reports of IHC M-3 – Technical and Administrative Resolutions	2013	2014	2015	2016	2017
Task 1.2.5	Maintain and extend IHB Admin IT infrastructure	2013	2014	2015	2016	2017
Task 1.2.6	Communication between the IHB and Member States through Circular Letters.	2013	2014	2015	2016	2017
Task 1.2.7	IHB Technical Library – incorporate new material.	2013	2014	2015	2016	2017

Element 1.3 Public Relations

Task 1.3.1	Maintain relationships with the Government of Monaco and the diplomatic corps accredited in Monaco.	2013	2014	2015	2016	2017
Task 1.3.2	Compile and publish P-1 – <i>International Hydrographic Review</i> in collaboration with IHR editor	2013	2014	2015	2016	2017
Task 1.3.3	World Hydrography Day – Preparation of the theme's material and social celebration event in Monaco	2013	2014	2015	2016	2017
Task 1.3.4	General Public Relation support. Representation expenses.	2013	2014	2015	2016	2017

Element 1.4 Work Programme & Budget, Strategic Plan and Performance Monitoring

Task 1.4.1	Implement and administer processes for program management, performance monitoring and risk assessment, including the acquisition and operation of suitable business software tools	2013	2014	2015	2016	2017
Task 1.4.2	Execute the IHO Work Program and Budget approved by the XVIII th IHC, monitoring its progress and adopting the necessary adjustment according to the circumstances.	2013	2014	2015	2016	2017
Task 1.4.3	Conduct biennial IHO stakeholders' forums	2013	-----	2015	-----	2017

Element 1.5 IHB Management

Task 1.5.1	Maintain, update and develop necessary procedures to facilitate and improve effectiveness of the general and permanent Finance and Administrative work.	2013	2014	2015	2016	2017
Task 1.5.2	Provide in-house translation service English/French and French/English in support of the IHO WP. Include Spanish translations as much as possible in accordance with relevant IHO Resolutions.	2013	2014	2015	2016	2017

Task 1.5.3	Engage contract support to supplement maintenance and development of technical standards beyond the resources or competence of the IHB or the IHO WGs, including: - Translation - Technical editing - Cataloguing the IHO working document archive	2013	2014	2015	2016	2017
Task 1.5.4	Monitor and maintain the Staff Regulations and the Job Descriptions of the IHB Staff in step with the evolution of the IHO work programme and IHO requirements.	2013	2014	2015	2016	2017
Task 1.5.5	Maintain the IHB premises as required as the occupant. Maintain operational hardware, software and furniture, carry out renovations or modifications as requirements arise.	2013	2014	2015	2016	2017

Element 1.6 International Hydrographic Conferences or Future Assemblies

Task 1.6.1	Organize the 5 th Extraordinary International Hydrographic Conference or Extraordinary International Hydrographic Assembly in the event the Protocol of Amendment to the IHO Convention has entered into force.	----	2014 ??	----	----	----
Task 1.6.2	Organize the XIX th International Hydrographic Conference or IHO Assembly in the event the Protocol of Amendment to the IHO Convention has entered into force.	----	----	----	2016	2017

PROGRAMME 2 - "HYDROGRAPHIC SERVICES AND STANDARDS"

Element 2.1 Technical Programme Coordination

Task 2.1.1	Conduct annual meetings of HSSC	2013	2014	2015	2016	2017
Task 2.1.2	Provide technical advice and guidance on IHO technical standards, specification and publications	2013	2014	2015	2016	2017

Element 2.2 Hydrographic Data Transfer Standards

Task 2.2.1	Conduct annual and biennial meetings of relevant HSSC WGs dealing with hydrographic data transfer standards	2013	2014	2015	2016	2017
Task 2.2.2	Maintain and extend the relevant IHO standards, specifications and publications, using contract support assistance as appropriate, including: - S-57 IHO Transfer Standard for Digital Hydrographic Data - S-100 IHO Universal Hydrographic Data Model - S-101 ENC Product Specification - S-102 Bathymetric Surface Product Specification - S-58 Recommended ENC Validation Checks - S-65 ENC Production Guidance - S-64 IHO Test Data Sets for ECDI - S-61 Product Specification for Raster Navigational Charts - S-99 Operational Procedures for the Organization and Management of the S-100 Geospatial Information Registry - S-66 Facts about Electronic Charts and Carriage Requirements	2013	2014	2015	2016	2017
Task 2.2.3	Develop and maintain as-yet undefined S-100-based Product Specifications	2013	2014	-----	-----	-----
Task 2.2.4	Maintain and extend S-100 registry	2013	2014	2015	2016	2017
Task 2.2.5	Provide outreach and technical assistance regarding transfer standards	2013	2014	2015	2016	2017

Element 2.3 Nautical Cartography

Task 2.3.1	Conduct annual meetings of relevant HSSC WGs dealing with nautical cartography	2013	2014	2015	2016	2017
Task 2.3.2	Maintain and extend the relevant IHO standards, specifications and publications, using contract support assistance as appropriate, including: <ul style="list-style-type: none"> - S-4 Chart Specifications of the IHO and Regulations for International (INT) Charts <ul style="list-style-type: none"> INT 1 - Symbols, Abbreviations and Terms used on Charts INT 2 - Borders, Graduations, Grids and Linear Scales INT 3 - Use of Symbols and Abbreviations - S-11 Part A - Guidance for the Preparation and Maintenance of INT Chart schemes - S-11 Part B - Catalogue of INT Charts - S-49 Standardization of Mariners' Routeing Guides - Digital data updating related elements of Appendix 1 to S-52 - Guidance on Updating the Electronic Navigational Chart - S-52 and its accompanying Presentation Library - Specifications for Chart Content and Display Aspects of ECDIS - Portrayal related elements of S-101 - ENC Product Specification and other S-100-based Product Specifications 	2013	2014	2015	2016	2017

Element 2.4 Digital Data Protection and Authentication

Task 2.4.1	Conduct annual meetings of relevant HSSC WG dealing with digital data protection and authentication	2013	2014	2015	2016	2017
Task 2.4.2	Maintain and extend the relevant IHO standards, specifications and publications, including: <ul style="list-style-type: none"> - S-63 IHO Data Protection Scheme - Data protection and authentication related elements of S-100 - IHO Universal Hydrographic Data Model and - S-101 - ENC Product Specification 	2013	2014	2015	2016	2017

Element 2.5 Data Quality

Task 2.5.1	Conduct annual meetings of relevant HSSC WG dealing with data quality	2013	2014	2015	2016	2017
Task 2.5.2	Maintain and extend the relevant IHO standards, specifications and publications, including: <ul style="list-style-type: none"> - Data quality related elements of S-57 - IHO Transfer Standard for Digital Hydrographic Data - Data quality related elements of S-52 - Specifications for Chart Content and Display Aspects of ECDIS - Data quality related elements of S-100 - IHO Universal Hydrographic Data Model - S-101 - ENC Product Specification and other S-100-based Product Specifications 	2013	2014	2015	2016	2017

Element 2.6 Nautical Publications

Task 2.6.1	Conduct annual meetings of relevant HSSC WG dealing with nautical publications	2013	2014	2015	2016	2017
Task 2.6.2	Develop, maintain and extend S-10n - Nautical Information Product Specification	2013	2014	2015	2016	2017

Task 2.6.3	Maintain and extend the relevant IHO standards, specifications and publications, including: - IHO Resolutions in M-3 relating to Nautical Publications - S-12 Standardization of List of Lights and Fog Signals	2013	2014	2015	2016	2017
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Element 2.7 Tides and Datums

Task 2.7.1	Conduct annual meetings of relevant HSSC WG dealing with tides and datums	2013	2014	2015	2016	2017
Task 2.7.2	Maintain and extend the relevant IHO standards, specifications and publications, including: - Relevant IHO Resolutions in M-3 - S-60 User's Handbook on Datum Transformations involving WGS 84 - Standard Tidal Constituent List Inventory of Tide Gauges used by Member States	2013	2014	2015	2016	2017
Task 2.7.3	Develop, maintain and extend a Product Specification for digital tide tables	2013	2014	2015	2016	2017
Task 2.7.4	Develop, maintain and extend a Product Specification for the transmission of real-time tidal data	2013	2014	2015	2016	2017
Task 2.7.5	Develop, maintain and extend a Product specification for dynamic tides in ECDIS	2013	2014	2015	2016	2017

Element 2.8 Digital Data Updating

Task 2.8.1	Maintain and extend the relevant IHO standards, specifications and publications, including: - Digital data updating related elements of S-65 - ENC Production Guidance - S-52 Appendix 1 - Guidance on Updating the Electronic Navigational Chart	2013	2014	2015	2016	2017
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Element 2.9 Marine Spatial Data Infrastructures

Task 2.9.1	Conduct annual meetings of relevant HSSC WG dealing with MSDI	2013	2014	2015	2016	2017
Task 2.9.2	Maintain the relevant IHO standards, specifications and publications, including: - C-17 Spatial Data Infrastructures: “The Marine Dimension” - Guidance for Hydrographic Offices	2013	2014	2015	2016	2017

Element 2.10 Hydrographic Data Acquisition and Processing

Task 2.10.1	Conduct annual meetings of relevant HSSC WG dealing with hydrographic data acquisition and processing when WG required	2013	2014	2015	2016	2017
Task 2.10.2	Maintain and extend, when required, the relevant IHO standards, specifications and publications, including: S-44 - IHO Standards for Hydrographic Surveys	2013	2014	2015	2016	2017

Element 2.11 Hydrographic Dictionary

Task 2.11.1	Maintain and extend the IHO Hydrographic Dictionary in English, French and Spanish.	2013	2014	2015	2016	2017
Task 2.11.2	Develop the Spanish language Wiki version of S-32 with commercial contract support	2013	2014	2015	2016	2017

Element 2.12 Hydrographic Aspects of UNCLOS

Task 2.12.1	Organise and prepare ABLOS annual business meetings	2013	2014	2015	2016	2017
Task 2.12.2	Organise and prepare the biennial ABLOS Conferences.	-----	2014	-----	2016	-----
Task 2.12.3	Contribute to the revision of IHO publication C-51-TALOS Manual.	2013	2014	2015	2016	2017

PROGRAMME 3 - "INTER REGIONAL COORDINATION AND SUPPORT"

Element 3.0 Inter Regional Coordination Committee (IRCC)

Task 3.0.0	IRCC - Inter Regional Coordination Committee.	2013	2014	2015	2016	2017

Element 3.1 Cooperation with Member States and attendance at relevant meetings

Task 3.1.1	ARHC - Arctic Region Hydrographic Commission.	2013	2014	2015	2016	2017	
Task 3.1.2	BSHC - Baltic Sea Hydrographic Commission.	2013	2014	2015	2016	2017	
Task 3.1.3	EAHC - East Asia Hydrographic Commission. - Coordinating Meetings - ENC Task Group Meetings - EAHC Conferences.	2013	2014	2015	2016	2017	
		2013	2014	2015	2016	2017	
		-----	-----	2015	2016	-----	
Task 3.1.4	EAtHC - Eastern Atlantic Hydrographic Commission	-----	2014	-----	2016	-----	
Task 3.1.5	MACHC - Meso American and Caribbean Hydrographic Commission.	2013	2014	2015	2016	2017	
Task 3.1.6	MBSHC - Mediterranean and Black Seas Hydrographic Commission	2013	-----	2015	-----	2017	
Task 3.1.7	NHC - Nordic Hydrographic Commission.	2013	2014	2015	2016	2017	
Task 3.1.8	NIOHC - North Indian Ocean Hydrographic Commission.	2013	2014	2015	2016	2017	

Task 3.1.9	NSHC - North Sea Hydrographic Commission	-----	2014	-----	2016	-----	
Task 3.1.10	RSAHC - ROPME Sea Area Hydrographic Commission	2013	-----	2015	-----	2017	
Task 3.1.11	SAIHC - Southern Africa and Islands Hydrographic Commission	2013	2014	2015	2016	2017	
Task 3.1.12	SEPHC - South East Pacific Hydrographic Commission	2013	-----	2015	-----	2017	
Task 3.1.13	SWAtHC - South West Atlantic Hydrographic Commission.	2013	2014	2015	2016	2017	
Task 3.1.14	SWPHC - South West Pacific Hydrographic Commission.	2013	-----	2015	-----	2017	
Task 3.1.15	USCHC - USA and Canada Hydrographic Commission.	2013	2014	2015	2016	2017	
Task 3.1.16	HCA - Hydrographic Commission on Antarctica.	2013	2014	2015	2016	2017	
Task 3.1.17	WEND Working Group	2013	2014	2015	2016	2017	
Task 3.1.18	Industry participation in RHC meetings.	2013	2014	2015	2016	2017	

Element 3.2 Increase participation by non Member States

Task 3.2.1	EAHC - Execute strategy to increase participation of non-Member States in IHO activities and advise them on how to comply with international regulations such as SOLAS V.	2013	2014	2015	2016	2017
Task 3.2.2	EAtHC - Execute strategy to increase participation of non-Member States in IHO activities and advise them on how to comply with international regulations such as SOLAS V.	2013	2014	2015	2016	2017
Task 3.2.3	MACHC - Execute strategy to increase participation of non-Member States in IHO activities and advise them on how to comply with international regulations such as SOLAS V.	2013	2014	2015	2016	2017

Task 3.2.4	MBSHC - Execute strategy to increase participation of non-Member States in IHO activities and advise them on how to comply with international regulations such as SOLAS V.	2013	2014	2015	2016	2017
Task 3.2.5	NIOHC - Execute strategy to increase participation of non-Member States in IHO activities and advise them on how to comply with international regulations such as SOLAS V.	2013	2014	2015	2016	2017
Task 3.2.6	RSAHC - Execute strategy to increase participation of non-Member States in IHO activities and advise them on how to comply with international regulations such as SOLAS V.	2013	2014	2015	2016	2017
Task 3.2.7	SAIHC - Execute strategy to increase participation of non-Member States in IHO activities and advise them on how to comply with international regulations such as SOLAS V.	2013	2014	2015	2016	2017
Task 3.2.8	SEPHC - Execute strategy to increase participation of non-Member States in IHO activities and advise them on how to comply with international regulations such as SOLAS V.	2013	2014	2015	2016	2017
Task 3.2.9	SWAtHC - Execute strategy to increase participation of non-Member States in IHO activities and advise them on how to comply with international regulations such as SOLAS V.	2013	2014	2015	2016	2017
Task 3.2.10	SWPHC - Execute strategy to increase participation of non-Member States in IHO activities and advise them on how to comply with international regulations such as SOLAS V.	2013	2014	2015	2016	2017
Task 3.2.11	RHCs to encourage the approval of pending applications for IHO membership.	2013	2014	2015	2016	2017
Task 3.2.12	RHCs to encourage the ratification of the IHO Convention by approved applicants.	2013	2014	2015	2016	2017

Element 3.3 Capacity Building Management

Task 3.3.1	CBSC - Capacity Building Sub-Committee.	2013	2014	2015	2016	2017
Task 3.3.2	Capacity Building Fund (CB Fund) Management.	2013	2014	2015	2016	2017
Task 3.3.3	Meetings with other organizations, funding agencies, private sector and academia.	2013(2)	2014(2)	2015(2)	2016(2)	2017(2)
Task 3.3.4	IHO Capacity Building Strategy.	2013	2014	2015	2016	2017
Task 3.3.5	Capacity Building Work Programme.	2013	2014	2015	2016	2017
Task 3.3.6	Follow-up of CB activities and initiatives.	2013	2014	2015	2016	2017
Task 3.3.7	IBSC - International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers.	2013	2014	2015	2016	2017
Task 3.3.8	Provide guidance to training institutions.	2013	2014	2015	2016	2017
Task 3.3.9	Maintain IBSC Publications (C-6, C-47, S-5, S-8).	2013	2014	2015	2016	2017

Element 3.4 Capacity Building Assessment

Task 3.4.1	Technical and advisory visits.	2013	2014	2015	2016	2017
Task 3.4.2	Review existing CB procedures and develop new ones.	2013	2014	2015	2016	2017
Task 3.4.3	Enhance publication C-55	2013	2014	2015	-----	-----

Element 3.5 Capacity Building Provision

Task 3.5.1	Raise Awareness on the Importance of Hydrography.	2013	2014	2015	2016	2017
Task 3.5.2	Technical Workshops, Seminars, Short Courses.	2013	2014	2015	2016	2017
Task 3.5.3	Hydrographic and Nautical Cartography Courses.	2013	2014	2015	2016	2017
Task 3.5.4	On the Job Training (ashore / on board).	2013	2014	2015	2016	2017
Task 3.5.5	Marine/Maritime Projects.	2013	2014	2015	2016	2017
Task 3.5.6	CBSC to foster bilateral agreements in order to help satisfy SOLAS V/9.	2013	2014	2015	2016	2017

Element 3.6 Coordination of Global Surveying and Charting

Task 3.6.1	C-55 Status of Hydrographic Surveying and Nautical Charting World-wide.	2013	2014	2015	2016	2017
Task 3.6.2	WEND WG to foster the implementation of the WEND principles, monitor progress and report to IRCC.	2013	2014	2015	2016	2017
Task 3.6.3	Maintain and coordinate ENC schemes, consistency and quality.	2013	2014	2015	2016	2017
Task 3.6.4	Maintain and coordinate INT Chart Schemes and improve the availability of the INT Chart Series.	2013	2014	2015	2016	2017

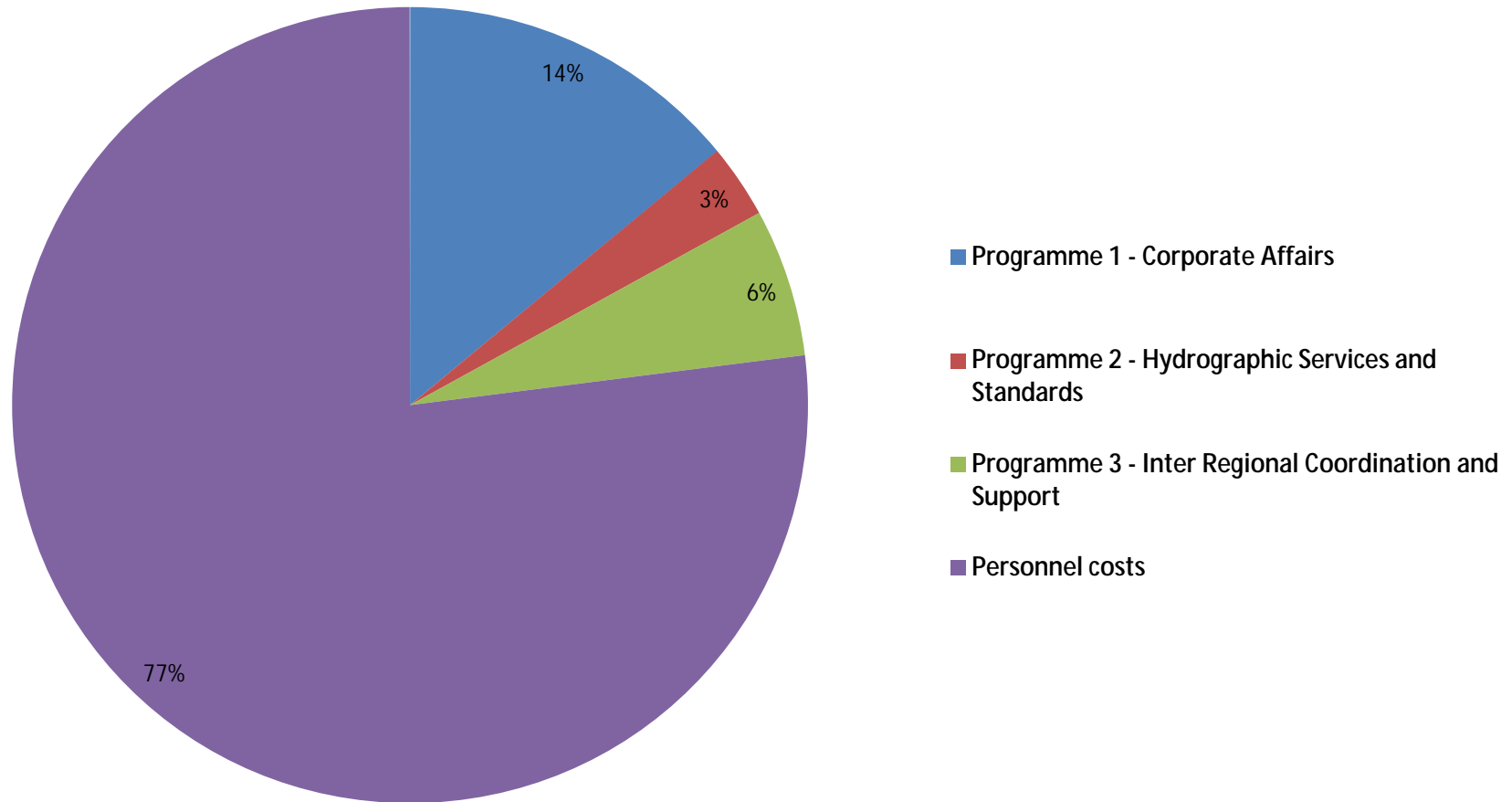
Element 3.7 Maritime Safety Information

Task 3.7.1	WWNWS-SC - World-Wide Navigational Warning Service Sub-Committee.	2013	2014	2015	2016	2017
Task 3.7.2	WWNWS Document Review Working Group.	2013	2014	2015	2016	2017
Task 3.7.3	Maintain and extend the following IHO standards, specifications and publications: -relevant IHO Resolutions in M-3, -S-53.	2013	2014	2015	2016	2017
Task 3.7.4	Liaise with IMO and WMO on the delivery of MSI within the GMDSS.	2013	2014	2015	2016	2017
Task 3.7.5	Participate and contribute to the IMO work items on the modernization of the GMDSS and the development of the e-navigation implementation plan.	2013	2014	2015	2016	2017

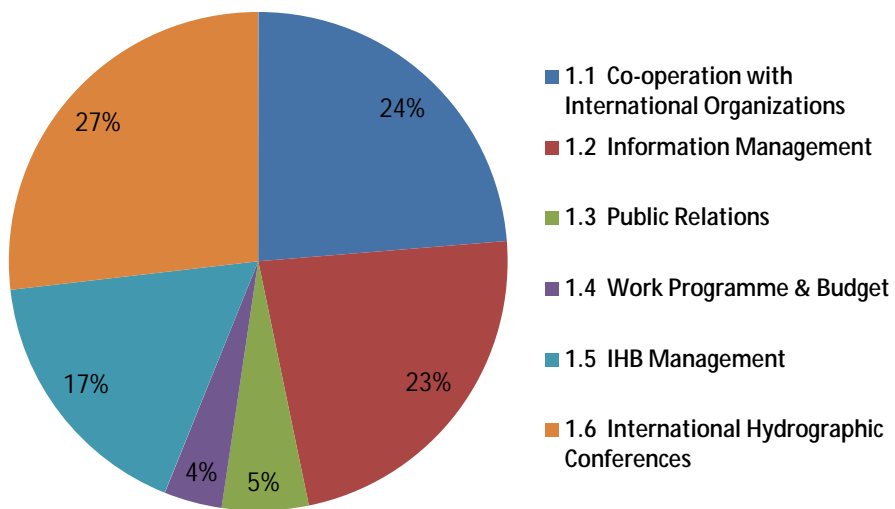
Element 3.8 Ocean Mapping Programme

Task 3.8.1	GEBCO Guiding Committee and associated bodies.	2013(3)	2014(3)	2015(3)	2016(3)	2017(3)
Task 3.8.2	IHO Digital Bathymetry Data Center (DCDB).	2013	-----	2015	-----	2017
Task 3.8.3	Encourage the contribution of bathymetric data to the IHO DCDB.	2013	2014	2015	2016	2017
Task 3.8.4	Maintain IHO bathymetric publications (B-4, B-6, B-7, B-8, B-9, B-10)	2013	2014	2015	2016	2017
Task 3.8.5	Contribute to outreach and education about ocean mapping.	2013	2014	2015	2016	2017
Task 3.8.6	GEBCO Web site.	2013	2014	2015	2016	2017
Task 3.8.7	Develop short course and course material on compiling digital bathymetric models (DBMs) to be included in GEBCO from a heterogeneous bathymetric source database.	2013	-----	-----	-----	-----
Task 3.8.8	Update and enhance the GEBCO Gazetteer (B-8) for internet access.	2013	2014	2015	-----	-----

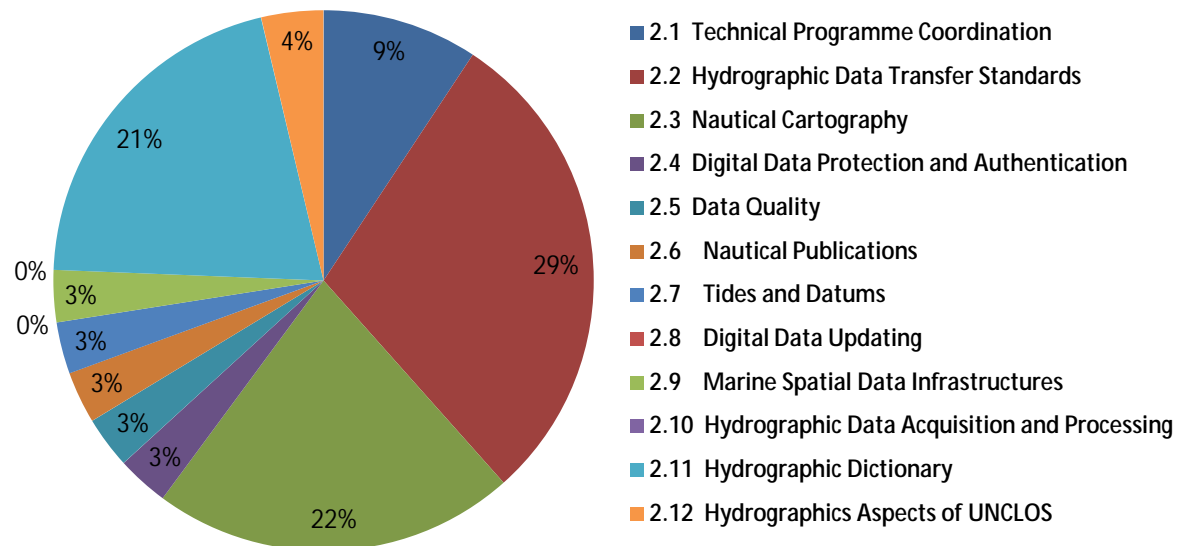
TOTAL EXPENDITURE 15 035 597



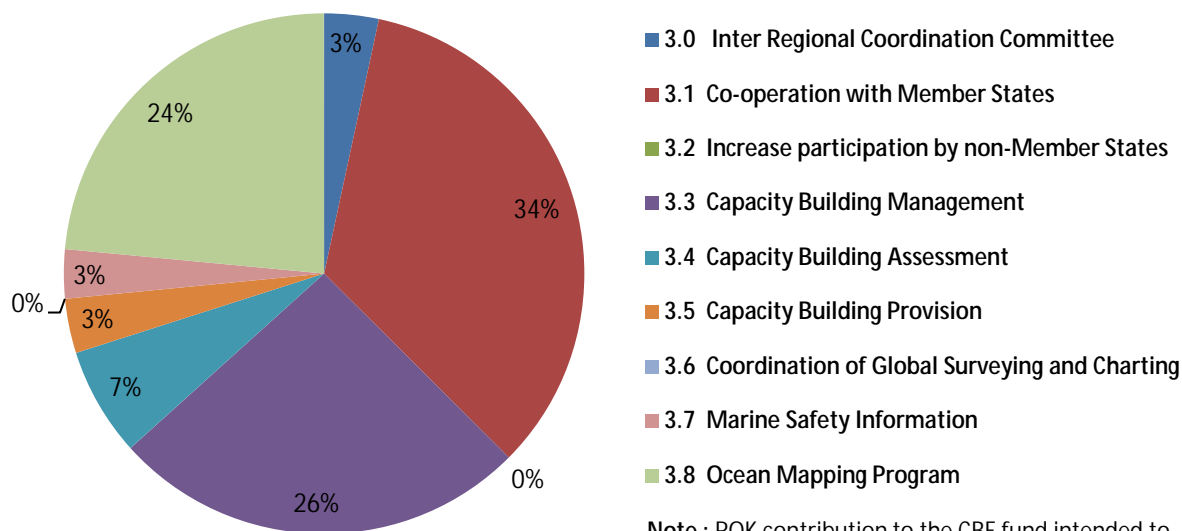
Programme 1 - Corporate Affairs



Programme 2 - Hydrographic Services and Standards



Programme 3 - Inter Regional Coordination and Support



Note : ROK contribution to the CBF fund intended to support programmes 3.4 and 3.5 has not been included

PROPOSED IHO 2013 WORK PROGRAMME

Submitted by the IHB Directing Committee

The IHO 2013 Work Programme is based on the Proposed IHO 5- Year Work Programme for the Period 2013- 2017 (CONF.18/REP/01). This document is a sub-set of the indicated document and its purpose is to identify in a friendly way the activities programmed to be executed during 2013.

The attached spread sheet in Excel follows the three Programmes and the corresponding Elements.

TASK	TITLE	COMMENTS	STRATEGIC DIRECTIONS
PROGRAMME 1 – “CORPORATE AFFAIRS”			
Element 1.1 Co-operation with International Organizations and participation in relevant meetings			1 & 3
Task 1.1.1	Antarctic Treaty Consultative Meeting (ATCM)		
Task 1.1.2	Comité International Radio Maritime (CIRM)		
Task 1.1.3	Council of Managers of National Antarctic Programs (COMNAP)		
Task 1.1.4	European Union Initiatives (such as INSPIRE)		
Task 1.1.5	International Federation of Surveyors (FIG)		
Task 1.1.6	International Federation of Hydrographic Societies (IFHS)		
Task 1.1.7	International Association of Antarctic Tour Operators (IAATO)		
Task 1.1.8	IALA (such as the e-NAV Committee)		
Task 1.1.9	International Association of Ports and Harbours (IAPH)		
Task 1.1.10	International Cartographic Association (ICA) (such as ICA Commission on Geoinformation Infrastructures and Standards)		
Task 1.1.11	International Electrotechnical Commission (IEC) (such as IEC Technical Committee 80)		
Task 1.1.12	International Maritime Organization (IMO) Assemblies, Councils, COMSAR, MSC, NAV, TCC.		
Task 1.1.13	International Maritime Pilots' Association (IMPA)		
Task 1.1.14	Intergovernmental Oceanographic Commission (IOC) of UNESCO, Assemblies, Councils or specialized WGs.		
Task 1.1.15	International Standards Organization (ISO) (such as ISO Technical Committee 211)		
Task 1.1.16	Joint Board of Geospatial Information Societies (JB-GIS)		
Task 1.1.17	NATO (such as DGIWG)		
Task 1.1.18	UN (such as UNICPOLOS, CGGIM)		
Task 1.1.19	World Meteorological Organization (WMO)		
Task 1.1.20	Other organizations when their agendas have relevance to the programme of the IHO, such as : Group on Earth Observation (GEO); Pan-American Institute of Geography and History (PAIGH); Port Management Association West and Central Africa (PMAWCA) & Maritime Organizations of West and Central Africa (MOCWA) or the Scientific Committee on Antarctic Research (SCAR).		

Element 1.2 Information Management			1 & 4
Task 1.2.1	Maintain and extend the IHO website using commercial contract support.		
Task 1.2.2	Develop IHO GIS and webserver and web mapping services in support of RHCs, ENC availability, INT chart coordination, C-55 and other related activities, including using commercial contract support.		
Task 1.2.3	Develop and maintain IHB desk-top and in-house publishing facilities		
Task 1.2.4	Compile and publish the following documents that are not allocated to a specific IHO body:		
	P-5 – IHO Yearbook		
	P-7 – IHO Annual Report		
	M-3 – Technical and Administrative Resolutions		
Task 1.2.5	Maintain and extend IHB Admin IT infrastructure		
Task 1.2.6	Communication between the IHB and Member States through Circular Letters		
Task 1.2.7	IHB Technical Library – incorporate new material		
Element 1.3 Public Relations			3
Task 1.3.1	Maintain relationships with the Government of Monaco and the diplomatic corps accredited in Monaco		
Task 1.3.2	Compile and publish P-1 – <i>International Hydrographic Review</i> in collaboration with IHR editor		
Task 1.3.3	World Hydrography Day – Preparation of the theme's material and social celebration event in Monaco		
Task 1.3.4	General Public Relation support. Representation expenses		
Element 1.4 Work Programme & Budget, Strategic Plan and Performance Monitoring			1
Task 1.4.1	Implement and administer processes for programme management, performance monitoring and risk assessment, including the acquisition and operation of suitable business software tools.		
Task 1.4.2	Execute the IHO Work Programme and Budget approved by the XVIIIth IHC, monitoring its progress and adopting the necessary adjustment according to the circumstances.		
Task 1.4.3	Conduct biennial IHO stakeholders' forums		
Element 1.5 IHB Management			1
Task 1.5.1	Maintain, update and develop necessary procedures to facilitate and improve effectiveness of the general and permanent Finance and Administrative work.		
Task 1.5.2	Provide in-house translation service English/French and French/English in support of the IHO WP. Include Spanish translations as much as possible in accordance with relevant IHO Resolutions.		

Task 1.5.3	Engage contract support to supplement maintenance and development of technical standards beyond the resources or competence of the IHB or the IHO WGs, including: - Translation - Technical editing - Cataloguing the IHO working document archive		
Task 1.5.4	Monitor and maintain the Staff Regulations and the Job Descriptions of the IHB Staff in step with the evolution of the IHO work programme and IHO requirements.		
Task 1.5.5	Maintain the IHB premises as required as the occupant. Maintain operational hardware, software and furniture, carry out renovations or modifications as requirements arise.		
PROGRAMME 2 – “Hydrographic Services and Standards”			
Element 2.1 Technical Programme Coordination			2
Task 2.1.1	Conduct annual meetings of HSSC		
Task 2.1.2	Provide technical advice and guidance on IHO technical standards, specification and publications		
Element 2.2 Hydrographic Data Transfer Standards			3 & 4
Task 2.2.1	Conduct annual and biennial meetings of relevant HSSC WGs dealing with hydrographic data transfer standards		
Task 2.2.2	Maintain and extend the relevant IHO standards, specifications and publications, using contract support assistance as appropriate, including:		
	- S-57 IHO Transfer Standard for Digital Hydrographic Data		
	- S-100 IHO Universal Hydrographic Data Model		
	- S-101 ENC Product Specification		
	- S-102 Bathymetric Surface Product Specification		
	- S-58 Recommended ENC Validation Checks		
	- S-65 ENC Production Guidance		
	- S-64 IHO Test Data Sets for ECDIS		
	- S-61 Product Specification for Raster Navigational Charts		
	- S-99 Operational Procedures for the Organization and Management of the S-100 Geospatial Information Registry		
- S-66 Facts about Electronic Charts and Carriage Requirements			
Task 2.2.3	Develop and maintain as-yet undefined S-100-based Product Specifications		

Task 2.2.4	Maintain and extend S-100 registry		
Task 2.2.5	Provide outreach and technical assistance regarding transfer standards		
Element 2.3 Nautical Cartography			2
Task 2.3.1	Conduct annual meetings of relevant HSSC WGs dealing with nautical cartography		
Task 2.3.2	Maintain and extend the relevant IHO standards, specifications and publications, using contract support assistance as appropriate, including:		
	- S-4 Chart Specifications of the IHO and Regulations for International (INT) Charts		
	INT 1 - Symbols, Abbreviations and Terms used on Charts		
	INT 2 - Borders, Graduations, Grids and Linear Scales		
	INT 3 - Use of Symbols and Abbreviations		
	- S-11 Part A - Guidance for the Preparation and Maintenance of INT Chart schemes		
	- S-11 Part B - Catalogue of INT Charts		
	- S-49 Standardization of Mariners' Routeing Guides		
	- Digital data updating related elements of Appendix		
	1 to S-52 - Guidance on Updating the Electronic Navigational Chart		
- S-52 and its accompanying Presentation Library - Specifications for Chart Content and Display Aspects of ECDIS			
- Portrayal related elements of S-101 - ENC Product Specification and other S-100-based Product Specifications			
Element 2.4 Digital Data Protection and Authentication			2
Task 2.4.1	Conduct annual meetings of relevant HSSC WG dealing with digital data protection and authentication		
Task 2.4.2	Maintain and extend the relevant IHO standards, specifications and publications, including:		
	- S-63 IHO Data Protection Scheme		
	- Data protection and authentication		
	- related elements of S-100 - IHO Universal Hydrographic Data Model and		
- S-101 - ENC Product Specification			

Element 2.5 Data Quality			2
Task 2.5.1	Conduct annual meetings of relevant HSSC WG dealing with data quality		
Task 2.5.2	Maintain and extend the relevant IHO standards, specifications and publications, including:		
	- Data quality related elements of S-57 - IHO Transfer Standard for Digital Hydrographic Data		
	- Data quality related elements of S-52 - Specifications for Chart Content and Display Aspects of ECDIS		
	- Data quality related elements of S-100 - IHO Universal Hydrographic Data Model		
	- S-101 - ENC Product Specification and other S-100-based Product Specifications		
Element 2.6 Nautical Publications			2
Task 2.6.1	Conduct annual meetings of relevant HSSC WG dealing with nautical publications		
Task 2.6.2	Develop, maintain and extend S-10n - Nautical Information Product Specification		
Task 2.6.3	Maintain and extend the relevant IHO standards, specifications and publications, including:		
	- IHO Resolutions in M-3 relating to Nautical Publications		
	- S-12 Standardization of List of Lights and Fog Signals		
Element 2.7 Tides and Datums			2
Task 2.7.1	Conduct annual meetings of relevant HSSC WG dealing with tides and datums		
Task 2.7.2	Maintain and extend the relevant IHO standards, specifications and publications, including:		
	- Relevant IHO Resolutions in M-3		
	- S-60 User's Handbook on Datum Transformations involving WGS 84		
	- Standard Tidal Constituent List		
	- Inventory of Tide Gauges used by Member States		
Task 2.7.3	Develop, maintain and extend a Product Specification for digital tide tables		
Task 2.7.4	Develop, maintain and extend a Product Specification for the transmission of real-time tidal data		
Task 2.7.5	Develop, maintain and extend a Product specification for dynamic tides in ECDIS		

Element 2.8 Digital Data Updating			2
Task 2.8.1	Maintain and extend the relevant IHO standards, specifications and publications, including:		
	- Digital data updating related elements of S-65		
	- ENC Production Guidance		
	- S-52 Appendix 1 - Guidance on Updating the Electronic Navigational Chart		
Element 2.9 Marine Spatial Data Infrastructures			2 & 4
Task 2.9.1	Conduct annual meetings of relevant HSSC WG dealing with MSDI		
Task 2.9.2	Maintain the relevant IHO standards, specifications and publications, including:		
	- C-17 Spatial Data Infrastructures: "The Marine Dimension" - Guidance for Hydrographic Offices		
Element 2.10 Hydrographic Data Acquisition and Processing			2
Task 2.10.1	Conduct annual meetings of relevant HSSC WG dealing with hydrographic data acquisition and processing when WG required		
Task 2.10.2	Maintain and extend, when required, the relevant IHO standards, specifications and publications, including:		
	S-44 - IHO Standards for Hydrographic Surveys		
Element 2.11 Hydrographic Dictionary			2
Task 2.11.1	Maintain and extend the IHO Hydrographic Dictionary in English, French and Spanish.		
Task 2.11.2	Develop the Spanish language Wiki version of S-32 with commercial contract support		
Element 2.12 Hydrographic Aspects of UNCLOS			2 & 3 & 4
Task 2.12.1	Organise and prepare ABLOS annual business meetings		
Task 2.12.2	Organise and prepare the biennial ABLOS Conferences.		
Task 2.12.3	Contribute to the revision of IHO publication C-51- TALOS Manual.		
PROGRAMME 3 " Inter Regional Coordination and Support"			
Element 3.0 Inter Regional Coordination Committee (IRCC)			1 & 2
Task 3.0.0	IRCC - Inter Regional Coordination Committee. A) Organize, prepare, attend and report (annual) IRCC meetings. B) Support the IHB to implement the planning mechanism annually and at the end of each 5-year (3-year) cycle. C) Contribute to the IHO Annual Report. D) Update and implement the IRCC Work Programme.		

Element 3.1 Cooperation with Member States and attendance at relevant meetings			1 & 2
3.1.1	ARHC – Arctic Region Hydrographic Commission. Organize, prepare, attend and report.		
3.1.2	BSHC - Baltic Sea Hydrographic Commission. Organize, prepare, attend and report.		
3.1.3	EAHC - East Asia Hydrographic Commission. Organize, prepare attend and report a) coordinating Meetings and b) ENC Task Group Meetings		
3.1.5	MACHC - Meso American and Caribbean Hydrographic Commission. Organize, prepare, attend and report.		
3.1.6	MBSHC - Mediterranean and Black Seas Hydrographic Commission. Organize, prepare, attend and report.		
3.1.7	NHC - Nordic Hydrographic Commission. Organize, prepare, attend and report.		
3.1.8	NIOHC - North Indian Ocean Hydrographic Commission. Organize, prepare, attend and report.		
3.1.10	RSAHC - ROPME Sea Area Hydrographic Commission. Organize, prepare, attend and report.		
3.1.11	SAIHC - Southern Africa and Islands Hydrographic Commission. Organize, prepare, attend and report.		
3.1.12	SEPHC - South East Pacific Hydrographic Commission. Organize, prepare, attend and report.		
3.1.13	SWAtHC - South West Atlantic Hydrographic Commission. Organize, prepare, attend and report.		
3.1.14	SWPHC - South West Pacific Hydrographic Commission. Organize, prepare, attend and report.		
3.1.15	USCHC - USA and Canada Hydrographic Commission. Organize, prepare, attend and report.		
3.1.16	HCA - Hydrographic Commission on Antarctica. A) Organize, prepare, attend and report (annual) HCA meetings. B) HCA to conduct a risk assessment for the Antarctic region and develop a Work Program to improve Antarctic charting.		

3.1.17	WEND Working Group. Report on the work by correspondence and when necessary prepare, attend and report WEND WG meetings.		
3.1.18	Industry participation in RHC meetings.	To be considered on a case by case basis in conjunction with tasks 3.1.1 to 3.1.15.	
Element 3.2 Increase participation by non Member States			1 & 3
3.2.1	EAHC - Execute strategy to increase participation of non-Member States in IHO activities and advise them on how to comply with international regulations such as SOLAS V.		
3.2.2	EAtHC - Execute strategy to increase participation of non-Member States in IHO activities and advise them on how to comply with international regulations such as SOLAS V. A) Maintain contact with pending applicants in the region to encourage the ratification of the IHO Convention. B) Maintain contact with suspended Member State in the region to encourage its re-insertion in IHO.		
3.2.3	MACHC - Execute strategy to increase participation of non-Member States in IHO activities and advise them on how to comply with international regulations such as SOLAS V. Contact suspended Member State in the region to encourage its re-insertion in IHO		
3.2.4	MBSHC - Execute strategy to increase participation of non-Member States in IHO activities and advise them on how to comply with international regulations such as SOLAS V.		
3.2.5	NIOHC - Execute strategy to increase participation of non-Member States in IHO activities and advise them on how to comply with international regulations such as SOLAS V.		
3.2.6	RSAHC - Execute strategy to increase participation of non-Member States in IHO activities and advise them on how to comply with international regulations such as SOLAS V.		
3.2.7	SAIHC - Execute strategy to increase participation of non-Member States in IHO activities and advise them on how to comply with international regulations such as SOLAS V.		
3.2.8	SEPHC - Execute strategy to increase participation of non-Member States in IHO activities and advise them on how to comply with international regulations such as SOLAS V. Continue the efforts to include Panama as Observer Country to the Commission.		

3.2.9	SWAtHC - Execute strategy to increase participation of non-Member States in IHO activities and advise them on how to comply with international regulations such as SOLAS V.		
3.2.10	SWPHC - Execute strategy to increase participation of non-Member States in IHO activities and advise them on how to comply with international regulations such as SOLAS V.		
3.2.11	RHCs to encourage the approval of pending applications for IHO membership.		
3.2.12	RHCs to encourage the ratification of the IHO Convention by approved applicants.		
Element 3.3 Capacity Building Management			1 & 4
3.3.1	CBSC - Capacity Building Sub-Committee. A) Organize, prepare, conduct and report annual CBSC meetings. B) Follow-up the coordination required to execute the action lists agreed. C) Keep IHO publication M-2 "National Maritime Policies and Hydrographic Services" duly updated.		
3.3.2	Capacity Building Fund (CB Fund) Management. IHB to administer the CB Fund in conformity with IHO Resolutions 4 to 7/2004 as amended and report to MSs on its use and status through the IHO Annual Report. Development and maintenance of a CB Management system.		
3.3.3	Meetings with other organizations, funding agencies, private sector and academia.		
3.3.4	IHO Capacity Building Strategy. CBSC to keep the IHO Capacity Building Strategy updated. At each CBSC meeting, the Sub-Committee is to review the Strategy in the light of new elements, update it accordingly and display it in the IHO website.		
3.3.5	Capacity Building Work Programme. a) CBSC to study the CB needs presented to the CBSC by the RHCs, to foster the sharing of lessons learned and to help RHCs to develop best practices. b) CBSC to develop and propose an annual IHO Capacity Building Work Program (CBWP) to be included in the general IHO WP. c) CBSC to maintain and control the execution of the approved CBWP.		

3.3.6	Follow-up of CB activities and initiatives. a) CBSC to follow-up the CB activities and initiatives, especially those for which the CB Fund and MSs have contributed. b) To study and install measures to improve the technical work with the Management Plan, i.e. developing a database, aiming at reducing the administrative work.		
3.3.7	IBSC - International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers. A) Prepare, attend and report annual IBSC meetings. B) Update and implement the IBSC Work Programme. C) Manage the IBSC Fund and report to IHO		
3.3.8	Provide guidance to training institutions.		
3.3.9	Maintain IBSC Publications (C-6, C-47, S-5, S-8). 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.		
Element 3.4 Capacity Building Assessment			3 & 4
3.4.1	Technical and advisory visits. RHCs, with the support of the CBSC Chair and IHB, to establish appropriate teams of experts and to schedule and undertake Technical and Advisory Visits to assess the status of hydrography, cartography and aids to navigation in accordance with the IHO CBWP.	According to CBSC Work Programme and CB Fund.	
3.4.2	Review existing CB procedures and develop new ones.		
3.4.3	Enhance publication C-55. IHB with the support of the RHCs, CBSC and GGC to develop a new framework for C-55.		
Element 3.5 Capacity Building Provision			2 & 3 & 4
3.5.1	Raise Awareness on the Importance of Hydrography.	According to CBSC Work Programme and CB Fund.	
3.5.2	Technical Workshops, Seminars, Short Courses.	According to CBSC Work Programme and CB Fund.	

3.5.3	Hydrographic and Nautical Cartography Courses. IHB, in conjunction with IBSC and CBSC, to encourage the development and delivery of new Hydrographic and Nautical Cartography Programs, including the establishment of new Hydrographic Schools where that regional capacity does not exist. Report to the IHO on the results.		
3.5.4	On the Job Training (ashore / on board). CBSC, with IHB support, to investigate “on-the-job training opportunities” ashore and on board (ships of opportunity).		
3.5.5	Marine/Maritime Projects. IHB, with the support of CBSC and RHCs, to ensure awareness of multilateral or bilateral projects with hydrographic and/or cartographic components, and to provide advice to governments, project managers and funding agencies on the importance of including a hydrographic Capacity Building Component. Report to IHO annually on the results obtained.		
3.5.6	CBSC to foster bilateral agreements in order to help satisfy SOLAS V/9.		
Element 3.6 Coordination of Global Surveying and Charting			2
3.6.1	C-55 Status of Hydrographic Surveying and Nautical Charting World-wide. A) MS to provide annual update. B) IHB to implement the new framework for publication C-55 to improve the collection, quality and availability of hydrographic data world-wide, monitor and rectify possible deficiencies and shortcomings, cooperate with other international organizations and stakeholders as necessary, and to keep MS informed on progress on this issue.C) IHB to report periodically to IMO (NAV and MSC) on the impact of poor bathymetric data availability, datum mis-adjustment problems, and other relevant factors governing the limitations and requirements for improvements in global charting and associated services.		
3.6.2	WEND WG to foster the implementation of the WEND principles, monitor progress and report to IRCC. A) WG to facilitate the production, distribution and updating of ENC cartographic products ensuring uniform ENC quality and consistency. B) WG to facilitate the resolution of gaps and overlaps in ENC coverage. C) WG to facilitate the promotion of RENC co-operation for the benefit of ENC end-users.		
3.6.3	Maintain and coordinate ENC schemes, consistency and quality. RHCs to elaborate and maintain adequate ENC schemes in their regions and progress the production and maintenance of ENC.		

3.6.4	Maintain and coordinate INT Chart Schemes and improve the availability of the INT Chart Series. RHCs to maintain INT Chart Schemes and progress the production of INT Chart in their regions, in line with ENC production.		
Element 3.7 Maritime Safety Information			1 & 2
3.7.1	WWNWS-SC - World-Wide Navigational Warning Service Sub-Committee. Organize, prepare, attend and report annual WWNWS-SC meetings.		
3.7.2	WWNWS Document Review Working Group. Conduct annual meetings of the WWNWS Document Review WG.		
3.7.3	Maintain and extend the following IHO standards, specifications and publications: -relevant IHO Resolutions in M-3, -S-53.		
3.7.4	Liaise with IMO and WMO on the delivery of MSI within the GMDSS.		
3.7.5	Participate and contribute to the IMO work items on the modernization of the GMDSS and the development of the e-navigation implementation plan. Improve the delivery and exploitation of MSI to global shipping by taking full advantage of technological developments.		
Element 3.8 Ocean Mapping Programme			1 & 2 & 3
3.8.1	GEBCO Guiding Committee and associated bodies. Organize, prepare, attend and report annual meetings of relevant GEBCO bodies (including GC, TSCOM, SCUFN, SCRUM and Science Day).		
3.8.2	IHO Digital Bathymetry Data Center (DCDB). Ensure effective operation of the IHO DCDB through monitoring and advising the IHO DCDB operators.		
3.8.3	Encourage the contribution of bathymetric data to the IHO DCDB. A) Identify priority areas for regional mapping. B) Promote data contribution through GEBCO participation in RHCs meetings.		
3.8.4	Maintain IHO bathymetric publications (B-4, B-6, B-7, B-8, B-9, B-10) Develop the on-line function of B-4		

3.8.5	Contribute to outreach and education about ocean mapping. Increase understanding of the importance of hydrography and interest in following ocean mapping as a career through activities such as: 1) Development of outreach materials (paper maps, brochures, web-based presentations) and educational materials; 2) Production of GEBCO Globes; 3) Printing of GEBCO World Map at various locations in MSs.		
3.8.6	GEBCO Web site. GEBCO Web site kept current and updated regularly.		
3.8.7	Develop short course and course material on compiling digital bathymetric models (DBMs) to be included in GEBCO from a heterogeneous bathymetric source database. Associated deliverables: -a course curriculum		
3.8.8	Update and enhance the GEBCO Gazetteer (B-8) for internet access. A) Provide the GEBCO Gazetteer as a web service via a geospatially enabled database. B) Develop and make available public and management on-line interfaces to the Gazetteer.		

STRATEGIC DIRECTIONS

1. Strengthen the role and effectiveness of the IHO
2. Facilitate global coverage and use of official hydrographic data, products and services
3. Raise global awareness of the importance of hydrography
4. Assist Member States to fulfil their roles

WORK PROGRAMME 1

CORPORATE AFFAIRS FOR THE PERIOD 2007-2011

TABLE OF CONTENTS

Element 1.1 Co-operation with International Organizations and participation

Element 1.2 Information Management

Element 1.3 Public Relations

Element 1.4 IHO New structure, WP & Budget, Strategic Plan and Performances

Element 1.5 IHB Management

Element 1.6 International Hydrographic Conferences (4th EIHC and XVIII IHC)

Note: Please note that the Finance Report is submitted separately.

ELEMENT 1.1 CO-OPERATION WITH INTERNATIONAL ORGANIZATIONS AND PARTICIPATION

Cooperation with the United Nations

The IHO was granted Observer Status to the UN General Assembly in November 2001. This Observer Status has provided entry for the IHO into numerous UN forums when it has been possible to highlight the importance of hydrography and the need to increase hydrographic capacity, worldwide. During the 2007-2011 period, the IHO has maintained a close and particularly productive relationship with the United Nations.

United Nations Environment Programme

The IHB was invited by the Government of Monaco to participate in the United Nations Environment Programme Civil Society Forum and its 10th Special Session of the Governing Council/Global Ministerial Environment Forum which took place in February 2008 in Monaco. The IHO was provided with a spacious exhibition area to display panels to inform UNEP participants on the role of the IHO, its aims and objectives. This was an excellent opportunity to promote the activities of our Organization and to increase awareness of the importance of Hydrography in supporting safety of navigation and protection of the marine environment. The UNEP Forum was attended by over a thousand participants.

UN Committee on Global Geographic Information Management (CGGIM)

In May 2010 the IHO, represented by the IHB, participated in the 2nd preparatory meeting of a UN Committee on Global Geographic Information Management (CGGIM), where the IHO's role and the well established mechanisms and standards that are in place to enable the exchange and availability of hydrographic information were explained. The creation of a UNCGGIM follows several recent UN Resolutions that have highlighted the fundamental importance that geographic information management provides in support of the diverse global issues facing UN Member States, and in particular disaster management, climate change and vulnerability. It is expected that the CGGIM, through the UN, will provide clear guidance on global spatial data infrastructures, requirements and priorities, help promote the necessary levels of government support and put in place any necessary capacity building. The inaugural meeting of the UN CGGIM took place in Seoul, Republic of Korea, in September 2011 where the IHO was also represented.

UN Open-ended Informal Consultative Process on Oceans and the Law of the Sea (UNICPOLOS)

The 11th meeting of UN Open-ended Informal Consultative Process on Oceans and the Law of the Sea (UNICPOLOS) was held at the United Nations in New York, June 2010.

The theme for the 11th meeting was "Capacity Building in Ocean Affairs and the Law of the Sea, including Marine Science". The meeting comprised four plenary sessions covering: General Statements; Inter-Agency cooperation and coordination; Process for the selection of topics and panellists so as to facilitate the work of the UN General Assembly; and consideration of the outcome of the meeting. There were four "Discussion Panels" covering: Assessing the need for capacity building in ocean affairs and the law of the sea including marine science; Overview of capacity building activities / initiatives in ocean affairs and the law of the sea including marine science; Challenges for achieving effective capacity building in ocean affairs and the law of the sea including marine science and transfer of technology; and New approaches, best practices and opportunities for improved capacity building in ocean affairs and the

law of the sea. The IHO was represented and a report on the IHO's Capacity Building activities was provided.

UN Group of Experts on Geographic Names (UNGEGN)

The IHO participates jointly with the Intergovernmental Oceanographic Commission (of UNESCO) in the work of the Sub-Committee on Undersea Feature Names (SCUFN) of GEBCO¹. Reports of SCUFN meetings, as well as any new editions of products issued under SCUFN's responsibility, are provided to UNGEGN Chairman/Secretary on a regular basis, in accordance with SCUFN Terms of Reference, which include "*The Sub-Committee shall maintain close liaison with the UN Group of Experts on Geographical Names and national authorities concerned with the naming of undersea features*".

The IHO has provided concise reports on the progress made on SCUFN matters and also on S-23 related activities to the 24th (2007), 25th (2009) and 26th (2011) Sessions of the UNGEGN, where the progress made by the IHO has been recognized.

Cooperation with the International Maritime Organization (IMO)

1. The IHO, represented by the IHB, as an Observer, has attended meetings of the Assembly (A), the Maritime Safety Committee (MSC), the Technical Cooperation Committee (TC), the Sub-Committee on Safety of Navigation (NAV) and the Sub-Committee on Communications and Search and Rescue (COMSAR).

2. Other important matters of relevance to the IHO that have been under discussion in IMO, some of which are still ongoing, are:

World-Wide Navigational Warning Service (WWNWS)

Following submissions to COMSAR prepared by the WWNWS Sub-Committee and endorsed by Member States the IMO adopted revised texts of all WWNWS documentation:

- Resolutions A.705(17) and A.706 (17) effective 1 January 2010
- Joint IMO/IHO/WMO Manual on Maritime Safety Information effective 1 January 2011
- International SafetyNET Manual effective 1 January 2012
- NAVTEX Manual effective 1 January 2013
- Resolution A.664(16) on the Performance Standards for Enhanced Group Call (EGC) equipment (Resolution MSC.306(87)) for EGC equipment installed on or after 1 July 2012
- Additionally it was agreed that Resolution A.701(17) on the carriage of EGC SafetyNET Receivers under the GMDSS was obsolete following the adoption of the revised publications above.
- A submission has been made to COMSAR 16 (March 2012) that COMSAR/Circ.36, which made the WWNWS available for the transmission of tsunami warnings, be removed with effect from 1 January 2013 when all the WWNWS documentation mentioned above have come into effect.

Submissions were also made to each session of COMSAR reporting on the outcome of the annual meetings of the WWNWS SC (CPRNW in 2008/9) and providing updated information on the contact details for NAVAREA Coordinators.

The Chairman of the WWNWS SC chaired several IMO COMSAR Correspondence Groups set up to progress the establishment of five new NAVAREAs and METAREAs in the Arctic. This extensive work

¹ General Bathymetric Chart of the Oceans, a joint IHO-IOC project

was largely undertaken by the WWNWS SC with the strong support of the World Meteorological Organization (WMO) and the International Mobile Satellite Organization (IMSO). The five new NAVAREAs and METAREAs are coordinated by Canada (2) Norway (1) and the Russian Federation (2) and will become operational on 1 June 2012. The IHO organised a reception held at the IMO Headquarters during COMSAR 15 in 2011 to mark this significant development in the WWNWS. Presentations were made by the Secretaries-General of IMO and the WMO, the President of the IHB and the Chairman of the WWNWS SC. A reception was kindly funded by the Norwegian Coastal Administration and Inmarsat Global Ltd.

The WWNWS SC has provided assistance to the WMO on the development of a World-Wide Met-Ocean Information Warning Service Guidance Document which was adopted by the 27th session of the IMO Assembly in 2011 as Resolution A.1051(27). This Resolution complements Resolution A.706, as amended on the World-Wide Navigational Warning Service.

IMO COMSAR has been undertaking a scoping exercise to establish the need for a review of the elements and procedures of the GMDSS which is due to complete in 2012.

Electronic Chart Display and Information System (ECDIS) and Electronic Navigational Charts (ENCs)

The most significant development in this area was the adoption on 5 June 2009 of Resolution MSC.282(86) which amended Regulation 19 of SOLAS Chapter V to introduce a mandatory carriage requirement for ECDIS for certain classes of vessel to be phased in over the period 2012 to 2018. As part of the debate within NAV on this topic the IHO submitted annual reports on the status of global availability of ENC's.

Recently, MSC and NAV debated matters related to reported operating anomalies identified within ECDIS. The IHO has contributed to the ongoing work by hosting two meetings, in 2011 and 2012, in order to bring the relevant experts and interested parties together to identify any further issues and seek methods to rectify them. Several of the issues relate to matters of relevance to, but outside the control of, the IHO. The IHO prepared a check data set that was distributed widely to shipping and inviting reports following the use of the check data to be sent to the IHB. The results of these checks will be reported to MSC90 and NAV58 in 2012.

The IHO has either proposed or assisted in the development of the following related documents which have been issued by IMO:

- SN.1/Circ.207/Rev.1 on the differences between RCDS and ECDIS
- SN.1/Circ.266/Rev.1 on the Maintenance of Electronic Chart Display and Information System (ECDIS) Software
- MSC.1/Circ.1389 on Guidance on Procedures for Updating Shipborne Navigation and Communications Equipment
- MSC.1/Circ.1391 on Operating Anomalies identified within ECDIS
- CL.2850 on IHO On-line Chart Catalogue – Coastal States' Recommended Paper Charts

The IHO also submitted a document to NAV reporting on the adoption of the 5th edition of IHO Publication S-44 - *Standards for Hydrographic Surveys*.

The IHO provided input to the revision of the STCW code to help ensure that ENC and ECDIS topics were fully included.

e-Navigation

Following the adoption of an e-Navigation Strategy NAV has been working on the development of the e-Navigation strategy implementation plan. The IHO, through the IHB, has participated fully in the work on e-Navigation at all sessions of NAV and COMSAR and also in the work of the Correspondence Group established by NAV. The IHB hosted a meeting in 2009 which was organised by Norway to discuss e-Navigation issues, especially those relating to data models. ECDIS is considered a core element within e-Navigation. NAV has recommended that the MSC approve the use of IHO's S-100 Universal Hydrographic Data Model standard as the baseline for creating a framework for data access and services under the scope of SOLAS. In order to ensure that the data modelling requirements of e-Navigation are properly coordinated, NAV has recommended establishing a joint IMO-IHO Harmonization Group on Data Modelling. The IMO-IHO Harmonization Group on Data Modelling would comprise representatives from Member States of IMO and IHO, supported by various relevant observer organizations and is not expected to be formed until at least 2013. The MSC will consider these recommendations at its 90th session in May 2012. NAV has also asked the MSC to agree to extend the completion of the e-Navigation Strategy task from 2012 to 2014.

Technical Cooperation

The IHO has submitted papers to each session of the TCC reporting on the work of the IHO Capacity Building Sub-Committee (CBSC). The IHO enjoys significant support from IMO and their Technical Cooperation Programme provides funding for some IHO Capacity Building Courses.

3. On several occasions during IMO meetings the IHO has raised the matter of IHO membership which - at 80 - is less than half the IMO membership of 170. This approach has received the full support of the Secretary-General of IMO who personally raised it during meetings of the Assembly and Council, both of which endorsed his recommendation that IMO Member States that are not members of the IHO should give consideration to joining the IHO. Following a request from the IHO the MSC issued MSC.1/Circ.1373 on IHO membership.

Cooperation with the Intergovernmental Oceanographic Commission (IOC)

The IHO continues to cooperate with IOC in areas of common interest. Due to certain financial constraints in IOC some changes took place that slightly affected IHO activities during the period 2007-2011, such as Ocean Mapping matters. As a result, this important programme, which, despite being given high priority by the IOC, did not receive sufficient resources to fund the minimum requirements. Nevertheless other arrangements were jointly identified such that the GEBCO and IBC's projects have been restructured to ensure their continuity. This includes new Terms of Reference and Rules of Procedure that were agreed for GEBCO and its Sub-Committees.

Tsunamis have received great attention during the period. The IOC decided to continue working on the strategy to handle tsunami threats in the most efficient and effective way. The IHO has been actively involved in raising awareness and providing training especially to countries in the Indian Ocean tsunami affected area, but also in other regions also threatened by this type of natural hazard. Capacity building matters are given very high priority by both organizations. The IHB hosted a meeting in 2007 with the IOC CB Officers to coordinate CB efforts and this activity has been repeated annually during the period, with great success.

The IHO has consistently confirmed its readiness to fully cooperate with IOC in the development of inundation maps and related coastal bathymetric activities required for the regions, in particular the Indian Ocean.

One of the emblematic IOC projects that has been supported by IHO is the COAST-MAP-IO. The inaugural meeting of this project took place in Thailand in October 2007, organized by IOC with IHB participation and sponsored by the Italian Government. The meeting was attended by representatives of all countries participating in this project: Bangladesh, Comoros, Kenya, Madagascar, Maldives, Mauritius, Mozambique, Myanmar, Seychelles, Sri Lanka, Tanzania, and Thailand. Representatives of IOC and training institutions (AWI, Germany; National Hydrographic School, India; and NGDC, USA) also attended. All countries were visited and the personnel was trained in coastal bathymetric mapping and the development of associated products. The Project finished in 2010.

The IHO has continued to highlight the importance of comprehensive bathymetry to contribute to tsunami modelling and mitigation, as well as the importance of public awareness, and has recommended IOC to take advantage of the IHO's regional structure, contacting the appropriate IHO Regional Hydrographic Commissions to obtain available bathymetry to support the work.

The IHO, through the IHB, has attended meetings of the IOC GLOSS Group of Experts. GLOSS has also been represented at meetings of the TWLWG (formerly the Tidal Committee). The IHO has sought, through letters, to support GLOSS in increasing the tidal data input to GLOSS and the recovery and digitization of paper tide gauge records into the databank for the study of long-term sea level change.

The IHO was involved in the celebration of the 50th anniversary of IOC that took place between June 2010 and October 2011. Welcoming and congratulatory addresses were given by various authorities at the opening ceremony of the IOC Assembly on 8 June 2010. The IHO was represented by the IHB.

The IHO has been represented at all IOC Executive Council and Assembly meetings.

Cooperation with the World Meteorological Organization (WMO)

The IHO has cooperated closely with the WMO regarding the promulgation of Maritime Safety Information. The WMO has attended all meetings of the WWNWS SC (formerly CPRNW) and its Document Review WG. The IHO, through the IHB, has attended meetings of the Expert Team on Maritime Safety Services (ETMSS) a subsidiary body of the Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM).

Cooperation with the Antarctic Treaty Consultative Meetings (ATCM)

The IHB Director, who is also the Chairman of HCA, represented the IHO at the five ATCM held during the period 2007-2011, providing on each occasion a report on the status of hydrographic surveys and INT Chart production of the Region M "Antarctica".

The IHO report submitted to the XXXth ATCM concluded that much higher priority should be given to hydrographic surveys in Antarctica by national programmes. The report provided several presentations that could be delivered at the next ATCM in the form of a seminar. The UK and Norwegian delegations strongly supported the presentation made by the IHB, endorsed the report, requested that a strong message be included in the minutes as regards the need to increase hydro-cartographic activities in Antarctica and, in principle, it was agreed to hold a short seminar at the next ATCM.

As the ATCM meeting coincided with the XVIIth IHC, in the absence of the IHO representative the COMNAP Executive Secretary kindly introduced Information Paper (IP 50) “International Coordination of Hydrography in Antarctica: Significance to Safety of Antarctic Ship Operations”, jointly prepared by the HCA and the IHB, making a strong call for increasing hydrographic activity in Antarctica.

The XXXIst ATCM adopted the IHO report and very much appreciated the contribution made by the IHO seminar - “The Importance of Hydrographic Activities in Antarctica” – which was held in plenary and triggered a very important resolution regarding the importance of hydrographic surveys and nautical charting in Antarctica that was approved.

The 50th Anniversary of the Antarctic Treaty was celebrated during the XXXIInd ATCM. The celebration took place at the U.S. Department of State, Washington DC with a wide participation of high level dignitaries, including HSH Prince Albert II of Monaco. Despite the IHO’s observer status to the ATCM, the IHO representative was invited to participate in all these major events. This was an indication of the special consideration IHO has within the Antarctic Treaty System.

The proposal made by New Zealand to host an Antarctic Treaty Meeting of Experts on the Management of Shipborne Tourism to consider: trends in shipborne tourism in the Antarctic Treaty area over the past 10 years, including maritime incident and future projections; Maritime Safety in the Antarctic Treaty Area; Protection of the Antarctic Environment and the cooperation between the ATCM, IMO and IHO was agreed. An invitation was extended to the IHO.

The outcomes of the ATME on Shipborne Tourism were considered at the XXXIIIrd ATCM. The Meeting endorsed two resolutions pertinent to the IHO’s mission and objectives:

“ That the Treaty Parties should continue to contribute to hydrographic surveying and charting information and consider advising vessels intending to operate in the Antarctic Treaty area that many areas have not been surveyed to modern standards, and:

The IHO-HCA should continue to be invited to annual ATCMs to report the status of hydrographic survey and nautical chart production in Antarctic waters. Parties also agreed that, as appropriate, the ATCM should be represented at IHO-HCA meetings. Where an IHO-HCA meeting was to be held in a country that was also a Consultative Party, then that Consultative Party should consider attending the HCA meeting, “

The report submitted by the IHO to the XXXIVth ATCM was very well received. The presentation highlighted the encouraging results of the discussions held at governmental level and between managers, operators and scientists, where the message “*Antarctic development needs reliable knowledge of hydrography*” seems to have been well understood. Also the IHO’s report that improvements in the charting situation in Antarctica have been and are being seriously addressed by these different sectors, which are enthusiastically cooperating to improve the shortcomings, was acknowledged. Emphasis was made with regard to the contribution made by several Hydrographic Offices that have allocated resources to the production of ENCs of Antarctic waters, greatly contributing to improve safety to navigation. Finally, a call to increase the level of hydrographic survey operations was made, as the only means to gather new data to support the production of the remaining INT Charts not yet created.

Cooperation with the Council of Managers of National Antarctic Programmes (COMNAP)

Taking advantage of the ATCM and meetings of the HCA, the IHB Director in charge of Antarctic matters has met with the COMNAP Executive Secretary or COMNAP representatives and discussed ways in which COMNAP could contribute to raising awareness of the importance of improving safety of navigation in Antarctica through the availability of new surveys and the production of nautical charts. COMNAP has considered all IHO/HCA initiatives in this respect and hydrography is now included on

the agenda of their meetings. COMNAP volunteered to participate as an Observer in the Hydrographic Survey Programme Working Group and has provided IHO with great visibility during discussions held within their body and also in ATCM discussions.

The principal joint task undertaken during the period has been the holding of a seminar at the 2009 COMNAP Annual Meeting, the objective of which was to raise awareness at the operational level of the importance of hydrographic activity in Antarctica, to achieve a better understanding of COMNAP on the existing risks associated to the present status of charting in the region and to explore ways to jointly improve the situation.

In brief, COMNAP is and continues to be a very good ally in fostering hydrography in the Antarctic.

Cooperation with the International Association of Antarctica Tour Operators (IAATO)

As in the case of COMNAP, the IHB Director in charge of Antarctic matters has taken advantage of ATCM and HCA meetings to meet with the Executive Director of IAATO or his representative. During this period, IAATO has participated actively in the overall IHO/HCA activities. The input from their operators has contributed to improving the INT Chart scheme of the area. IAATO has provided valuable information, collected by its members, to charting authorities.

The IHO made a presentation at the 2010 IAATO Annual Meeting on the Importance of Hydrographic Activities in Antarctica. The objective of the presentation was to raise awareness at the operational level of the importance of hydrographic activity in the Antarctic, to achieve a better understanding within IAATO on the existing risks associated to the present status of charting in the region and what IHO/HCA is doing to fill the gaps and, finally, to jointly explore WHAT and HOW IAATO can contribute to the IHO/HCA efforts to improve the situation. The presentation was followed by an interesting discussion. Participants appreciated the opportunity to discuss matters in detail concerning safety to navigation and their potential involvement in contributing to improve the hydrographic knowledge of Antarctic waters. Data collected was felt to be a concrete potential contribution from IAATO to the IHO/HCA, if such data is collected according to the applicable standards.

The IHO also participated in the 2011 IAATO Annual Meeting where a presentation was made as a continuation of the ones made earlier.

IAATO's offer of ships of opportunity to support hydrographic activity in Antarctica is well appreciated, as well as their readiness to invite surveyors to visit IAATO ships during their port calls before heading to Antarctica, thereby enabling guidance to be given on hydrographic data collection conducted as part of their voyages.

The relationship with IAATO can be considered to be excellent and its position is very supportive of IHO activities.

Cooperation with the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA)

The IHO has participated in various activities organized by the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA). In July 2007 the IHO attended a 3-day seminar on e-Navigation at the offices of Trinity House in London. The seminar was well attended by 82 delegates from 23 countries. Presentations were given under the following subject areas: Concept of e-Navigation; User Requirements; Charting and Display Issues; Navigation and Positioning Systems; Communications;

Case Studies and Training Issues; and Legal and Human Aspects. The IHB presented a paper entitled “The IHO and ENC’s” during the session on “Charting and Display Issues”.

The IHO, through the IHB, has continued to be represented at meetings of IALA’s e-Navigation Committee and at meetings of IALA’s World VTS Guiding Board, as an Observer. The IALA Committee on e-Navigation was formed to develop IALA policy and technical proposals for subsequent consideration by IMO, the organization developing the e-Navigation concept. In accordance with the Memorandum of Understanding between the two organizations, IHO participation provided IALA with advice and assistance in relation to hydrographic and nautical charting aspects. Also, several visits to IALA’s headquarters in Paris were paid by IHB to discuss matters of common interest with the Secretary-General of IALA.

Virtual Aids to Navigation has been under consideration by IALA. A Workshop on Virtual Aids to Navigation took place in January 2010. The workshop was convened by IALA to formulate guidelines for the implementation of virtual Aids to Navigation (virtual AtoN). The IHO was represented by the IHB.

The IHO has participated in IALA work on Polar Routes. A meeting on the marking of polar routes was held at the IALA Headquarters in February 2010. The IHB made a presentation on the status of hydrographic support in the Polar Regions, followed by presentations by the invited delegates from Canada, Denmark, Norway, the Russian Federation, and the USA, and by the IALA Committee Chairs. It was agreed that an appropriate output from the meeting would be a Resolution from the five Arctic circumpolar countries that IALA would coordinate the establishment of a forum for subsequent discussions relevant to the needs of aids to navigation in Arctic waters.

Cooperation with the International Cartographic Association (ICA)

The IHO, represented by the IHB, was invited to attend the ICA International Cartographic Conferences and General Assemblies and exhibitions held during the period.

ICA held its 2007 Conference (ICC’2007) in Moscow, Russia in August 2007 and an IHO Cartographic Exhibition was held as part of the Map Exhibition. In the frame of a special session of the Conference dedicated to “*The Collaboration on Matters of Mutual Interest in the Activities of National Mapping Organisations (NMOs) and the ICA*”, the IHB representative had the opportunity to present “*Marine Spatial Data Infrastructures: an IHO perspective*”.

The 24th International Cartographic Conference was held in Santiago de Chile on 15-21 November 2009 (ICC’2009) and the IHO was represented by the Hydrographer of Chile who gave a presentation, on behalf of the IHO, on the new hydrographic geospatial data framework standard S-100 and its relationship with the digital development of nautical cartographic services.

The 25th ICC took place in Paris, France in 2011. The Hydrographer of Chile who was also Chair of the Marine Cartography Commission of ICA represented the IHO. So as to avoid duplication, ICA decided to withdraw the Marine Cartography Commission. The existing MOU between IHO and ICA is being updated accordingly, to reflect this new arrangement.

Cooperation with the International Organization for Standardization (ISO)

The IHO participates in the standards development activities of ISO Technical Committee 211 (ISO/TC 211), which has been tasked to produce standards in the field of digital geographic information. The IHO

has used the ISO 19100 series of geographic standards and technical specifications as primary reference documents for the IHO S-100 standard and the IHO Registry. ISO/TC211 presently has 32 active participating Member States, 30 observing Member States, and 34 external liaison members, one of which is the IHO. It has internal liaisons with sixteen other ISO or IEC (International Electrotechnical Commission) working groups. The ISO/TC211 also works in close liaison with the Open Geospatial Consortium on harmonizing their standards development activities.

Discussions are now at an advanced stage to establish a Memorandum of Understanding between ISO and IHO that formally recognizes each other's standards and allows for the establishment of joint status for certain standards in the future.

ISO/TC211 has developed an outreach plan which aims to promote the awareness, adoption, and advocacy of ISO/TC 211 standards in user communities in order to allow these communities to take advantage of the considerable international investment in the development of these standards.

Over the past five years the ISO TC211 has had bi-annual meetings in Rome, Italy; Xi'an, China; Copenhagen, Denmark; Tsukuba, Japan; Molde, Norway; Quebec, Canada; Southampton, UK; Canberra, Australia; Delft, Netherlands and Pretoria, South Africa.

Cooperation with the International Federation of Surveyors (FIG)

The IHO attended the 6th FIG Regional Conference - "Coastal Areas and Land Administration – Building the Capacity" which was held in Costa Rica, November 2007. The Conference included a Workshop on "Economic Benefits of Hydrography", with four presentations: "The economic benefit of hydrography and ocean mapping"; "Marine Geospatial software: Generating economic benefits from hydrographic data and calculation of maritime boundaries"; the "Cost/economic benefits of hydrographic education" and "The value of hydrographic information and its influence in the decision-making process", this last presentation was made by an IHB Director. The workshop was attended by over 120 people and was considered a great success of the FIG Commission 4 "Hydrography".

In 2008 the IHO attended FIG annual Working Week, entitled "Integrating Generations". In this event Commission 4 "Hydrography" held its annual meeting where two Working Groups of Commission 4 reported on the activities with respect to "A Marine Cadastre" and "Promoting the economic benefits of Hydrography". It was agreed that this WG would prepare a leaflet on the "Economic Benefits of Hydrography" for release during the next FIG Congress. The IHB will assist in the preparation of this leaflet. Commission 4 organised three sessions on "Coastal Zone Administration"; "Hydrographic Information Management"; and "Hydrographic Surveying in Practice".

In 2009 the IHB submitted a paper on "Why a National Hydrographic Service?" to the 7th Regional FIG Conference that took place in Vietnam. The paper was presented by the Chair of the International Board on Standards of Competence with the objective to generate discussion around the need and justification for a maritime state to have a national hydrographic office tailored to its real needs.

During the period, FIG Commission 4 has published two relevant publications that should be noted:

- Guidelines for the Planning, Execution and management of Hydrographic Surveys in Ports and harbours,
- Report on the Economic Benefits of Hydrography.

Cooperation with FIG has continued particularly in the field of Capacity Building and the Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers, the report of which is included in Programme 3.

Cooperation with other International Bodies.

The IHO has maintained excellent relations with various other international and regional bodies having common interests. We would like to highlight the close cooperation with:

- Port Management Association of West and Central Africa (PMAWCA)
- The International Electrotechnical Commission (IEC)
- The South Pacific Applied Geo-science Commission (SOPAC)
- Group on Earth Observations (GEO)
- Committee International Radio-Maritime (CIRM)
- The International Maritime Pilots' Association (IMPA)
- International Federation of Hydrographic Societies (IFHS)
- Joint Board of Geospatial Information Societies (JBGIS)

In addition, the IHO has agreed and signed Memoranda of Understanding with the following organizations, aimed at developing hydrography in areas where such development is lacking:

- The Pan American Institute of Geography and History (PAIGH)
- The Caribbean State Association (CSA)
- The Secretariat of the Pacific Community (SPC)
- The European Union Commission (in progress)

ELEMENT 1.2 INFORMATION MANAGEMENT

Report on Information Technology Infrastructure

The IHB continued to improve its internal and external Information Technology (IT) infrastructure during the past reporting period. Almost all IHO publications are now provided in digital format, and can be downloaded in a PDF format from the IHO web site. Internal correspondence documents are also processed and made available in digital format. A number of upgrades and changes have been made to the IHB infrastructure in order to support these new requirements. Cables and network points have been installed in new offices constructed within the IHB chartroom. This provided the opportunity to expand the WIFI coverage into the chart room and to move the network backup server out of the main computer server room. The main network switches were also upgraded in order to increase internal bandwidth capacity. A second telephone line and ADSL account were implemented in order to improve external bandwidth connectivity. Improvements were also made to the IHB conference room IT infrastructure to include a dual-screen projection capability and improved internet access for delegates.

Several upgrades were made to the internal servers located within the IHB. These include the replacement of the network and proxy server with new rack mounted servers. All IHB servers are now located in two server racks within an air conditioned server room. The server network backbone was upgraded from 100 mbps to 1 gbps bandwidth speed.

Several computer workstations were upgraded during this period. This was done in order to replace old equipment and to upgrade operating systems and application software. Three network printers were replaced during the reporting period.

Other IT Related Work

Mr. Shigeru NAKABAYASHI, an officer seconded from the Japan Hydrographic and Oceanographic Department under the terms of IHO Resolution T4.2, provided assistance with the internal IT maintenance and support between November 2008 and March 2011. He also worked on the establishment of a metadata database and web map server for the Hydrographic Commission on Antarctica. He undertook the task of converting the Hydrographic Dictionary (S-32) into a WIKI format, and provided valuable assistance with other IT and GIS related tasks. During his term at the IHB he carried out the task of S-63 Scheme Administrator.

Following the untimely death of Mr SEMLALI in 2010, a new staff member, Mr. Dan COSTIN, was recruited specifically to support the IHB's growing IT infrastructure requirements. He commenced work at the IHB in January 2011 also taking on the task of S-63 Scheme Administrator.

Report on IHO Web Site Development

The maintenance of the IHO web site, which is an important resource for the Organization, is an ongoing task that is undertaken by several IHB staff members. It is an essential reference for coordinating the work of IHO Committees and Working Groups and Regional Hydrographic Commissions. It also provides an online repository for meeting documents, IHO publications, circular letters and other important reference documents. Mrs. Isabelle BELMONTE is the primary point of contact for general updates to the web site, and IHB Professional Assistants are responsible for maintaining the Committee, Commission and Working Group sections for which they are responsible.

During the reporting period, officers seconded from the Korean Hydrographic and Oceanographic Administration (KHOA) under the terms of IHO Resolution T4.2 provided valuable assistance with maintaining and expanding the IHO website. In 2010 Mr. Yong HUH, implemented a new web site Content Management System (CMS) and transferred the content of the IHO web site to the new system. The new site, which is easier to maintain, was commissioned in July 2011. Dr. Sung Ho CHOI (KHOA) also carried out an open source development project during his term (2011) at the IHB.

Report on Communication with Member States

The IHB has been in permanent communication with IHO Member States, keeping them informed on the different issues through Circular Letters.

During the years covered by this report, the IHB has issued:

YEAR	CL	CCL	FCCL	TOTAL
2007	124	32	2	158
2008	107	5	3	115
2009	92	9	4	105
2010	92	0	3	95
2011	83	25	2	110

As established in the IHO Regulations, all these Circular Letters have been issued in English, French and Spanish. Exceptionally, and due to various circumstances, some annexes to circular letters have been provided only in English.

Report on IHO Publications

1. General Information

Almost all IHO publications are today provided in digital form and only a few are still provided in hard copy. IHO publications are available on the IHO Web Site (www.iho.int) and can be downloaded by IHO Member States and the public. In general, publications are free for the purpose of facilitating their use. It is not intended that third parties will profit from this arrangement and appropriate copyright is applied to prevent this. Based on a decision by Member States, the IHB no longer produces an annual CD-ROM containing all the publications since they are all easily accessible from the website. Nevertheless, the IHB stands ready to support any MS request.

The Catalogue of IHO Publications (former P-4) has been discontinued since the list of IHO publications is available and kept updated on the IHO website.

In order to facilitate the cataloguing and identification of IHO publications they have been arranged in the following five categories:

- B - Bathymetric Publications (Mainly related to GEBCO)
- C - Capacity Building Publications
- M - Miscellaneous (Base Regulatory Publications)
- P - Periodic Publications
- S - Standards and Specifications

The International Hydrographic Review (IHR) that was originally edited and printed by the IHB, was edited under contract by a private company between 2000 and 2008. As from 2009 the IHR was once again being prepared and published by the IHB, in a digital version issued twice a year, with the assistance of an external Editor supported by an Editorial Board comprising representatives from each of the RHCs and other volunteer experts. A compilation of the edited articles is provided in hard copy to all Member States at the end of each year.

The International Hydrographic Bulletin is now produced in digital format and since 2007 is available on the IHO Web site. Starting in the second half of 2011 the Bulletin was given a new layout with hyperlinks and a modern look. It is edited in English, French and Spanish and presents a summary of recent IHO meetings, events and other items of general interest.

2. New Publications published since the XVIIth IH Conference

a) Bathymetric Publications:

B-7 GEBCO Guidelines: This publication is in preparation by the GGC.

B-8 Gazetteer of Geographical Names of Undersea Features: Last updated in August 2011.

B-11 IHO-IOC GEBCO Cook Book: This publication is under revision.

b) Capacity Building Publications

C-6 Reference Texts for Training in Hydrography: This publication is in preparation by the IBSC.

C-13 Manual on Hydrography :

- English version: updated February 2011
- Spanish version: updated April 2010
- Portuguese version: available and updated April 2010
- French version: This publication is in preparation by the IHB.

C-16 National Hydrographic Regulations: This publication was edited in January 2008

C-17 Spatial Data Infrastructures: “The Marine Dimension” - Guidance for Hydrographic Offices: This publication was edited in February 2011

C-47 Training Courses in Hydrography and Nautical Cartography: Edition updated April 2011

C-55 Status of Hydrographic Surveying and Nautical Charting Worldwide: This publication is revised on receipt of updated information from Member States.

c) Miscellaneous Publications:

M-1 Basic Documents of the IHO: Edition updated March 2009.

M-2 The Need for National Hydrographic Services: This publication was issued in October 2011 in both English and French. A Spanish version is in hand.

M-3 Resolutions of the IHO: Edition updated March 2012

d) Periodical Publications:

P-1 International Hydrographic Review : April and November 2007; April and September 2008; May and November 2009; May and November 2010; May and November 2011.

P-5 IHO Year Book: Is kept permanently updated based on information received from Member States.

P-6 Report of Proceedings of IHC: Proceedings of the XVIIth IHC (2007) as well as from the 4th EIHC (2009) were published digitally.

P-7 IHO Annual Report: Part 1 “General” and Part 2 “Finances” have been distributed in late April each year during the period.

e) Standards and Specifications:

S-4 Regulations for International (INT) Charts and Chart Specifications of the IHO: Last update August 2011

S-5 Standards of Competence for Hydrographic Surveyors: 11th Edition May 2011.

S-8 Standards of Competence for Nautical Cartographers: 3rd Edition 2010

S-11 Guidance for the Preparation and Maintenance of International Chart Schemes and Catalogue of International (INT) Charts: last update Feb 2012

S-23 Limits of Oceans and Seas : Edition 1953 new edition being considered by S-23 WG (see paragraph 3 below).

S-32 Hydrographic Dictionary: This publication has been prepared as an on-line searchable Wiki Dictionary in English and French. The Spanish version remains to be prepared. The 5th Edition (1994) remains available for download from the IHO Publications web page, however these have not been updated for new / amended definitions adopted by Member States since their initial publication.

S-44 IHO Standards for Hydrographic Surveys: 5th Edition 2008

S-49 Standardization of Mariners' Routeing Guides: 2nd Edition 2010

S-52 Specifications for Chart Content and Display Aspects of ECDIS: Edition 6.0 2010

S-53 Joint IMO/IHO/WMO Manual on Maritime Safety Information: Edition 2009

S-58 Recommended ENC Validation Checks. Edition 2011
S-63 IHO Data Protection Scheme: Edition 2008
S-64 IHO Test Data Sets for ECDIS: Edition 2008
S-65 ENC Production Guidance: Edition 2009
S-66 Facts about Electronic Charts and Carriage Requirements: Edition 2010
S-99 Operational Procedures for the Organization and Management of the S-100 Geospatial Information Registry: Edition 2011
S-100 IHO Universal Hydrographic Data Model: Edition 2010

3. Report on the work on the Publication on Limits of Oceans and Seas (S-23) by the IHO S-23 WG

Note: Following a proposal from the IHB Directing Committee, Member States agreed that a working group be formed to progress a new edition of S-23. The S-23 WG had its first meeting on 1 June 2009 and a second meeting in July 2010.

The edition of S-23 currently in force is still the 3rd edition, dated 1953.

Report on IHB Library

The IHB Library has continued to receive publications from various international organizations as well as from IHO Member States and research institutions. Occasionally the IHB Directing Committee purchases technical books found to be relevant to the work, mission and objectives of the IHO. The library is mainly consulted by the IHB Directors and Staff, but occasionally is visited by researchers.

ELEMENT 1.3 PUBLIC RELATIONS

Report on the Relations with the Host Government

Relations with the Host Country were excellent throughout the period 2008-2012. The Department of External Relations of Monaco has efficiently handled applications from States to become Members of the Organization and monitored the approval procedure in accordance with Article XX of the Convention, as well as the approval of the Protocol of Amendments to the Convention, as approved by the 3rd Extraordinary International Hydrographic Conference (EIHC) in 2005, in accordance with Article XXI of the Convention.

The Directors participated in the “Blue Seas” project organized by the Government of Monaco with the presence of HSH Prince Albert II. The Department of Tourism of Monaco hosted two special receptions in 2008 and 2010 at the Casino for the delegates attending the ABLOS Conferences organized by the Bureau. Every year the Directing Committee participates in the festivities celebrating the National Day of Monaco on 19th November as well as various other events hosted by various Ministries and Agencies in Monaco. The Directing Committee was also invited to attend the Wedding of HSH Prince Albert II and Miss Charlene Lynette WITTSTOCK that took place at the Palace of Monaco on 2nd July 2011.

The Directing Committee very much appreciates the support provided by the Government of Monaco in maintaining the Bureau. Every year a specific project targeting the Bureau's particular needs as regards improvement and renovation is implemented with the financial support provided by the Government of Monaco. In the past five-year period, through this programme, the offices of the Directing Committee, the Chart Room, the toilets and the Conference Room have been renovated.

HSH Prince Albert II and Members of the Government participate in the World Hydrography Day celebrations, organized every year by the Bureau.

World Hydrography Day Celebrations

Decision No. 10 of the XVIth International Hydrographic Conference in April 2002 stated that the Organization should establish an International Hydrographers' Day and instructed the Directing Committee to investigate how the United Nations (UN) could recognize this event. The Directing Committee, with the support of the Permanent Representative of Monaco to the UN, and after a lengthy period of procedures and discussions, announced that the UN General Assembly (UN/GA), under the Agenda on the Oceans and the Law of the Sea, adopted Resolution A/60/30 on 29 November 2005, that "Welcomes the adoption by the International Hydrographic Organization of the "World Hydrography Day (WHD)", to be celebrated annually on 21 June, with the aim of giving suitable publicity to its work at all levels and increasing the coverage of hydrographic information on a global basis, and urges all States to work with that Organization to promote safe navigation, especially in the areas of international navigation, ports and where there are vulnerable or protected marine areas".

During the period 2008-2011 WHD was celebrated every year with themes approved by the Member States. The theme for this year's WHD is "International Hydrographic Cooperation – Supporting safe navigation". HSH Prince Albert II has participated twice in receptions organized by the Bureau for WHD celebrations – 2006 and 2010. In his speeches he highlighted the importance of hydrography for safety at sea, protection of the marine environment and supporting maritime needs and requirements. The Prime Minister, Ministers, Diplomats and other local dignitaries were invited to the celebrations. Interviews on local television, articles in newspapers and magazines, visits of students and a small exhibition were organized by the Bureau. A special Media Release is always prepared based on the theme of each celebration. A page has been created on the IHO web site where various materials are posted that can be used by HOs and where material from celebrations by various Member states are also mounted.

IHB Visits to National Authorities

Since the XVIIth IHC, a member of the Directing Committee visited the National Hydrographic Authorities of the following countries:

Argentina, Australia, Bahrain, Brazil, Canada, Chile, Cuba, Denmark, Fiji, Finland, France, Germany, Greece, Iceland, India, Indonesia, I.R of Iran, Japan, Kiribati, Korea Rep of, New Zealand, Norway, Oman, Palau, Papua New Guinea, Peru, Portugal, Qatar, Russian Federation, Seychelles, Singapore, Solomon Islands, South Africa, Sweden, Suriname, Turkey, Ukraine, United Kingdom, Uruguay, USA (NOAA), Vanuatu.

Authorities that have visited the IHB

During the period since the last IHC, in addition to delegates attending the 4EIH, the IHB was honored by dedicated visits of the Hydrographers of Albania, Chile, Germany, Japan and United Kingdom, together with various other representatives from different countries. Also the IHB has received the visit of representatives of numerous international organizations.

ELEMENT 1.4 IHO NEW STRUCTURE, WP & BUDGET, STRATEGIC PLAN AND PERFORMANCES

IHO Membership

New IHO Member States.

Since the last Ordinary Conference two countries have become IHO Members: Qatar (02 May 2007) and Ireland (04 June 2007).

Pending Member States (Applications for admission to the IHO having been approved).

The following countries have applied to become IHO Members and have received the approval of a two-thirds majority in the year indicated: Bulgaria (1992), Cameroon (2009), Mauritania (1991) and Sierra Leone (2010). These four countries now need only to deposit their Instruments of Accession to complete the IHO membership formalities.

Pending Member States (Applications for admission to the IHO awaiting approval).

The following countries have applied to become IHO members on the dates indicated: Haiti (March 2008), Montenegro (July 2007) Vietnam (March 2011) and Brunei Darussalam (February 2012).

Suspended Member States.

Since the date indicated and in accordance with Article XV of the Convention and Articles 16 and 17 of the Financial Regulations all rights and benefits are suspended for the Democratic Republic of the Congo (July 1983) and the Dominican Republic (July 1983).

New Structure

Beginning 01 January 2009, following Decisions 8, 9 and 11 of the XVIIth International Hydrographic Conference and after having harmonized the IHO Committees, the IHO followed a new Organizational Structure, based on three Committees: the Hydrographic Services and Standards Committee (HSSC); the Inter-Regional Coordination Committee (IRCC) and the Finance Committee (FC).

The HSSC aims to promote and coordinate the development of standards, specifications and guidelines for official products and services to meet the requirements of mariners and other users of hydrographic information.

The IRCC aims to establish, coordinate and enhance cooperation in hydrographic activities amongst States on a regional basis, and between regions; establish co-operation to enhance the delivery of capacity building programmes; monitor the work of specified IHO Inter-Organizational Bodies engaged in activities that require inter-regional cooperation and coordination; promote co-operation between

pertinent regional organizations and review and implement the IHO Capacity Building Strategy, promoting Capacity Building initiatives.

Work Programme and Budget

The Work Programme (WP) approved at the XVIIth IHC has served as the basis for the preparation of the annual IHO WP that the IHB Directing Committee has submitted for the approval of the IHO Member States following the procedures laid down in the relevant IHO Regulations.

As the IHO WP - approved in 2007 - comprised 5 Programmes, it was necessary to adapt this WP to the new structure and Strategic Plan comprising only 3 Programmes. This transition was done during 2009 and the current WP structure has been in use since then.

The introduction of the new structure has had no effect on the approved Budget, the details of which have been sent annually together with the annual WP for Member States' approval.

Strategic Plan and Performances

The 4th Extraordinary International Hydrographic Conference (EIHC) in 2009 approved the revised Strategic Plan (SP). The agreed SP process includes risk management and performance indicators.

The 4EIHC took note of the comments of the Directing Committee that the requirements of the strategic planning process could have organisational and resource implications, and requested the IHB Directing Committee to review the implementation of the new planning mechanism, in consultation with the HSSC and IRCC chairs and report back to the next ordinary IHC in 2012.

ELEMENT 1.5 IHB MANAGEMENT

Report on IHB Staff

During the period the IHB has suffered the loss of Mr. SEMLALI who passed away in July 2010. His post has been filled by Mr. Dan COSTIN.

Other staff members left the IHB voluntarily or retired upon reaching retirement age. One staff member changed position. The following staff members were replaced as indicated:

- | | |
|----------------------------|--|
| - Ms. Christine MEYNADIER | June 2010 replaced by Mrs. Ghislaine FAUCHOIS |
| - Mrs Renee CAUDOUX | February 2010 replaced by Mrs. Isabelle BELMONTE |
| - Captain Federico BERMEJO | May 2011 replaced by Captain Alberto Costa NEVES |
| - Mr Christian VELARD | December 2011 replaced by Mrs Ghislaine FAUCHOIS |
| - Mrs Ghislaine FAUCHOIS | December 2011 replaced by Ms Sandrine BRUNEL |

The IHB has been supported by the following secondments:

From the Japan Hydrographic and Oceanographic Department (JHOD):

- Mr. Shigheru NAKABAYASHI from October 2008 until March 2011.
- Mr. Satoshi YAMAOKA since March 2011.

From the Korean Hydrographic and Oceanographic Administration (KHOA):

- Mr. Shin-Ho CHOI from December 2006 until November 2007.
- Mr. Joon Ho JIN from March 2008 until February 2009.
- Dr. Moon Bo SHIM from February 2009 until January 2010.
- Mr. Yong HUH from April 2010 until January 2011.
- Dr. Sung Ho CHOI from January 2011 until December 2011.
- Mr. Baek-Soo KIM since December 2011.

Report on the Staff Regulation Working Group

The Staff Regulations Working Group (SRWG) was established by Decision No 18 of the XVIIth International Hydrographic Conference (IHC) to study and propose changes to the Staff Regulations. A Report with comments from the FCOs, the Directing Committee and the Staff was presented to Member States for approval through Circular Letter 43/2010 dated 26 July which was later withdrawn in accordance with the request made by the Chair of the SRWG.

Report on Translation Services

The official languages of the IHO are English and French, but Spanish is also widely used within the Organization.

Normally all documents are prepared in English first and then translated into French, and into Spanish when required and as resources permit.

To enhance the French translation capability and the steadily increasing translation load, a second full-time translator has been gradually incorporated in this activity through the redeployment of existing staff. The two French Translators receive occasional assistance from French-speaking Member States and contracted experts, particularly for the translation of certain specialist texts and IHO publications.

All translations into Spanish are the responsibility of the Spanish Translator. In the case of specific technical translations or any major translation task beyond the existing possibilities, Spanish-speaking Member States have provided valuable translation support to the IHB.

Translations into English from French are normally carried out by native English speakers on the IHB staff – the Office Superintendent and the Directors' Secretary.

The above mentioned staff members also undertake proof reading in the three languages.

ELEMENT 1.6

INTERNATIONAL HYDROGRAPHIC CONFERENCES (4TH EIHC AND XVIII IHC)

4th Extraordinary International Hydrographic Conference (4EIHC)

The 4th EIHC was held at the Rainier III Auditorium in Monaco from 2 to 4 June 2009. 215 delegates participated from 61 Member States together with 31 observers from non Member States, International Organizations and non-Government International Organizations.

Captain Rachid ESSOUSSI, the Director of the Tunisian Hydrographic Service, and Vice Admiral Fernando PALMER FONSECA, the Director of the Brazilian Hydrographic Service, were elected as President and Vice-President respectively of the Conference.

The Conference was opened on Tuesday morning, 2 June, by HSH Prince Albert II. The President of the Directing Committee and the elected President of the Conference delivered opening addresses. The Secretary-General of IMO, Rear Admiral Efthimios MITROPOULOS, delivered the keynote address. Ireland and Qatar, who had joined the Organization since the previous Conference, presented their flags to the President of the Directing Committee, receiving them on behalf of the Organization.

The Conference examined 15 proposals submitted by the ISPWG, HCIWWG, MSDIWG and Member States. The Conference approved a new definition for “Hydrography” and the revised Strategic Plan of the Organization proposed by the ISPWG. More than half a day was devoted to discussing the status on ENC production and availability. Two resolutions were adopted on the availability of ENCs in order to support forthcoming mandatory carriage requirements for ECDIS and on the consistency and quality of ENCs in comparison with their corresponding paper charts. The first meeting of the S-23 WG, the first meeting of the IRCC and the celebration of World Hydrography Day also took place.

XVIIIth International Hydrographic Conference (XVIII IHC)

The 4EIHC agreed to hold the XVIIIth I.H. Conference in April 2012. The IHB DC consulted the Monegasque Government and the dates of 23 – 27 April 2012 were chosen and later announced to Member States.

In March 2011 the IHB started the preparation of the XVIII IHC by issuing Conference Circular Letter No 1, dated 11 March, announcing the Conference and providing information on the Conference Format and Programme.

The Conference documentation has been prepared and distributed in digital form. Also it has been posted on the IHO website facilitating a timely access and avoiding as far as possible the use of paper. The IHB has adhered to the Conference preparation timetable as closely as possible in the preparation and circulation of the various Conference Circular Letters and has conducted the necessary coordination to ensure a successful Conference.

**Addendum 1 to
WORK PROGRAMME No. 1
CORPORATE AFFAIRS**

—
REPORT ON WORK TO REVISE IHO PUBLICATION S-23

Report on work to revise IHO Publication S-23 – “Limits of Oceans and Seas”

A. DESCRIPTION OF ACTIVITY UP TO THE XVIIth IHC IN 2007

1. Work to develop a new edition of the publication S-23 began in 1977. The XIth IHC by Decision No 17 tasked the Bureau to undertake a revision of IHO Publication S-23, Limits of Oceans and Seas, in order to replace the existing, but out of date, 3rd edition dated 1953. In 1986 a final draft of the 4th edition of S-23 was submitted to all Member States (refer to CL N°6/1986 dated 27 February 1986). This draft 4th edition of 1986 was not approved. After the XVth IHC in 1997 the Directing Committee, in order to progress the work, decided to engage the services of a consultant.
2. In August 2002 a final draft of the 4th edition was again submitted to Member States for approval (refer to CL N°30/2002 dated 9 August 2002). In this draft 4th edition the two pages referring to the sea area between the Korean peninsula and the Japanese archipelago were not included, with an explanation given in the CL that an addendum could be issued to address the matter at a later stage. It was emphasized in the CL that the matter was of a highly sensitive political nature and was not a technical one and that the Bureau had endeavoured to finalize these two pages without success over the previous three years.
3. As a result of contacts made by Japan and the Republic of Korea to Member States' representatives and their governments, the new Directing Committee that took up its post on 1st September 2002 was immediately faced with a plethora of questions, coming from HOs, Ministries and Embassies of the Member States regarding the omission of the two pages in the draft 4th edition. As the matter of concern was beyond the technical purpose of the Organization and the Directing Committee was therefore not in a position to respond to these questions, it decided to interrupt the voting procedure and informed Member States in CL N°38/2002 dated 19 September 2002. At the time that the voting was interrupted, the Bureau had not received any voting response from Member States.
4. In January 2003, at the time of a meeting of the Strategic Planning Working Group (SPWG) in Goa, India, the Heads of the delegations of Japan and the Republic of Korea met with the President of the Directing Committee. They informed him that the two States had decided to start discussions on the issue concerning the naming of the sea area between the Korean peninsula and the Japanese archipelago, asking the Directing Committee not to take any action until the outcome of their bilateral discussions was known. Based on the reports provided by the two States it can be concluded that no significant progress was made prior to the XVIIth IHC in 2007.

B. DESCRIPTION OF ACTIVITY FROM XVIIth IHC IN 2007 TO THE XVIIIth IN 2012

5. At the XVIIth IHC in 2007, the President of the Conference proposed the publication of a 4th edition of S-23 in two volumes. One volume could incorporate all the agreed issues and could be published immediately, while a second volume would cover unresolved matters being withheld until any outstanding issues could be resolved. This proposal was not accepted.
6. Since then, several options have been proposed on how the sea area between the Korean peninsula and the Japanese archipelago could be named in S-23, but these have been rejected by either one or both of the interested States or else did not receive the support of the appropriate majority of Member States. In 2009 Member States overwhelmingly supported a proposal made by the Directing Committee for the establishment of a WG whose Terms of Reference (ToR) set the following task to *“Produce a revised edition of Special Publication S-23, Limits of Oceans and Seas, and submit a report of its work together with a 4th edition of the publication to the IHB no later than June 2011, for the subsequent approval of Member States”*. The Rules of Procedure (RoP) indicated that *“Decisions of the WG should generally be made by consensus”*.

7. The resulting S-23 WG worked mainly by correspondence and had two face-to-face meetings. The first meeting took place in Monaco on 1st June 2009 prior to the 4th EIHC and was attended by 39 delegates from 14 Member States. The second meeting was hosted in Singapore by the Hydrographic Department of the Maritime and Port Authority and was attended by 42 delegates from 13 Member States. The Report of the S-23 WG, that was circulated to Member States via CL 24/2012 dated 20 February 2012, provides an account of its work. All the details concerning the subject discussed, the minutes of the meetings, the positions expressed by the members of the WG and the letters of the Chair Group have been posted on the IHO web site. The notable issues reported in the records are:
- a. During the first meeting nobody volunteered to Chair the S-23 WG. France, supported by others, proposed that the President of the Directing Committee should take the Chair. Although any IHO WG should in principle be chaired by a representative of a Member State, in the absence of any volunteer and in order for the work to be progressed, Vice Admiral Alexandros Maratos accepted the position. Rear Admiral Christian Andreasen from USA, and past President of the IHB, was elected as Vice Chair and Ing. en chef Michel Huet from the Bureau as the Secretary;
 - b. The steps to be followed by the WG in order to progress its work on S-23 were agreed;
 - c. In accordance with the agreed work plan, it was accepted that the WG would look into three identified "areas of concern". The naming of the sea area between the Korean peninsula and the Japanese archipelago, whether Malacca and Singapore Straits should be considered as part of the Indian Ocean region or the South China Sea and the Eastern Archipelagic Seas region and proposals by China for changes in names and limits in the South China Sea, East China Sea and Yellow Sea;
 - d. There was consensus between the members of the WG that the Malacca and Singapore Straits should be considered as a single, continuous waterway, forming a separate administrative division in S-23. Members of the WG also agreed to amend the western limit of the Malacca Strait as proposed by India;
 - e. Concerning the amendments proposed by China, discussions took place during the second meeting of the S-23 WG in Singapore with follow up communication between the Chair Group and members of the WG. There was consensus between the members of the WG for some of the proposals and no consensus for two of them. These were summarized in Annex B of the Report of the WG.
8. Discussions on how to name the sea area between the Korean peninsula and the Japanese archipelago in S-23 took by far most of the time of the WG. The WG report provides a detailed description of the discussions and the problems faced. The following should be noted concerning this issue:
- a. During the second meeting of the WG it was agreed that Australia, France, Japan and the Republic of Korea would provide the Chair with their proposals in order for them to be circulated to the members of the WG for their consideration. In September 2010 France informed the members of the WG that *"it decided to withdraw its proposal, as it was not supported by the interested States and cease participating in the S-23 WG activities, due to the diplomatic dimension of the S-23 WG activities and consequently finding it impossible to provide the WG with relevant and neutral technical proposals only"*. The proposals that were presented are indicated in paragraph 3.2 of the WG report. From the responses it was apparent that there was no clear support for either of the proposals made by Japan or the Republic of Korea, while the proposal by Australia was recognized by some responders as one that could form the basis for a possible solution to this sea area;

- b. Based on the presentation, study and analysis of the proposals and comments made, the Chair Group, based on the task given to it by the WG to propose a “way forward”, proposed to the members of the WG as a “way forward”, to name this sea area as it appears in the current edition and, on the same page, to include the name(s) of State(s) expressing any reservation(s), with the indication whether the reservation refers to the name and/or to the geographical limits, details of which would then be included in an Annex. The Chair Group also proposed an “Important Notice” to be included in the Preface of S-23, which would indicate the technical nature of the S-23 publication, its restriction that it is not intended to be used for political and juridical purposes and should not be accepted as such by any legal or juridical body. From the responses received it was clear that there was not consensus on this proposed way forward;
- c. Based on the analysis of the views expressed by members of the WG, three groups of positions were identified: those which supported one name with reservations to be inserted in an Annex, those which supported more than one name to appear on the relevant page in S-23 and not in an Annex, and those, being the majority, indicating that the States concerned must come to an agreement before an update could be published and that more time should be given for such an agreement to be reached;
- d. Based on the views expressed by the majority of the WG, the WG overwhelmingly supported the proposal by the Chair Group to extend its work until early 2012 to give more time to progress matters. The Chair and Secretary of the WG had separate meetings with delegations from Japan and the Republic of Korea in October 2011 in order to explore possible ways forward. Japan and the Republic of Korea had direct consultations on 4th November 2011. These meetings were all unsuccessful in finding a way forward.

C. WAY FORWARD

- 9. The work of the S-23 WG and the positions expressed by various members of the WG have been affected significantly by diplomatic lobbying of the interested States. The highly political nature of the issue is, to a large degree, overwhelming the technical purpose of the publication and of the Organization. Based on the history of efforts over the last 20 years to find a way forward in naming this sea area, it has to be recognized that a new edition of the publication S-23 can not be progressed until an agreement between the interested States is reached. This position has been reflected most recently in the responses expressed by various Member States to CL 24/2012.
- 10. In the circumstances, noting the lack of any significant progress made over such a considerable number of years and considering that the proposals of the S-23 WG have not been accepted by Member States as indicated in CL 38/2012, the question that now has to be asked is whether Member States still wish to pursue the development of an up-to-date edition of S-23. If the answer to this question is YES, then Member States must be prepared to indicate how this can now be achieved. If the answer is NO, then Member States must decide whether the current but out of date 3rd edition of S-23, which has not been revised for nearly 60 years, will continue to be an active, but ineffective, IHO reference publication or whether the publication should be discontinued. In deciding the way forward, Member States should also consider the adverse effect on the reputation and the credibility of the Organization and its publications if it is unable to resolve this matter after so long.

**Addendum 2 to
WORK PROGRAMME No. 1
CORPORATE AFFAIRS**

IHB REPORT ON THE IMPLEMENTATION OF THE STRATEGIC PLAN

IHB REPORT ON THE IMPLEMENTATION OF THE STRATEGIC PLAN

INTRODUCTION

1 During the 4th Extraordinary International Hydrographic Conference (EIHC) in 2009 the Directing Committee (DC) expressed a concern that the implementation of the strategic planning and reporting mechanisms, proposed by the ISPWG, appeared to be complex perhaps requiring experienced and specialized personnel in a full time capacity to execute. The DC indicated that, in its proposed form, it was unlikely that the existing capacity of the Bureau would be sufficient to undertake the detailed process proposed by the ISPWG.

2 The 4th EIHC approved the IHO Strategic Plan (ISP) and Decision N° 6 requested the Directing Committee (DC) to address the preparation of the annual cycles of the new Strategic Mechanism, in consultation with the Chairmen of the IHO Committees (HSSC and IRCC). Norway offered to support the DC and to provide an expert to help in the implementation of the ISP process.

3 In September 2009 the DC communicated with the Norwegian Hydrographic Service (NHS) which made an expert available to assist in studying the various obligations and requirements implicit in the approved ISP process. Although an initial meeting took place with the assigned expert at the IHB, his continuing support was not possible because of a transfer to another Agency. This had the effect of delaying the progress of further study.

4 Circular Letter N°8/2011 reported to Member States (MS) the actions taken after the Conference. This included Work Programmes (WP) drawn up according to the approved ISP; a paper sent to the Chairs of HSSC and IRCC seeking consideration on the impact of the ISP process on their work; and a request that MS provide comments on the wider issues of the Strategic Planning Process. Only two MS responded (UK and Brazil).

5 In May 2011 a new Assistant Director (previously known as Professional Assistant) was recruited and was assigned the task to assist the DC with the development of the ISP process, following the decisions of the Conference. In August 2011 the NHS assigned its Quality Manager to engage with the IHB in developing and implementing the ISP process. An ad hoc Working Group was established between NHS and IHB.

6 The preparation of the proposed 2013-2017 Work Programme has been completed according to the planning cycle approved by Conference Resolution T5.1, organizing the three programmes to match the IHO Strategic Plan.

ISSUES CONSIDERED

7 With the support of the NHS expert, three issues were considered: the ISP process, risk management (RM) and performance indicators (PIs). It was decided, based also on comments received from the Inter Regional Coordination Committee (IRCC), not to propose any changes to the SP and to the RM, before further experience was gained. Based on NHS practice and also on the procedures followed by other international organizations and MS, the conclusion has been reached that there are too many PIs for the scope of the Organization. It is therefore proposed that the Committees (HSSC and IRCC) should look into the PIs referring to them and consider both reducing and improving them.

8 Meanwhile, the DC has taken the existing Strategic Performance Indicators (SPIs) and will use them to monitor the achievement of the Objectives of the Organization, as they have been identified in Table 1 of Annex C of the Strategic Plan 2009. Based on the experience that will be gained in the next few years and any feedback from MS, the DC will consider the need to improve or amend them and will inform Members States accordingly.

THE WAY FORWARD

9 The DC will establish a periodical review of the achievement of the Objectives of the Organization based on the SPIs, using a standardized monitoring table (balanced scorecard), through which it will report to Member States. An example of the table is attached for information. A final version will be passed to Member States via Circular Letter in due course for comments.

10 The DC will continue to liaise with the two Committees, HSSC and IRCC, in order to develop possible improvements to the Working-level PIs (WPIs) as currently described in Table 2 of Annex C of the Strategic Plan and the possible ways that the Committees might report to Member States.

11 The Conference is invited to note the report.

Strategic Performance Indicators (SPI)
Balanced Scorecard Report - Updated: dd/mm/yyyy

Objective	Strategic Performance Indicator	Status	Trend
(a) To promote the use of hydrography for the safety of navigation and all other marine purposes and to raise global awareness of the importance of hydrography.	SPI 1 Number and percentage of Coastal States providing ENC coverage directly or through an agreement with a third party.	Yellow	↑
(b) To improve global coverage, availability and quality of hydrographic data, information, products and services and to facilitate access to such data, information, products and services.	SPI 2 Growth in ENC coverage worldwide, as reported in the IHO on-line catalogue, relative to the existing gap in adequate coverage (as defined by IMO/NAV) from the benchmark 01 Aug. 2008.	Yellow	↔
	SPI 3 Percentage of Coastal States which provide hydrographic services, directly or through an agreement with a third party, categorized by CB phases, as defined by the IHO Capacity Building Strategy.	Green	↔
(c) To improve global hydrographic capability, capacity, training, science and techniques.	SPI 4 Percentage of "acceptable" CB requests which are planned.	Green	↓
	SPI 4bis Percentage of planned CB requests which are subsequently delivered	Yellow	↑
(d) To establish and enhance the development of international standards for hydrographic data, information, products, services and techniques and to achieve the greatest possible uniformity in the use of these standards.	SPI 5 Number of standards issued (including new editions), per category: - hydrographic standards to enhance safety of navigation at sea, - protection of the marine environment, - maritime security, - economic development.	Red	↔
(e) To give authoritative and timely guidance on all hydrographic matters to States and international organizations.	SPI 6 Number of potential new IHO MS (indicated by the start of the application process) relative to the number of "non-IHO" IMO MS.	Yellow	↑
(f) To facilitate coordination of hydrographic activities among the Member States.	SPI 7 Increase in participation / membership in RHCs.	Red	↔
(g) To enhance cooperation on hydrographic activities among States on a regional basis.	SPI 8 Percentage of available / agreed ENC schemes.	Green	↑

Color code: Red = Unacceptable / Yellow = Needs improvement / Green = Acceptable

Trend: ↓ = indicator descends / ↔ = indicator stable / ↑ = indicator improves

**Addendum 3 to
WORK PROGRAMME No. 1
CORPORATE AFFAIRS**

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PROGRESS REPORT OF THE STAFF REGULATIONS WORKING GROUP

Progress Report of the Staff Regulations Working Group

I. General

The XVIIth International Hydrographic Conference (IHC) established the Staff Regulations Working Group, by Decision No. 18 (PRO 19), with the following Terms of Reference:

- 1) Conduct a holistic review of the existing Staff Regulations.
- 2) Propose any changes to the Staff Regulations necessary to administer the IHB effectively using consistent and internationally accepted procedures.
- 3) Propose any additional changes to the Staff Regulations that would be necessary upon implementation of the new Secretariat organization.
- 4) Provide a Report on its work by Circular Letter to Member States in 2009.

Member States were informed of that decision by Circular Letter 103/2007, and were informed of the composition of the Working Group by Circular Letter 06/2008/Rev. Active members included:

Chair:	Ms. Ingelore Hering (Germany)
Vice Chair:	Ms. Ellen Davis (UK)
	Mr. Brian Hackett (USA).
(ex officio):	Vice Adm Alexandros Maratos (IHB)

The Chair was supported by Mr. Kai Trümpler, Federal Maritime and Hydrographic Agency, Germany. In accordance with Chapter XII of the Staff Regulations, the Staff was represented at the SRWG Meetings by Ms. Barbara Williams.

The SRWG worked mainly by correspondence. In a preliminary face-to-face-meeting (12 December 2007) the scope of the work was considered in detail. Four further face-to-face meetings took place:

- 1) Monaco, August 2008;
- 2) Taunton, April 2009;
- 3) Hamburg, March 2010;
- 4) Taunton, January 2011.

The Minutes of all Meetings are available on the IHO Website under "SRWG".

The outcome of the discussions of the SRWG was presented to the Finance Committee Officers (FCOs) at their meeting on 15 April 2011 by the President of the Directing Committee.

II. Scope of Work

The SRWG identified the following priority items for closer consideration:

- Social benefits for Directors and Staff;
- Simplification of the four existing salary tables for Category B and Category C Staff by merging them into one single table;
- Adjustments resulting from the decisions of the 3rd Extraordinary I.H. Conference and the XVIIth I.H. Conference concerning new terms and conditions for the Secretary General and Directors under the new IHO structure and the existing fixed-term contracts of Category A Staff.

In addition a thorough review of the existing Staff Regulations as a whole was carried out in order to identify any further needs for revision.

III. Proposals for Decision by Member States

The SRWG submitted its Report in July 2010, later than planned. The report was circulated to Member States for approval under cover of CL 43/2010 dated 26 July 2010. The Report was subsequently withdrawn at the request of the SRWG Chair as announced in CL 47/2010 dated 4 August 2010. Completion of the work of the SRWG was then further delayed by the departure of Ms Hering, due to other commitments.

The task of providing a Chair (previously Germany) has now passed to the Vice Chair (UK). The UKHO has provided Dr Rob Hensley for the task. He has requested that more Member States join the SRWG in order to conclude the work. CL 31/2012 has recently been circulated requesting nominations. Member States are strongly encouraged to assist in drawing the work of the SRWG to a close.

It is proposed that a revised text of the Staff Regulations be considered at a 5th Extraordinary HC in 2014.

WORK PROGRAMME 2

HYDROGRAPHIC SERVICE AND STANDARDS FOR THE PERIOD 2007-2011

TABLE OF CONTENTS

Element 2.1 Hydrographic Services and Standards Committee	HSSC
Element 2.2 IHO-IAG-IOC Advisory Board on the Law of the Sea	ABLOS
Element 2.3 Chart Standardization and Paper Chart Working Group	CSPCWG
Element 2.4 Digital Information Portrayal Working Group	DIPWG
Element 2.5 Data Protection Scheme Working Group	DPSWG
Element 2.6 Data Quality Working Group	DQWG
Element 2.7 ENC Updating Working Group	EUWG
Element 2.8 Hydrography Dictionary Working Group	HDWG
Element 2.9 Marine Spatial Data Infrastructure Working Group	MSDIWG
Element 2.10 Standardization of Nautical Publications Working Group	SNPWG
Element 2.11 Transfer Standard Maintenance and Application Development Working Group	TSMAD
Element 2.12 Tidal and Water Level Working Group	TWLWG

ELEMENT 2.1**HYDROGRAPHIC SERVICES AND STANDARDS COMMITTEE (HSSC)****REPORT OF THE COMMITTEE ON HYDROGRAPHIC SERVICES AND STANDARDS (HSSC)**

The HSSC was formed on 1 January 2009 as a result of Decisions 8 and 9 of the XVIIth IHC that brought into force a restructuring of the committees of the Organization. The HSSC provides governance, oversight and direction for the execution of the IHO's technical programme. Prior to the existence of the HSSC, the Committee on Hydrographic Requirements for Hydrographic Systems (CHRIS) performed a similar function for many parts of the IHO technical programme. The CHRIS was disbanded upon the formation of the HSSC.

This report provides information on the activities of CHRIS since the XVIIth IHC to 2009 and the HSSC since its formation.

1. Chairman:	Captain V. NAIL (UK)	CHRIS 2007–2008 HSSC 2009-2011
Vice-Chairman:	Dr. M. Jonas (Germany)	CHRIS 2008 HSSC 2009-2012
	Mr. P. OEI (Singapore)	CHRIS 2007
Secretary:	Captain R. WARD (IHB) assisted by Ing. en chef M. HUET (IHB)	HSSC from 2009
	Ing en chef M. HUET (IHB)	CHRIS until 2008

2. Participants (..) indicates how many meetings attended

IHO Member States: Argentina (2), Australia (5), Brazil (5), Canada (5), Chile (4), China (3), Cuba (0), Denmark (4), Ecuador (0), Estonia (2), Finland (5), France (5), Germany (5), Greece (3), India (0), Indonesia (2), Italy (3), Japan (5), Rep. of Korea (5), Latvia (1), Mexico (0), Netherlands (5), Norway (5), Poland (2), Portugal (3), Russian Federation (0), Saudi Arabia (2), Singapore (3), South Africa (3), Spain (3), Sweden (3), Thailand (2), Turkey (2), UK (5), USA (5).

Observers:	Chart and Nautical Instrument Trade Association(2)	CNITA
	Comité International Radio Maritime (5)	CIRM
	Cruise Lines Association International (2)	CLIA
	Defence Geospatial Information Working Group (0)	DGIWG
	General Bathymetric Chart of the Oceans (0)	GEBCO
	Inland ENC Harmonization Group (3)	IEHG
	Secretariat of the	
	Intergovernmental Oceanographic Commission (0)	IOC
	International Association of Aids to Navigation	

and Lighthouse Authorities (3)	IALA
International Centre for ENC's (4)	IC-ENC
International Chamber of Shipping (0)	ICS
International Electrotechnical Commission Technical Committee 80 (0)	IEC TC80
International Marine Pilots Association (2) Secretariat of the International Maritime Organization (0)	IMPA IMO
PRIMAR (1)	PRIMAR
Radio Technical Commission for Aeronautics (5)	RTCA
UN Department of Administration of the Law of the Sea (1)	UNDOALOS

3. Meetings

The CHRIS and then the HSSC has met each year since the XVIIth IHC, as follows:

CHRIS - 19	Rotterdam	The Netherlands	5-9 November 2007
CHRIS - 20	Niteroi	Brazil	3-7 November 2008
HSSC - 1	Singapore	Singapore	22-24 October 2009
HSSC - 2	Rostock	Germany	26-29 October 2010
HSSC - 3	IHB	Monaco	8-10 November 2011

4. Subordinate Bodies

The CHRIS, and subsequently HSSC, established a number of Working Groups in order to progress work intersessionally. In addition, the Advisory Board on the Law of the Sea (ABLOS) provided an annual report of its activities to the HSSC.

A report from the Chairs of ABLOS and each Working Group is provided in later sections of this report as follows:

Advisory Board on the Law of the Sea	ABLOS
Chart Standardization and Paper Chart Working Group	CSPCWG
Digital Information Portrayal Working Group (Colours and Symbols Maintenance Working Group until 2009)	DIPWG
Data Protection Scheme Working Group	DPSWG
Data Quality Working Group	DQWG
ENC Updating Working Group	EUWG
Hydrographic Dictionary Working Group (Committee on the Hydrographic Dictionary until 2009)	HDWG
Marine Spatial Data Infrastructure Working Group	MSDIWG
Standardization of Nautical Publications Working Group	SNPWG
Transfer Standard Maintenance and Applications Development Working Group	TSMAD

Tidal and Water Level Working Group
(Tidal Committee until 2009)

TWLWG

5. General

5.1 The HSSC was fortunate to be able to build upon the well established procedures of the CHRIS. Since its establishment, participation in HSSC meetings has increased. In particular, the increasingly active participation of Non-Governmental International Organizations (NGIO) has been of great benefit in providing a wider perspective and view on IHO activities.

Administration of Meetings

5.2 The HSSC business rules, inherited from the CHRIS, have undergone further improvement. Adherence to the timetables for the submission of agenda items and papers for consideration by the HSSC has meant that all Member States have a better opportunity to prepare their positions on subjects, even if they are unable to attend a particular meeting. Given the increased scope of the HSSC compared to CHRIS, the meetings are now supported by a Director and two Professional Assistants from the IHB. An informal meeting of the chairs of all subordinate bodies is now a regular pre-meeting activity. This meeting allows for an exchange of views, broad discussion of the topics on the agenda and better coordination between the various Working Groups.

Maintenance of Standards

5.3 Work on the maintenance of existing standards and the introduction of new ones has continued apace. More details are provided in the relevant working group reports that follow this report. The procedures for introducing new standards or making significant changes to existing standards have been further strengthened and documented more comprehensively. This has resulted in revisions to IHO Resolution 2/2007 – *Principles and Procedures for Making Changes to IHO Technical Standards and Specifications*.

6. Important Issues

S-100

6.1 The introduction of the S-100 standard in 2009 was a particularly significant event for the IHO. It has provided a contemporary geospatial standard that should greatly assist in the widest possible use of hydrographic data and information in the custody of Member States in future. It has undoubtedly raised the profile and recognition of the IHO by other geospatial data providers.

6.2 There has been an increasing level of interest shown from other international organizations in the maritime domain that may not have a suitable geospatial standard and are therefore attracted to using S-100. The IMO is promoting the use of S-100 as a fundamental data model for data and information that will be available under its e-Navigation concept. IALA and other organizations have begun investigations to use S-100 for their information and data requirements. Meanwhile, the relevant HSSC Working Groups are continuing to develop product specifications based on S-100 – particularly for next-generation ECDIS and digital nautical publications.

6.3 The S-100 Registry, developed and currently managed by the Chair of TSMAD through the support of the UKHO, is a very important supporting element of S-100. In the next few years it is expected that the list of active Submitting Organisations outside the IHO will increase as S-100 is more widely adopted. Plans are in hand to transfer the administration and management of the Registry to the IHB to ensure that a continuous and responsive service can be provided.

6.4 Further information on S-100 related developments are included in the relevant Working Group reports.

Operational Performance of ECDIS

6.5 From 2010, the HSSC has monitored the reports being made to the IMO concerning anomalies in the operation of some ECDIS systems being used at sea. Older systems, some of which do not follow newer versions of the relevant IHO standards introduced to account for changes in IMO ECDIS Performance Standards, are a particular difficulty. Other systems have been found not to follow the intentions of the IHO standards, sometimes because of ambiguity in the terms of the standards. In other cases, some deficiencies were identified in the ENC encoding practices of some Member States. These deficiencies were addressed quickly through appropriate amendments and clarifications to the standards being issued and subsequently acted upon by ENC Producers (see IHO Circular Letters 21/2010 - *Urgent Re-examination of ENC Data*, 89/2010 - *Workshop on ECDIS Software Issues* and 68/2011- *2nd IHO Technical Workshop on ECDIS Software Issues*).

6.6 In support of various cautionary notices issued by the IMO in 2010 and 2011, the IHO issued a check dataset in October 2011 that enabled mariners to conduct an ENC Portrayal and Operation check on their ECDIS fitted in ships (see CL 46/2011 - *ECDIS Data Presentation Test for Ships*). From the check, mariners could ascertain whether their ECDIS was performing as generally intended by the relevant IHO standards. In cases where this was not so, advice was provided on work-around solutions until such time as a system software upgrade could be provided. Meanwhile, the HSSC authorised a number of its working groups to review their ECDIS-related standards to remove any ambiguities and to include clarifications or revisions to make the standards more robust.

Technical Advice and Outreach

6.7 As a consequence of the success of its standards, the IHO has been called upon to provide increasing levels of guidance, explanation and assistance in their use. This support covers various aspects, but is concentrated particularly on the standards associated with digital data, particularly S-57 – *Transfer Standard for Hydrographic Data*, S-63 – *Data Protection Scheme for ENCs* and S-100 - *Universal Hydrographic Data Model*. Enquiries relating to ENC performance and ECDIS have also increased significantly. Support has been provided through a combination of the staff at the IHB seeking advice from the relevant Working groups or from certain members of the Working Groups providing advice directly.

6.8 Noting the growing technical support, assessment and outreach role and the increasing complexity of the associated standards and technology themselves, the HSSC at its 3rd meeting expressed its support for the UK IHC proposal PRO 3 – *ensuring sufficient technical resource at the IHB*.

Industry Support

6.9 Many of the IHO standards for digital data are increasingly sophisticated and specialist in nature. In some cases, their development relies on expertise and experience that is not available directly from Member States – ENC data protection and ECDIS data portrayal are examples. Over the years, the IHO has relied on the very generous support of the *expert contributors* from industry participating in the Working Groups. Their continuing involvement represents a very significant contribution, both in terms of expertise and money. Even so, there has always been a requirement to pay for some aspects of the work under contract terms. So far, this has been associated mainly with the maintenance of the IHO ECDIS Presentation Library and, more recently, the development of the Data Portrayal section of S-100. As the demand and complexity of S-100 products increase, reliance on industry or contracted support may increase. Examples include the development of a feature catalogue builder, a portrayal catalogue builder, and product catalogue services.

7. Work Programme

7.1 The HSSC Work Programme is derived from the IHO 5-Year Work Programme and is reviewed annually. At its 3rd Meeting in November 2011 the HSSC endorsed the relevant proposals for the IHO

Work Programme 2013-2017 taking into account proposals provided by each of its subordinate bodies. These proposals were forwarded to the IHB and are reflected in CONF.18/REP/01.

8. Terms of Reference

The HSSC reviewed its ToRs at its 3rd meeting in November 2011. No changes were proposed other than an editorial change to revise all references to “*Resolution T1.1*” to read “*Resolution 11/1962 as amended*”. This is because all the IHO Resolutions were renumbered in 2010.

9. Proposals for adoption by the XVIIIth I.H. Conference

The XVIIIth IH Conference is invited to:

Approve this report, including the reports of the HSSC subordinate Working Groups and ABLOS.

Approve the ongoing existence of HSSC under the Terms of Reference shown at Annex A.

Acknowledge the increasing and very important contribution being made by industry in their role as Expert Contributors, especially in the development of S-100 and its related applications, but also in the maintenance of many other IHO technical standards.

ANNEX A

COMMITTEE ON HYDROGRAPHIC SERVICES AND STANDARDS (HSSC)

Terms of Reference

HYDROGRAPHIC SERVICES AND STANDARDS COMMITTEE (HSSC)

Terms of Reference and Rules of Procedure

Ref: IHB Circular Letter No. 115/2007, dated 10 December 2007

Considering the need to promote and coordinate the development of standards, specifications and guidelines for official products and services to meet the requirements of mariners and other users of hydrographic information, the International Hydrographic Organization establishes a Hydrographic Services and Standards Committee (HSSC) with the following Terms of Reference and Rules of Procedure. The HSSC shall be the IHO Technical Steering Group acting on behalf of all Member States and shall report to each ordinary session of the International Hydrographic Conference (“*each ordinary session of the International Hydrographic Conference*” to be replaced by “*each ordinary session of the Assembly through the Council*” when the Council and Assembly are established).

1. Terms of Reference

1.1 Monitor the requirements of mariners and other users of hydrographic information concerning the use of hydrographic products and information systems that may require data and information provided by national hydrographic authorities, and to identify those technical matters that may affect the activities and products of those authorities.

1.2 Monitor the work of specified IHO Inter-Organizational Bodies engaged in hydrographic services, standards and related technical activities as directed by the International Hydrographic Conference (“*International Hydrographic Conference*” to be replaced by “*the Assembly*” when the Assembly is established) and provide advice and guidance to the IHO representatives as required.

1.3 Study and propose methods and standards for the acquisition, assessment and provision of official hydrographic data, nautical products and other related services.

1.4 Maintain technical liaison with other relevant stakeholders, such as type-approval authorities, navigation equipment manufacturers, and the hydrographic data user-community.

1.5 Prepare and maintain publications related to the objectives of the Committee.

1.6 Prepare a Committee Work Program and propose it to each ordinary session of the International Hydrographic Conference (“*each ordinary session of the International Hydrographic Conference*” to be replaced by “*the Assembly*” via the Council when the Assembly and the Council are established). Consider and decide upon proposals for new work items under the Committee Work Program, taking into account the financial, administrative and wider stakeholder consequences and the IHO Strategic Plan and Work Program.

1.7 Monitor the execution of the Committee Work Program and report to each ordinary session of the International Hydrographic Conference (“*ordinary session of the International Hydrographic Conference*” to be replaced by “*meeting of the Council*” when the Council and Assembly are established), including an evaluation of the performance achieved.

1.8 Propose to the International Hydrographic Conference (“*the International Hydrographic Conference*” to be replaced by “*the Assembly through the Council*” when the Council and Assembly are established), the establishment of new Sub-Committees, when needed, supported by a comprehensive cost-benefit analysis.

1.9 As required, establish Working Groups to fulfil the Committee Work Program, in conformance with IHO Technical Resolution ~~T1.1~~ 11/1962 as amended (*IHO Technical Resolution ~~T1.1~~ 11/1962 as amended* to be replaced by *Article 6 of the General Regulations* when the revised IHO Convention enters force) and approve their Terms of Reference and Rules of Procedure.

1.10 Monitor the work of its Sub-committees, Working Groups and other bodies directly subordinate to the Committee.

1.11 Review annually the continuing need for each Working Group previously established by the Committee.

1.12 Liaise and maintain contact with relevant IHO and other bodies to ensure that IHO work activities are coordinated.

1.13 Liaise with other relevant international organizations and Non-Government International Organizations (NGIOs).

1.14 These Terms of Reference can be amended in accordance with Technical Resolution ~~T1.1~~ 11/1962 as amended (to be replaced by Article 6 of the General Regulations when the revised text of the IHO Convention enters into force).

2. Rules of Procedure

2.1 The Committee shall be composed of representatives of Member States. The Chairs of the relevant subordinate bodies of the Committee shall attend and report at all Committee Meetings. International Organizations and accredited Non-Government International Organizations (NGIOs) may attend Committee Meetings.

2.2 A Director of the International Hydrographic Bureau (“*the International Hydrographic Bureau*” to be replaced by “*the Secretariat*” when the Secretariat is established) shall act as Secretary to the Committee. The Secretary shall prepare the reports required for submission to each ordinary session of the Conference (*the Conference* to be replaced by *Assembly* and *Council* when the Council and Assembly are established).

2.3 The Chair and Vice-Chair shall be a representative of a Member State. The election of the Chair and Vice-Chair shall be decided at the first meeting after each ordinary session of the Conference (*Conference* to be replaced by *Assembly* when the Council and Assembly are established) and shall be determined by vote of the Member States present and voting. If the Chair is unable to carry out the duties of the office, the Vice-Chair shall act as the Chair with the same powers and duties.

2.4 The Committee shall meet once a year, unless decided otherwise by the Committee, whenever possible in conjunction with another relevant conference or meeting. The venue and date of the meeting shall be decided at the previous meeting, in order to facilitate participants’ travel arrangements. Meetings should normally be scheduled to precede a session of the International Hydrographic Conference (“*International Hydrographic Conference*” to be replaced by “*Council or Assembly*” when the Council and Assembly are established) by approximately four months. The Chair or any member of the committee, with the agreement of the simple majority of all members of the Committee, can call extraordinary meetings. Confirmation of the venue and date shall normally be announced at least six months in advance. All intending participants shall inform the Chair and Secretary ideally at least one month in advance of their intention to attend meetings of the Committee.

2.5 Decisions shall generally be made by consensus. If votes are required on issues or to endorse proposals presented to the Committee, decisions shall be taken by a simple majority of Committee Members present and voting. When dealing with inter-sessional matters by correspondence, a simple majority of all Committee Members shall be required.

2.6 The draft record of meetings shall be distributed by the Secretary within six weeks of the end of meetings and participants' comments should be returned within three weeks of the date of despatch. Final minutes of meetings should be distributed to all IHO Member States and posted on the IHO website within three months after a meeting.

2.7 The working language of the Committee shall be English.

2.8 The Committee shall progress its work primarily through Working Groups, each of which shall address specific tasks. If required, a coordinating Sub-committee on Data Acquisition & Transfer Standards and a coordinating Sub-committee on Symbology & Data Presentation Standards shall coordinate the work of those working groups dealing with data and presentation standards respectively. Sub-committees and Working Groups shall operate by correspondence to the maximum extent practicable.

2.9 Recommendations of the Committee shall be submitted to IHO Member States for adoption through the IHB or International Hydrographic Conference as appropriate. ("*IHB or International Hydrographic Conference*" to be replaced by "*through the Council to the Assembly*" when the Council and Assembly are established).

2.10 These Rules of Procedure can be amended in accordance with Technical Resolution ~~F1.1~~ [11/1962 as amended](#) (to be replaced by Article 6 of the General Regulations when the revised text of the IHO Convention enters into force).

ELEMENT 2.2

IHO-IAG-IOC ADVISORY BOARD ON THE LAW OF THE SEA (ABLOS)

REPORT OF THE ADVISORY BOARD ON THE LAW OF THE SEA (ABLOS)

ABLOS is a joint board established by the International Hydrographic Organization (IHO) and the International Association of Geodesy (IAG). Following Decisions 8 and 9 of the XVIIth IHC which restructured the committees of the Organization, ABLOS was placed under the Hydrographic Services and Standards Committee (HSSC) for reporting purposes within IHO. ABLOS also reports to the Executive Committee of IAG. The task of ABLOS is to provide advice on the technical aspects of the Law of the Sea.

1. Chair:	Mr C. CARLETON (UK)(IHO)	2010 – 2012
	Prof C. RIZOS (Australia)(IAG)	2008 - 2010
	Mr S. TANI (Japan)(IHO)	2007 - 2008
Vice-Chair:	Prof S. BISNATH (Canada)(IAG)	2010 – 2012
	Mr C. CARLETON (UK)(IHO)	2008 - 2010
	Dr Z. GRŽETIĆ (Croatia)(IHO)	2007 - 2008
Secretary:	Mr S. SHIPMAN (IHB)	2007 - 2012

2. *Participants* (..) indicates number of meetings attended

IHO Member States: Brazil (5), Chile (2), Croatia (4), India (3), Japan (5), Pakistan (3), UK (5)

IAG representatives: Australia (4), Canada (4), Indonesia (4), New Zealand (1), Sweden (3)

3. **Meetings**

Since the XVIIth Conference, ABLOS has met on five occasions, as follows:

ABLOS14	Dubrovnik, Croatia	30 - 31 October 2007
ABLOS15	IHB, Monaco	14 – 15 October 2008
ABLOS16	Bali, Indonesia	4 – 5 August 2009
ABLOS17	IHB, Monaco	25 and 28 October 2010
ABLOS18	Valparaiso, Chile	9 – 11 November 2011
WG on IHO Publication C-51 “ <i>TALOS Manual</i> ”		8 November 2011 (with ABLOS 18)

4. **ABLOS Conferences**

The following ABLOS Conferences were held at the IHB in Monaco:

5 th	Theme: <i>Difficulties in Implementing the Provisions of UNCLOS</i>	15 – 17 October 2008
6 th	Theme: <i>Contentious Issues in UNCLOS - Surely Not?</i>	25 – 27 October 2010

5. **Summary of Work Undertaken**

5.1 Two major Law of the Sea Conferences as set out in paragraph 4 above were held.

5.2 A “Standard Training Programme” on the “*Technical aspects of maritime boundaries, baselines and the extended continental shelf*” for the Capacity Building Sub-Committee (CBSC). ABLOS also ran this course in Bangkok, Thailand from 15 – 19 November 2010, for the East Asia Hydrographic Commission.

5.3 A draft 5th Edition of IHO Publication C-51 “*A manual on the technical aspects of UNCLOS*”, the 4th Edition of which was published by the IHO in March 2006 is currently being prepared.

6. **Proposals for adoption by the XVIIIth I.H. Conference:**

The Conference is invited to note the report.

ELEMENT 2.3**CHART STANDARDIZATION AND PAPER CHART WORKING GROUP
(CSPCWG)****REPORT OF THE CHART STANDARDIZATION AND PAPER CHART WORKING GROUP
(CSPCWG)**

1. Chair:	Mr P. JONES (UK)	2007 - 2012
Vice-Chair:	Mr J. WOOTTON (Australia)	2008 - 2012
	Mr C. ROBERTS (Australia)	2007 - 2008
	Mr. J. MÄKINEN (Finland)	2007
Secretary:	Mr A. HEATH-COLEMAN (UK)	2007 - 2012

2. Participants (..) indicates number of meetings attended (out of 5)

IHO Member States: Australia (4), Brazil (2), Canada (4), Chile (0), Colombia (0), Denmark (4), Finland (3), France (4), Germany (4), Greece (0), India (0), Indonesia (1), Iran (0), Italy (1), Japan (1), Republic of Korea (2), Latvia (1), Netherlands (2), New Zealand (1), Norway (3), Pakistan (0), Russia (0), Republic of South Africa (1), Spain (3), Sweden (3), Ukraine (0), UK (4), USA (4).

NB: France, Germany, Spain & UK also attended sub-G meeting in Cadiz.

Attendance at CSPCWG-8 meeting not available at time of writing this report.

Expert contributors: ESRI (1), Jeppesen (1)

3. Meetings:

Since the XVIIth IHC, CSPCWG and its associated sub-WG have met as follows:

CSPCWG 4	IHB	Monaco	13-15 Nov 2007
CSPCWG 5	Sydney	Australia	18-21 Nov 2008
CSPCWG 6	IHB	Monaco	01-03 Dec 2009
CSPCWG 7	Simon's Town	South Africa	23-26 Nov 2010
CSPCWG 8	Turku	Finland	29 Nov-02 Dec 2011
INT1 sub-WG	Cadiz	Spain	16-17 Jun 2010

4. Important Issues Considered

4.1 The following activities have been carried out mainly by correspondence between CSPCWG representatives and with additional contributions from other WGs and organizations, such as IMO, IALA, and Trinity House (UK):

- The principal activity of the CSPCWG during the period has been a full (and on-going) revision of S-4 Part B - *The Chart Specifications of the IHO*. New editions or revisions of S-4 have been published at the rate of about 2 per year. Existing chart-related IHO Technical Resolutions have been incorporated into S-4 wherever possible. A completely new section B-600 - *Chart Maintenance (including the Notice to Mariners system)* was added in 2010.
- Related to the above has been the publication of more closely aligned official language versions (English, French and Spanish) of INT1 - *Symbols, Abbreviations and Terms used on Paper Charts* (by Germany, France and Spain). This work has been expedited by a sub-WG comprising the CSPCWG Secretary and representatives from Germany, France and Spain.
- A new edition of S-11 Part A - *Guidance for the Preparation and Maintenance of INT Chart Schemes* was published March 2010.
- A 2nd edition of S-49 - *Standardization of Mariners' Routeing Guides* was published in April 2010, under the guidance of a correspondence sub-WG led by Germany.

4.2 Annual meetings of the CSPCWG have been concerned mainly with consideration of new symbols and particular specification issues, as follows:

• CSPCWG4 (2007):

Symbols

- | | | |
|---|------------------------|---|
| • Mangrove | • Glossaries on charts | • Sea boundaries |
| • Magnetic anomalies – colour on charts | • Racon wave bands | • Offshore renewable energy installations |

Specifications

- | | | |
|---|--|--|
| • Symbol library | • Annex to S-4 suggested by INT 1 sub-WG | • Adoption of S-4 symbols as IHO paper chart symbol library |
| • Procedures for new / revised routeing measures (including ENC) | • Conventions for use of capital letters vs upper / lower case letters | • Recommended tracks term |
| • Initial discussions about a new 'Maintenance section' (published as B600 in 2010) | • B-450-479 revision | • Omission of redundant abbreviations for colours on multi-coloured charts |
| • Submission from Tidal Committee | | |

- **CSPCWG5 (2008):**

- Symbols

- Rounding rules for depths
- Bridge supports & detail under bridges
- New ‘Tidal’ TR A2.16: adding epoch to Chart Datum
- Disused and dismantled platforms
- Tonnage
- Offshore Renewable Energy Installations (OREI)
- Virtual AIS
- New symbol for K47 Shellfish Beds
- Pipelines in tunnels
- Inadequately surveyed/unsurveyed areas
- Emissions Control Areas

- Specifications

- Use of pictures / photographs in S-4
- T&P NMs
- Symbol library
- B-480-499 draft
- B-600 Chart Maintenance – New section

- **CSPCWG6 (2009):**

- Symbols

- Wrecks and other obstructions – use of danger circle
- Chart graticule degree figures
- Chart Accuracy notes
- Above water wellheads
- Interval of symbols in area limits
- Fish Aggregating Devices (FAD)
- Foul Ground/area
- Supplementary graduation
- Depiction of sectors at oscillating lights
- Artificial Islands
- Size of symbols
- ‘Suspended’ Oceanographic Instrumentation Moorings
- AIS:
 - Aid to navigation symbols
 - Danish trials experience
- Small craft (leisure) symbols
- Floating Wind turbines
- Dredged areas (project depth)
- Floating Waste Bin

Specifications

- B-600 progress
- Improved Data Exchange for Paper Chart Production through ENC
- Maintenance regime: comparison paper charts with ENC
- Exchange for Paper Chart Production through ENCs
- Representation of swathe surveys on Source Diagrams
- Progress on new specifications currently under consideration

- **CSPCWG7 (2010):**

Symbols

- Wrecks and other obstructions – use of danger circle
- Historic wrecks
- Reed beds
- Depiction of lights on platforms on multicoloured charts
- Artificial Islands
- Wharfside obstructions
- Diving Prohibited
- Depiction of imprecise shoal depth areas
- Depiction of surveys on Source Diagrams
- Lighthouses
- Lights on Multicoloured charts
- Development dredging

Specifications

- A-400 – consequential review required on publication of B-600
- GPS vulnerability – consequences for charting
- Superbuoys
- Colours under bridge lighting
- Enhancements to support ENC / paper chart consistency of presentation
- Sub-surface operations
- Colour abbreviations for orange and amber lights

- **CSPCWG8 (2011):**

This meeting had not taken place at the time this report was written.

5. Closing Remarks

- 5.1 All significant proposals for changes to specifications and for new chart symbols have been submitted for Member States approval and subsequently incorporated into S-4 and INT1.
- 5.2 S-11 Part A and S-49 New Editions have been approved by Member States and published.

6. Proposals for adoption by the XVIIIth I.H. Conference:

The Conference is invited to note the report.

ELEMENT 2.4

DIGITAL INFORMATION PORTRAYAL WORKING GROUP (DIPWG)

REPORT OF THE DIGITAL INFORMATION PORTRAYAL WORKING GROUP (DIPWG)

- 1. Chair:** Mr C. HARMON (USA) 2009 – 2012
 Dr M. JONAS, Germany 2007 - 2008
- Vice-Chair:** Mrs J. POWELL (USA)
- Secretary:** Mr R. COOMBES (UK)
- IHB:** Ing en chef M. HUET
- 2. Participants:** (..) indicates number of meetings attended
- IHO Member States Australia (5), Brazil (2), Canada (4), Denmark (4), Finland (5), France (4), Germany (5), Japan (3), Netherlands (2), New Zealand (1), Norway (5), South Korea (1), Sweden (3), UK (5), USA (5)
- Expert contributors CARIS (Canada) (4)
 ECC (Norway) (3)
 ESRI (USA) (3)
 Furuno (Finland) (3)
 GEOMOD (France) (4)
 HydroService AS (Norway) (1)
 IC-ENC (UK) (4)
 IIC Technologies (Canada) (4)
 Jeppesen Marine (Germany/Norway) (5)
 SevenCs (Germany) (4)
 T-Kartor (Finland) (3)
 Transas Group (Russia) (5)

Attendance at DIPWG-4 meeting not available at time of drafting this report.

3. Meetings

CSMWG-17	Stavanger	Norway	11-13 June 2007
CSMWG-18	Cape Town	South Africa	7-9 May 2008
DIPWG-1	Ontario	Canada	4-8 May 2009
DIPWG-2	Rostock	Germany	3-7 May 2010
DIPWG-3	Seoul	Republic of Korea	11-15 April 2011
DIPWG-4	IHB	Principality of Monaco	7-11 May 2012

4. Name Change

The Colours and Symbols Maintenance Working Group (CSMWG) was changed to the Digital Information Portrayal Working Group (DIPWG). The Terms of Reference of the working group were also amended to reflect its responsibilities not only to “*Maintain IHO Special Publication S-52, its accompanying Presentation Library*” but also the portrayal related elements of IHO Special Publications S-100 and S-101, as well as the Portrayal Register of the Geospatial Information Infrastructure (GII).

5. Summary of Work Undertaken

S-52 Maintenance – The routine review and maintenance of S-52 -*Specifications for Chart Content and Display Aspects of ECDIS* and its accompanying Presentation Library brought several portrayal issues to the attention of the working group. Maintenance Documents (MD) 07 and 08 were issued during this reporting period. These deferred amendments provided minor corrections and extensions to the Presentation Library related to the addition of a new symbol, changes to the symbolisation rules within look-up tables and conditional symbology procedures and the extension of colour tables to provide additional colours for the portrayal of non-charted items (mariner objects).

Reorganisation and simplification of S-52 – Edition 6.0 of S-52 was revised as a result of the IMO adoption of a revised ECDIS Performance Standard in Dec 2006 and the consequent publication of a new version (edition 3) of IEC61174 – *ECDIS - Operational and performance requirements, methods of testing and required test results*. DIPWG took advantage of the opportunity to simplify the presentation of S-52 by combining the former S-52 Appendix 2 into the main body of the standard and by eliminating redundant language.

S-100 Portrayal Register – Significant progress was made in the development of the Portrayal Register that supports S-100. The initial implementation of the register will hold S-52 symbol definitions including the storage of symbols in a graphics format that has yet to be determined. Work is nearing completion on converting S-52 symbolization rules and Conditional Symbology Procedures (CSPs) from the Nassi-Shneiderman logic diagrams used in S-52 into machine readable format that will become part of the register.

S-101 Portrayal – DIPWG worked with TSMAD to develop the S-101 Portrayal Catalogue and portrayal section of the S-101 specification. Most of this work was preparatory in nature pending the finalization of the S-100 Portrayal Register. Preparations included reviewing the existing S-52 standard and determining which sections are relevant in S-101.

ECDIS Chart 1 – An “ECDIS Chart 1” in the form of a series of ENC cells populated with an array of the most prominent S-57 feature/attribute combinations, sorted by traditional INT1 symbol categories, was developed. This will be a useful reference for mariners, as well as for type-testing procedures.

6. Closing Remarks

During the period the CSMWG broadened its focus from the maintenance of S-52 and its associated Presentation Library to also include – in partnership with TSMAD – the development and maintenance of the portrayal aspects of S-100 and S-101 and the associated Portrayal Registry and Hydro Portrayal Register. This additional role was marked by the work group changing its name to the Digital Information Portrayal Working Group (DIPWG).

The progress that DIPWG has made in these efforts is directly related to the consistent support from participating Member States, equipment manufacturers and other industry subject-matter experts, and the IHB staff.

7. Proposals for adoption by the XVIIIth I.H. Conference:

The Conference is invited to note the report.

ELEMENT 2.5
DATA PROTECTION SCHEME WORKING GROUP (DPSWG)

REPORT OF THE DATA PROTECTION SCHEME WORKING GROUP (DPSWG)

- 1. Chair:** Mr. J. Pritchard (UK) 2007 - 2012
- Vice-Chair:** Vacant
- Secretary:** Mr R Coombes (UK) 2007 - 2012
- 2. Participants** (..) indicates number of meetings attended
- IHO Member States: Australia (3), Brazil (0), Canada (1), France (1), Germany (0), Japan (0), Norway (3), UK (4)
- Expert Contributors:
- Japan Radio Company (Japan) (0)
 - Kelvin Hughes (UK) (2)
 - SevenCs GMBh(Germany) (1)
 - ChartWorld (Germany) (1)
 - SAM Electronics (Germany)(1)
 - Transas (Russian Federation) (3)
 - Furuno (Finland) (1)
 - ECC AS (Norway) (1)
 - Raytheon (Germany) (1)

3. Meetings

Since the XVIIth IHC, DPSWG has met as follows:

DPSWG5	IHB	Monaco	31 August – 1 Sep 2006
DPSWG6	IHB	Monaco	28-30 May 2007
DPSWG7	IHB	Monaco	31 Mar - 1 Apr 2009
DPSWG Workshop	IHB	Monaco	17-18 Feb 2011

Work undertaken and Important Issues Considered

4.1 The following section describes the scope of work undertaken by the DPSWG in meetings and correspondence during the period covered. It is important to note that in addition to regular working group meetings, various members of DPSWG also provide support to the ongoing management of the Data Protection Scheme when requested by IHB staff. The data protection scheme is administered by the IHB. The IHB administers the standard form of licence contract with applicants and issues the relevant data keys. The current network of ECDIS manufacturers totalled 190 by September 2011. Not all of the licensees manufacture type-approved ECDIS – but all have a requirement to embed the S-63 ENC data protection scheme in their equipment. The licensees cover a wide variety of companies across the world. The S-63 scheme is being used as the basis of several global ENC distribution services and many national Hydrographic Offices also use it to implement local ENC distribution services.

Publication of the S-63 standard

4.2 The first release of S-63 (edition 1.0) was in 2003. A revised edition of the standard was issued as edition 1.1 in 2008. The revised edition of the standard contained numerous clarifications and, in some cases, amendments. It was intended to make the standard clearer and easier to implement by the data protection scheme users. The revised edition also contained some enhancements designed to ensure manufacturer systems were compatible with a wide range of services (both local and global) and added support for large media encoding of ENC data, such as on DVD. Given the size of the worldwide ENC database, the ability to distribute ENCs on DVD media is a feature much valued by end users.

4.3 The move by users to the new edition of S-63 is not complete. This is because global providers of ENC services are required to cater to a wide range of end users that use a wide variety of ECDIS systems, some of which are known to have problems importing S-63 edition 1.1 data within particular configurations. The DPSWG has provided, and continues to provide, guidance for service providers in managing this transition and it is hoped that, in time, all service providers will adopt the latest edition of the standard for all its users.

4.4 Since the publication of S-63 edition 1.1, DPSWG meetings have focused on the production of a new edition of the standard specifically designed to interface with S-100 and its product specifications (starting with S-101, the standard for ENC). A new edition of the standard will provide at least the same protection from corruption and unauthorised use as the current standard, but may use different tools and technologies in order to do so.

5. Closing Remarks

5.1 Maintaining an appropriate data integrity and security standard will continue to be an important task in the future. As S-100/S-101 develops it will become clearer what the optimal solution is for the next-generation of ECDIS.

6. Proposals for adoption by the XVIIIth I.H. Conference:

The Conference is invited to note the report.

ELEMENT 2.6
DATA QUALITY WORKING GROUP (DQWG)

REPORT OF THE DATA QUALITY WORKING GROUP (DQWG)

- | | | |
|--------------------|------------------------|-------------|
| 1. Chair: | Mr. C. HOWLETT (UK) | 2009 – 2012 |
| | Cmdr. S. SMITH (USA) | 2007 – 2009 |
| Vice-Chair: | Mr. R. HARE (Canada) | 2011 – 2012 |
| | Vacant | 2009 – 2011 |
| | Mr. C. HOWLETT (UK) | 2007 – 2009 |
| Secretary: | Mr. E. MONG (Jeppesen) | 2011 – 2012 |
| | Vacant | 2007 – 2011 |
- 2. Participants** (..) indicates number of meetings attended (out of 5)
- IHO Member States: Brazil (0), Canada (3), Denmark (0), Ecuador (0), Finland (4), France (0), Indonesia (0), Italy (0), Japan (1), Korea (Rep of) (0), Netherlands (3), Norway (1), Slovenia (1), Sweden (2), UK (4), USA (2)
- Expert Contributors Caris (Canada) (3)
 Fugro-Pelagos (USA) (1)
 Jeppesen (USA) (3)
 University of New Hampshire (USA) (1)
 Warsash Maritime College (UK) (0)

3. Meetings

The DQWG has met on five occasions, as follows:

DQWG-1	Bath, UK	23 September 2008
DQWG-2	Portsmouth, USA	10 May 2009
DQWG-3	Rostock, Germany	5 November 2010
DQWG-4	Helsinki, Finland	14 – 17 June 2011
DQWG-5	IHB, Monaco	15 – 18 November 2011

4. Summary of Work Undertaken

4.1 The DQWG was re-formed in 2007 by CHRIS-19. Since then it has investigated how data quality indicators are used within existing products.

4.2 The first task of the DQWG was to identify how the textual descriptors relating to the CATZOC terms A1 and A2 could be adjusted to make it more practical. The existing wording required surveyors to find and measure ALL significant features - this was considered to be an almost impossible requirement. The DQWG proposed a change to the wording. This was promulgated as a change to the CATZOC definitions in CL 32/2009.

4.3 The DQWG then investigated how ENC producer HOs created their ENCs. CL 17/2010 sought information on which quality indicators were populated by HOs and CL 59/2010 asked how ENC producer HOs populate CATZOC attributes that are based on legacy data.

4.4 The final part of the DQWG fact finding exercise was the release of a questionnaire issued to mariners in February 2011. The questionnaire sought mariners' views on data quality indicators and how well they understood the existing indicators that are shown on paper charts and in ENCs.

4.5 The results of the various enquiries into data quality indicators will be analysed by the DQWG as part of developing more meaningful methods of depicting quality in navigational products. Various organisations including maritime colleges and universities will assist with this by allowing their students to evaluate the different proposals that are developed by the DQWG before proposing them to Member states for approval.

5. Proposals for adoption by the XVIIIth I.H. Conference:

The Conference is invited to note the report.

ELEMENT 2.7 ENC UPDATING WORKING GROUP (EUWG)

REPORT OF THE ENC UPDATING WORKING GROUP (EUWG)

The EUWG was created by the CHRIS at its 20th meeting (November 2008) to develop a pragmatic solution to help overcome inconsistencies in the promulgation and distribution of Temporary and Preliminary (T&P) Notices to Mariners (NtM) intended for use in ECDIS. The EUWG was also tasked to review and revise the updating mechanisms as contained in S-52 Appendix 1 - *Guidance on updating the ENC* (December 1996) for incorporation in S-65 - *ENC production guidance*.

1. Chair:	Mr Y. Le FRANC (France)	2009 - 2012
Vice-Chair:	Mr R. COOMBES (UK)	2009 - 2012
IHB	Ing en chef M. HUET	

2. Participants

IHO Member States Australia, Canada, Denmark, Finland, France, Germany, Italy, Japan, Korea (Rep. of), Latvia, Netherlands, New Zealand, Norway, Portugal, Slovenia, South Africa, Spain, Ukraine, United Kingdom, USA.

Expert Contributor Organisations IC-ENC, Jeppesen Marine, PRIMAR

3. Meetings

According to its Terms of Reference, the WG worked by correspondence. Meetings were not necessary to complete its work.

4. Summary of Work Undertaken

4.1 The EUWG developed guidelines defining the best practices to produce ENC updates equivalent to T&P NtM. Through a set of pragmatic recommendations, the guidelines identify key principles. These guidelines were published in October 2009 in edition 1.2 of S-65. These Guidelines have since been included in a new edition of Annex A to Appendix B. 1 of S-57 - *Use of the object catalogue for ENC*.

4.2 At the invitation of HSSC2 (October 2010), the IHB surveyed Member States regarding the application of these Guidelines. From the results of the survey made in 2011, it appears that the situation regarding the standardised production of T&P ENC updates is evolving most favourably.

4.3 The EUWG reviewed S-52 Appendix 1. Guidance for the production and the distribution of up to date ENC was proposed for inclusion in a new edition of S-65. The EUWG forwarded recommendations to TSMAD concerning clarifications that were required in S-57. Some were addressed in a new edition of Annex A to Appendix B. 1 of S-57. A new edition of S-52 Appendix 1 - *Guidance on updating the ENC* was drafted. It only contains elements related to the processing of up to date ENC data into an ECDIS. These elements are almost unchanged to avoid any impact on IMO and IEC specification documents on ECDIS.

4.4 HSSC 3 endorsed draft new editions of S-65 and S-52 Appendix 1. As the EUWG had then achieved its objectives it was decided to dissolve the WG after Member States have approved these two new editions.

5. Proposals for adoption by the XVIIIth I.H. Conference:

The Conference is invited to note the report.

ELEMENT 2.8 HYDROGRAPHY DICTIONARY WORKING GROUP (HDWG)

REPORT OF THE HYDROGRAPHIC DICTIONARY WORKING GROUP (HDWG)

The HDWG was formed on 1 January 2009 as a result of Decisions 8 and 9 of the XVIIth IHC that brought into force a restructuring of the committees of the Organization. The task of the HDWG is to maintain IHO Publication S-32 - *Hydrographic Dictionary*. Prior to the existence of the HDWG, the Committee on the Hydrographic Dictionary (CHD) performed the same function. The CHD was disbanded upon the formation of the HDWG.

1. Chair:	Mr J. MILLS (USA)	2007–2012
Vice-Chair:	Vacant	
Secretary:	Mr S. SHIPMAN (IHB)	2007 - 2012

2. Participants

IHO Member States: Australia, Brazil, Chile, France, Malaysia, Mexico, Uruguay, USA

3. Meetings

Since the XVIIth IHC, both the HDWG and its predecessor, the CHD, have conducted their work entirely by correspondence. The work of HDWG is conducted using a “discussion forum” at: <http://iho-discussions.org>.

4. Summary of Work Undertaken

4.1 The HDWG reviewed the terms previously included in S-52 Appendix 3 – “*Glossary of ECDIS related terms*” and prepared a new S-32 Appendix 1 - “*Glossary of ECDIS related terms*” containing 152 of the definitions originally included in S-52 Appendix 3. The 29 terms not included in S-32 Appendix 1 were further reviewed and the HDWG prepared ten new and seven amended definitions for inclusion in S-32.

4.2 Following proposals from TSMAD, the HDWG reviewed definitions from S-57 (IHO Transfer Standard for Hydrographic Data) and prepared 42 new or amended definitions for inclusion in S-32 to align it with S-57.

4.3 The HDWG considered a proposal from the Sub-Committee on Undersea Feature Names (SCUFN) for standardization between S-32 and terminology used in publication B-6 – “*Standardization of Undersea Feature Names*”, and prepared 26 new or amended definitions for inclusion in S-32.

4.4 The HDWG reviewed proposals from CSPCWG and prepared 18 new or amended definitions for inclusion in S-32.

4.5 The HDWG considered proposals from the Chair of the S-44 WG (now disbanded) and prepared seven new or amended definitions for inclusion in S-32.

4.6 The HDWG considered proposals from the Chair of the WNWWS SC and prepared 17 new or amended definitions for inclusion in S-32.

4.7 As requested by the HSSC, the HDWG prepared a definition of “Navigable Inland Waters” based on the recommendation of the Hydrography and Cartography of Inland Waters WG (HCIWWG).

4.8 The HDWG prepared a revised text of IHO Resolution 7/1929, as amended, - *Hydrographic Dictionary* which was subsequently adopted by the Organization.

4.9 The HDWG prepared a set of Business Rules setting out guidance on entries that would be appropriate for inclusion in the Hydrographic Dictionary and the way in which those entries would be managed. The criteria for inclusion of terms are based on the guidance adopted by Decision 42 of the XIIIth IHC in 1987.

5. Proposals for adoption by the XVIIIth I.H. Conference:

The Conference is invited to note the report.

ELEMENT 2.9**MARINE SPATIAL DATA INFRASTRUCTURE WORKING GROUP (MSDIWG)****REPORT OF THE MARINE SPATIAL DATA INFRASTRUCTURE WORKING GROUP
(MSDIWG)**

1. Chairman:	Ms M. KENNY (USA)	2010-2012
	Mr J. PEPPER (UK)	2008–2010
Vice-Chairman:	Vacant	2010-2012
	Ms M. KENNY (USA)	2008-2010
Secretary:	Vacant	2008 - 2012
IHB	Ing en chef M. HUET	

2. Participants: (..) indicates number of meetings attended

IHO Member States: Argentina (0), Australia (3), Brazil (0), Canada (0), Cuba (0), Denmark (3), Estonia (2), Finland (3), France (3), Germany (1), Italy (0), Japan (0), Republic of Korea (0), Latvia (0), Netherlands (3), Nigeria (1), Norway (3), Portugal (0), Romania (0), Singapore (0), Slovenia (2), Spain (1), Sweden (1), Ukraine (0), UK (3), USA (3)

Expert Contributors: CARIS (Canada)
Independent Consultant/Osborne
John Pepper Consultancy Ltd
SeaZone (UK) (2)
University of Melbourne, Australia

3. Meetings

Since the XVIIth IHC, MSDIWG has met as follows:

MSDI 1	IHB	Monaco	4-5 February 2008
MSDI 2	IHB	Monaco	10-11 September 2008
MSDI 3	IHB	Monaco	2-3 April 2009

4. Agenda Items and Activities:

4.1 The following section describes the principal agenda items and subjects that the MSDIWG has addressed during the period of the report. More details can be found in the minutes and associated documents of MSDIWG meetings on the IHO website.

Audit for MS on SDI Capabilities and Knowledge

4.2 The first meeting of the MSDIWG was held in February 2008 shortly after it was established. In order to fulfil its terms of reference, the WG decided to focus on asking the IHO Member States to indicate their level of knowledge and understanding of the benefits of supporting national spatial data initiatives and their capability to support SDI development. A questionnaire was developed that gathered information under the following categories:

- Strategy and Policy
- Communications and People
- Data Management
- Data Frameworks and Standards
- Data Dissemination

HO's were also invited to predict the status of their involvement with MSDI in three years time, what activities were planned, what barriers had been identified that might impede progress, and how the IHO might assist. The questionnaire was circulated in April 2008 with 43 States responding. The results of the survey indicated that an IHO document that provided general guidance on how HO's could become more involved in MSDI would be useful.

Special Publication C-17 and Annexes Development

4.3 In 2009, the WG began drafting an IHO publication that would provide definitive procedural guidance on how to establish the role of a national hydrographic authority in marine SDI. The WG also assembled supporting material to be made available via the IHO website. The publication C-17 - *Spatial Data Infrastructures: "The Marine Dimension" – Guidance for Hydrographic Offices* was completed in mid-2009 and adopted by Member States in 2010. Four supporting papers were developed that same year covering:

- SDI Frequently Asked Questions
- Capacity Building Material – SDI Awareness Training Course (Template)
- SDI Stakeholders
- Hydrographic Data Policy for SDI – Best Practice Guidelines for HOs

These papers were added to C-17 as annexes in 2010.

Information Paper Updating Marine SDI Activities of Various Member States

4.4 An Information Paper was submitted to the HSSC in 2010 that provided an update on marine SDI activities in certain States. This paper was compiled from input obtained from various MSDIWG members and expert contributors on activities that had occurred in the recent past. An overview on the EU INSPIRE initiative was also included.

Work Plan Development

4.5 In the last year, those Member States that have been active in the MSDIWG have participated in two conference calls to discuss the work plan for the upcoming year and to discuss the future of the group. The use of conference call services and WebEx proved very successful for allowing exchange of ideas and encouraging open dialogue.

5. Closing Remarks

5.1 Responses from the questionnaire distributed in 2008 identified that there was a large gap between the developed and emerging nations with regard to how SDI has been implemented, and that some Member States anticipated improvements over the next three years (by 2011).

5.2 In 2010, Member States reported that the non-navigational use of hydrographic data continues to increase. Work continues in those Member States to make their hydrographic data more accessible. Funding or resource constraints appear to be impeding progress in marine SDI, which is being hampered by a lack of metadata and mechanisms to allow ease of access to available data. The hydrographic and oceanographic communities lag behind the land and air domains in implementing SDI.

5.3 The MSDIWG considers that the Capacity Building Sub-Committee (CBSC) and the Regional Hydrographic Commissions have a key role in assisting States to contribute to MSDI through education of both developing and developed Member States on the benefits of SDI and by facilitating discussion on this topic as opportunities arise.

6. Proposals for adoption by the XVIIIth I.H. Conference:

The Conference is invited to note the report.

ELEMENT 2.10**STANDARDIZATION OF NAUTICAL PUBLICATIONS WORKING GROUP
(SNPWG)****REPORT OF THE STANDARDIZATION OF NAUTICAL PUBLICATIONS WORKING
GROUP (SNPWG)**

- 1. Chair:** Mr. D. ACLAND (UK) 2007 - 2012
- Vice-Chair:** Herr J. SCHRÖDER-FURSTENERG (Germany) 2007 - 2012
- Secretary:** Vacant
- IHB:** Mr A. PHARAOH
- 2. Participants:** (..) indicates number of meetings attended
- IHO Member States Argentina (2), Brazil (3), Denmark (6), Estonia (3), Finland (1), France (6), Germany (6), Japan (5), Korea, Rep of (3), The Netherlands (2), Norway (4), Spain (1), UK (6), USA (6).
- Expert contributors CARIS (Canada) (2)
CherSoft (UK) (1)
Esri (Japan) (1)
Interschalt (Germany) (2)
Jeppesen Marine (US) (5)
NOVACO (UK) (2)
University of New Hampshire (US) (1)

3. Meetings

3.1 Since the XVIIth IHC the SNPWG met as follows:

SNPWG 8	Monaco	Monaco	3-7 Sep 2007
SNPWG 9	Brest	France	21-25 Apr 2008
SNPWG 10	Norfolk	USA	23-27 Feb 2009
SNPWG 11	Monaco	Monaco	7-11 Sep 2009
SNPWG 12	Tokyo	Japan	21-25 Jun 2010
SNPWG 13	Stavanger	Norway	4-8 Apr 2011
SNPWG 14	Monaco	Monaco	13-17 Feb 2012

4. Summary of Work Undertaken

4.1 The scoping statement for nautical publications, agreed shortly before this reporting period, was used as the principal input to build the nautical publications Feature Concept Dictionary (FCD). This task started using MS Word but was subsequently transferred to a website using Wikipedia technology. The

FCD continues to expand. A start has been made to populate the NPUBS domain of the S-100 Geospatial Information Registry with the features and attributes developed in the SNPWG Wikipedia website.

4.2 Sample textual datasets were written for the waters covered by the S-64 test datasets. Excerpts from these and other nautical publications were then mapped to the rapidly expanding SNPWG data model in order to test the concept.

4.3 A sample product specification was produced for a notional product. As soon as the character of S-100 became clear, work began to draft a simple product specification for a real product. The Marine Environmental Protection Programme task provided a suitable candidate. An application schema was drafted for Marine Protected Areas using features and attributes from both the HYDRO and NPUBS domains. An MPA product specification is now in draft form.

4.4 SNPWG was kept informed of investigative work being conducted by the hydrographic authorities of Denmark, Germany and Norway, and Jeppesen Marine on the development of other related product specifications. Discussion with DIPWG has now started on the portrayal of nautical publications information.

5. Closing Remarks

5.1 The content of nautical publications covers a far wider spread of subject matter than is contained on a nautical chart so the NPUBS Feature Concept Dictionary will probably contain more features and attributes than found in ENC's. NPUBS contain several classes of information which are not geographic so this information will be held as information features. A change to the general feature model of S-100 was required to support the relationships which exist between information and geographic features contained in nautical publications.

5.2 It is possible to map very well structured text held in nautical publications to features in the SNPWG data model, but it becomes increasingly difficult with information currently held in long textual paragraphs.

5.3 Population of the NPUBS domain of the S-100 GI Registry should proceed slowly and only when the design of features is sufficiently stable.

5.4 The production of feature-based products containing information from nautical publications is likely to be a long term project that will take many years to achieve.

6. Proposals for adoption by the XVIIIth I.H. Conference:

The Conference is invited to note the report.

ELEMENT 2.11**TRANSFER STANDARD MAINTENANCE AND APPLICATION DEVELOPMENT
WORKING GROUP (TSMAD)****REPORT OF THE TRANSFER STANDARD MAINTENANCE AND APPLICATION
DEVELOPMENT WORKING GROUP (TSMAD)**

1. Chair:	Mr. B. GREENSLADE (UK)	2007 - 2012
Vice-Chair:	Mrs. J. POWELL (USA)	2011-2012
	Ing en chef. J-L DÉNIEL (France)	2009 - 2011
	Mr. D. VACHON (Canada)	2007 - 2009
Secretary:	Mr. A. PHARAOH (IHB)	2007 - 2012

2. Participants (..) indicates number of meetings attended (not including TSMAD 23)

IHO Member States: Australia (11), Belgium (0), Brazil (4), Canada (9), Denmark (9), Estonia (0), Finland (8), France (11), Germany (11), Italy (1), Japan (8), Republic of Korea (2), Netherlands (3), New Zealand (2), Norway (10), Republic of South Africa (5), Singapore (1), Spain (1), Sweden (9), UK (16), USA (15), Venezuela (1)

Expert Contributors:

- Caris (Canada) (15)
- ESRI (USA) (13)
- Furuno (Finland) (4)
- GEOMOD (France) (3)
- IDON Technologies (Canada) (1)
- IIC Technologies (Canada) (11)
- International Centre for ENC's (8) (IC-ENC)
- Jeppesen Marine (Canada, Italy, Germany) (14)
- L-3 Communications (Australia) (1)
- PRIMAR (7)
- SevenCs (Germany) (12)
- TKartor (Sweden) (6)
- Transas (Russia) (7)

3. Meetings

Since the XVIIth IHC, TSMAD and its associated task groups have met as follows:

TSMAD-14	Taunton	UK	4 - 8 June 2007
TSMAD-14 (continued) / CSMWG-17 joint meeting	Stavanger	Norway	11 - 13 June 2007

TSMAD S-100 Focus Group	Hamburg	Germany	17-21 September 2007
TSMAD-15	IHB	Monaco	14 - 18 January 2008
1 st ECDIS S-101 Stakeholder Workshop	IHB	Monaco	3 - 7 March 2008
TSMAD 16/CSMWG 18 Joint Meeting	Cape Town	South Africa	5 - 9 May 2008
TSMAD-MEPTG	San Francisco	USA	3 - 5 June 2008
TSMAD-17	Seattle	USA	8-12 September 2008
TSMAD 18/DIPWG-1, Joint Meeting	Ottawa	Canada	4 - 8 May 2009
TSMAD S-100 Sub-WG	Taunton	UK	1 - 3 May 2009
TSMAD-19	Sydney	Australia	26 - 30 Oct 2009
2 nd S-101 Stakeholders' Workshop	Taunton	UK	9 - 11 March 2010
TSMAD 20/DIPWG-2 Joint Meeting	Rostock	Germany	3-7 May 2010
TSMAD S-101 Sub-WG	Taunton	UK	17 - 19 Aug 2010
TSMAD-21	Victoria	Canada	29 Nov-3 Dec 2010
TSMAD-22 / DIPWG-3 Joint Meeting	Seoul	Republic of Korea	11 - 15 April 2011
TSMAD / IALA e-Navigation liaison meeting	Taunton	UK	3 - 5 May 2011
TSMAD / DIPWG S-100 Sub-WG	Hamburg	Germany	14 - 15 June 2011
TSMAD-23	Wellington	New Zealand	16 - 20 Jan 2012

4. Important Issues Considered

4.1 The following section describes the main topics that TSMAD has progressed during the period of the report. More details can be found in the minutes of TSMAD meetings on the IHO website. Of particular note are the regular joint meetings held with the Digital Information WG that have been essential in the development of the portrayal content of S-100 and S-101.

S-100 IHO Universal Hydrographic Data Model

4.2 The major project for TSMAD has been the continuous preparation of S-100. Included with this, a web interface has been developed to service the S-100 Geospatial Registry. TSMAD, in co-operation with IHB, developed S-99 - *Operational Procedures for the Organization and Management of the S-100 Geospatial Information Registry*. S-100 was adopted as an IHO standard on 1 January 2010. S-99 was adopted one year later.

S-101 ENC Product Specification

4.3 S-101 is the next-generation ENC Product Specification. It is being developed in four stages of which the first stage was completed in December 2011. The first stage demonstrates the ability to create basic S-101 data from existing S-57 data. A converter has been developed by the United States (NOAA)

and ESRI to test this capability. The availability of this converter should allow HO's to create basic S-100 based ENC data without the need to upgrade or replace existing ENC production software in the short to medium term. Once extensive testing has been completed the converter tool will be available free-of-charge from the IHO.

4.4 Subsequent stages of S-101 development will include the new components and functionality contained in S-100. They include improved management of text and picture files, improved portrayal of S-101 data within an ECDIS and utilize the plug and play capabilities of exchangeable feature and portrayal catalogues. This will require the development of a test-bed in the form of a viewer to thoroughly test S-101 before any test data is distributed more widely. It is hoped that this test-bed will be developed shortly. It is planned that the main part of S-101 will be completed late in 2012 or early in 2013. However, S-101 will not be submitted to Member States for adoption as an IHO standard until exhaustive testing has been completed and an implementation plan is agreed.

S-102 Bathymetric Surface Product Specification

4.5 A final draft of S-102 - *Bathymetric Surface Product Specification* was completed in 2011 for adoption by Member States as an IHO standard in early 2012. S-102 has been developed as an S-100 compliant version of the Bathymetric Attributed Grid (BAG) specified by the Open Navigation Surface project initiated by academics primarily from The Center for Coastal and Ocean Mapping (CCOM)/ Joint Hydrographic Center (JHC) of the University of New Hampshire, USA. The Open Navigation Surface Project is an open-source software project designed to provide a freely available, portable source-code library to encapsulate gridded bathymetric surfaces with associated uncertainty values. BAGs may be used alone or may be combined with ENC or other S-100 compatible data. As such the Bathymetric Surface product specification serves as one of the many possible additional layers that may be integrated with other S-100 products for use with ENCs in the future.

S-57 Supplements Number 1 and 2

4.6 Due to the S-57 data transfer standard being frozen, a new concept of publishing supplements to S-57 was introduced in 2007 as a method of extending key appendices.

4.7 Supplement No. 1 addressed new IMO requirements for *Archipelagic Sea Lanes* (ASL), *Particularly Sensitive Sea Areas* (PSSA) and *Environmentally Sensitive Sea Areas* (ESSA). At the same time a new feature NEWOBJ (new object) was included to allow for the encoding and display of other, as yet unknown, navigationally important requirements in the future.

4.8 Supplement No. 2 was promulgated to address issues with the temporal attribution of certain equipment objects and to update details of the attribute Category of *Zone of Confidence*. The contents of Supplement No. 1 were merged into Supplement 2.

S-57 APPENDIX B.1 Annex A - Use of the Object Catalogue for ENC

4.9 The *Use of the Object Catalogue for ENC* was revised in 2011 in order to rationalize the encoding advice which had proliferated in the form of Encoding Bulletins, Frequently Asked Questions and appendices to S-65 since 2000 when the S-57 standard was effectively frozen.

Maintenance of Other TSMAD Publications

4.10 A new version of S-64 - *IHO Test Data Sets for ECDIS* was produced in 2008 to address the various changes and requirements for new tests since its first publication in 2003. Further revision and updating is currently taking place to enable testing for issues that have been identified more recently.

4.11 Several new versions of S-58 - *Recommended ENC Validation Checks* were published between 2007 and 2011 in order to maintain or introduce new tests and ensure that the critical validation of ENCs is as efficient as possible.

Outreach

4.12 TSMAD has provided technical support to various IHO working groups and external organizations, mostly in support of the use of S-100. These include the SNPWG, TWLWG, DQWG, UN-DOALOS and the IALA e-Navigation Committee.

4.13 Assistance to UN-DOALOS enabled the development of an S-100 based product specification for the delivery of geospatial data in support of the boundary limit claims being submitted under the UN Convention of the Law of the Sea (UNCLOS).

4.14 TSMAD also hosted two S-101 Stakeholders' meetings to obtain user input to the development of S-101 and to keep stakeholders informed of progress.

5. Closing Remarks

5.1 The period covered by this report has been the busiest for TSMAD since the development of S-57 in the early 1990s. S-100 is beginning to fulfil its intended potential to support better interoperability between product specifications leading to more cost effective implementation of system requirements. This would not have been possible without the participation and generosity of those expert contributors from industry that have participated in the development and maintenance of the standards assigned to TSMAD.

5.2 S-101, the new generation ENC product specification is progressing well, but it must be stressed that its introduction and adoption as an IHO standard depends on thorough testing, stakeholder involvement and a viable transition strategy that allows HO's, ECDIS equipment manufacturers and mariners to move smoothly from S-57 to S-101.

5.3 The following list details the current versions of publications maintained by TSMAD:

S-57 3.1.0 published November 2000

S-64 1.1.0 published December 2008

S-57 Supplement No. 2 published June 2009

S-65 1.2.0 published October 2009

S-100 1.0.0 published as an active standard January 2010

S-100 1.0.0 Geospatial Information Registry launched January 2011

S-58 4.2.0 published February 2011

6. Proposals for adoption by the XVIIIth I.H. Conference:

The Conference is invited to note the report.

ELEMENT 2.12
TIDAL AND WATER LEVEL WORKING GROUP (TWLWG)

REPORT OF THE TIDAL AND WATER LEVEL WORKING GROUP (TWLWG)

The TWLWG was formed on 1 January 2009 as a result of Decisions 8 and 9 of the XVIIth IHC that brought into force a restructuring of the committees of the Organization. The task of the TWLWG is to provide technical advice and coordination on tidal, water level and vertical datum matters. Prior to the existence of the TWLWG, the Tidal Committee (IHOTC) performed the same function. The IHOTC was disbanded upon the formation of the TWLWG.

1. Chair:	Mr S. GILL (USA)	2008 – 2012
	Mr J. PAGE (UK)	2007
Vice-Chair:	Ms Z. JAYASWAL (Australia)	2011 – 2012
	Mme L. PINEAU (France)	2009 - 2010
Secretary:	Mr S. SHIPMAN (IHB)	2007 - 2012

2. Participants (..) indicates number of meetings attended

IHO Member States: Australia (4), Brazil (3), Canada (3), Chile (3), China (1), Cuba (0), Denmark (2), Ecuador (0), Estonia (1), Finland (3), France (4), Germany (0), India (0), Indonesia (0), Italy (0), Japan (1), Republic of Korea (2), New Zealand (0), Norway (4), Peru (1), Portugal (3), South Africa (3), Spain (3), UK (4), Uruguay (0), USA (3), Venezuela (1).

3. Meetings

Since the XVIIth Conference, four meetings have taken place, as follows:

TC8	Halifax, Canada	23 – 26 October 2007
TWLWG1	Niteroi, Brazil	30 March – 1 April 2009
TWLWG2	Stavanger, Norway	27 – 29 April 2010
TWLWG3	Jeju Island, Republic of Korea	5 – 7 April 2011

4. Summary of Work Undertaken

4.1 The Standard Tidal Constituent List and an inventory of tide gauges used by IHO Member States was updated and published on the TWLWG web page.

4.2 An XML format for the exchange of Harmonic constants was published.

4.3 Amendments to IHO resolutions concerning tidal and water level matters were reviewed and subsequently adopted by Member States. The TWLWG advised the CSPCWG on tidal and water level matters with respect to IHO Publication S-4 “*Regulations of the IHO for International (INT) Charts and Chart Specifications of the IHO*”.

4.4 The TWLWG assisted in the preparation of an English text of a French publication on “*Coastal Tides*” by providing advice to the translator; and proof reading the English translation. This manual was written by Mr Bernard SIMON, a former French member of the Tidal Committee and will be published by the *Institut Océanographique* in Paris. A free copy is being made available to IHO Member States.

4.5 Progress was made on the development of standards for Digital Tide Tables and for the transmission of real-time tidal data.

4.6 Progress was made on the dynamic application of tides in ECDIS in association with the work of the TSMAD WG and the DIPWG.

4.6 An outline structure for a short course on “*Tides for Hydrography*” was prepared for the Capacity Building Sub-Committee.

4.7 A study to compare tidal predictions generated from a common data set using different analysis software is continuing.

4.8 A study of long term data sets for the determination of global sea level rise is continuing.

5. Proposals for adoption by the XVIIIth I.H. Conference:

The Conference is invited to note the report.

WORK PROGRAMME 3

INTER REGIONAL COORDINATION & SUPPORT FOR THE PERIOD 2007-2011

TABLE OF CONTENTS

Element 3.1 Co-operation with Member States and attendance at relevant meetings

- Report by the Inter Regional Coordination Committee (IRCC)
- Report by the Regional Hydrographic Commissions (RHCs):
 - 1 Arctic Regional Hydrographic Commission (ARHC)
 - 2 Baltic Sea Hydrographic Commission (BSHC)
 - 3 East Asia Hydrographic Commission (EAHC)
 - 4 Eastern Atlantic Hydrographic Commission (EAHC)
 - 5 Mediterranean and Black Seas Hydrographic Commission (MBSHC)
 - 6 Meso American and Caribbean Hydrographic Commission (MACHC)
 - 7 Nordic Hydrographic Commission (NHC)
 - 8 North Indian Ocean Hydrographic Commission (NIOHC)
 - 9 North Sea Hydrographic Commission (NSHC)
 - 10 ROPME Sea Area Hydrographic Commission (RSAHC)
 - 11 South East Pacific Hydrographic Commission (SEPHC)
 - 12 Southern Africa and Islands Hydrographic Commission (SAIHC)
 - 13 South West Atlantic Hydrographic Commission (SWAHC)
 - 14 South West Pacific Hydrographic Commission (SWPHC)
 - 15 USA and Canada Hydrographic Commission (USCHC)
- Report by the Hydrographic Commission on Antarctica (HCA)

Element 3.2 Increase Participation by non-Member States

(Included under each individual RHC Report under Element 3.1 when applicable)

Element 3.3 Capacity Building Management

- Report by the Capacity Building Sub-Committee
- Report on the Capacity Building Fund (CBFUND)
- Report by the FIG/IHO/ICA International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC)

Element 3.4 Capacity Building Assessment

- Report on Capacity Building Assessment

Element 3.5 Capacity Building Provision

- Report on Capacity Building Provision

Element 3.6 Coordination of Global Surveying and Charting

- Report by the Worldwide ENC Database Working Group (WEND WG)

Element 3.7 Maritime Safety Information

- Report by the World Wide Navigation Warning System Sub-Committee (WNWSSC)

Element 3.8 Ocean Mapping Programme

- Report by the GEBCO Guiding Committee (GGC)
- Report by the IHO - Data Center for Digital Bathymetry (DCDB)

ELEMENT 3.1

CO-OPERATION WITH MEMBER STATES AND ATTENDANCE AT RELEVANT MEETINGS

REPORT BY THE INTER REGIONAL COORDINATION COMMITTEE (IRCC)

1. **Chair:** Ing. Gen. Gilles BESSERO (France)
Vice-Chair: Capt. Abri KAMPFER (South Africa)
2. **Membership:**
- Members:** Chairs of the Regional Hydrographic Commissions (RHCs):
 Nordic Hydrographic Commission (NHC)
 North Sea Hydrographic Commission (NSHC)
 East Asia Hydrographic Commission (EAHC)
 United States Canada Hydrographic Commission (USCHC)
 Mediterranean and Black Seas Hydrographic Commission (MBSHC)
 Baltic Sea Hydrographic Commission (BSHC)
 Eastern Atlantic Hydrographic Commission (EAtHC)
 South East Pacific Hydrographic Commission (SEPHC)
 South West Pacific Hydrographic Commission (SWPHC)
 Meso-American - Caribbean Sea Hydrographic Commission (MACHC)
 Southern Africa and Islands Hydrographic Commission (SAIHC)
 ROPME Sea Area Hydrographic Commission (RSAHC)
 North Indian Ocean Hydrographic Commission (NIOHC)
 South West Atlantic Hydrographic Commission (SWAtHC)
 Arctic Regional Hydrographic Commission (ARHC) *from 2011*
- Chair of the Hydrographic Commission on Antarctica (HCA)
 Chair of the Capacity Building Sub-Committee (CBSC)
 Chair of the Worldwide Navigational Warning Service Sub-Committee (WWNWSC)
 Chair of the International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC)
 Chair of the General Bathymetric Chart of the Oceans (GEBCO) Guiding Committee (GGC)
 Chair of the Worldwide Electronic Navigational chart Database (WEND) Working Group
- Observers¹:** IHO Member States:
 Australia, Brazil, China, Colombia, Denmark, Finland, France, Germany, Japan, Mexico, Mozambique, Nigeria, Norway, Peru, Sweden, Thailand, Turkey, UK, USA
- Non-Government International Organizations (NGIOs):
 RTCA
3. **Meetings:**
 The Committee was established on 1st January 2009 (ref. CL 94/2008) and has met annually since that date, in accordance with the Rules of Procedure:
 - IRCC 1: 5 June 2009, Monaco;

¹ List of the observers who attended at least one meeting of the Committee.

- IRCC 2: 17-18 June 2010, New Orleans, USA;
- IRCC 3: 26-27 May 2011, Niteroi, Brazil.

4. Agenda Items:

The purpose of the Committee is to promote and coordinate those activities that might benefit from a regional approach. Its principal objectives are to:

- establish, coordinate and enhance cooperation in hydrographic activities amongst States on a regional basis, and between regions;
- establish co-operation to enhance the delivery of capacity building programmes;
- monitor the work of specified IHO Inter-Organizational Bodies engaged in activities that require inter-regional cooperation and coordination;
- promote co-operation between pertinent regional organizations and review and implement the IHO Capacity Building Strategy, promoting Capacity Building initiatives.

The IRCC assumes the responsibility of the policy matters related to the WEND until the Council is established.

The standing agenda of the Committee is provided in annex.

The main subjects dealt with during the period were the following:

- the status of approval of the Protocol of Amendments to the IHO Convention;
- the ways and means to increase the participation of Non-member States in IHO activities;
- the development of the WEND;
- the implementation of the IHO strategic planning mechanism;
- the methodologies in use for displaying information on survey status and the development of IHO Publication C-55;
- the consolidation of the relations between RHCs and GEBCO;
- the implementation of the guidance for preparing and maintaining INT Charts (S-11);
- the experiences in dealing with handling marine disasters;
- the relations with the IHO Stakeholders' Forum.

5. Conclusions:

- IRCC invited RHCs and the IHB to take specific actions to accelerate the process of ratification of the Protocol of Amendments to the IHO Convention in order to reach final approval in time for the 2012 IHO Conference to be the first Assembly (i.e. a minimum of 48 notifications before 23 January 2012) (ongoing - see CL 58/2011);
- IRCC invited RHCs to encourage the re-insertion in IHO of suspended Member States and the ratification of the IHO Convention by pending applicants and to monitor the swift approval by Member States of pending applications for IHO membership (ongoing).
- IRCC invited the Arctic Regional Hydrographic Commission (ARHC) to resolve the definition of the southern borders of the ARHC area and associated INT Chart scheme, in conjunction with neighbouring RHCs (ongoing - see ARHC report).
- IRCC agreed an action to design a suitable framework for the development of IHO Publication C-55 (Status of Hydrographic Surveying and Nautical Cartography World-wide) (ongoing as a specific pluriannual task identified in the IHO 2012 Work Programme and in the draft IHO 2013-2017 Work Programme submitted to the Conference). [See CONF.18/WP.3/Add.1]
- IRCC established the WEND Working Group in line with the recommendation of the former WEND Committee (ref. CL 82/2008) and set up and monitored its work programme (ongoing - see WEND WG report);
- IRCC agreed to recommend to the IHO Conference (or Assembly) in 2012 to postpone any revision of the IHO Strategic Plan to the next Conference / Assembly and to concentrate on the implementation issues. In that perspective, the Committee agreed a procedure to assess its contribution to the implementation of the preceding year's Work Programme and to collate its input for the preparation of the next year's Work Programme. The Committee also invited the IHB Directing Committee to start implementing the Strategic level Performance Indicators (SPIs) approved by the 4th EIHC and discussed

the working level performance indicators which are appropriate for monitoring the IRCC Work Programme and feeding into the SPIs (ongoing).

- IRCC invited RHCs to take action on the lack of follow-up reports from countries receiving support from the Capacity Building Fund (permanent).
- IRCC invited GEBCO Guiding Committee / Bathymetric Regional Project Chairs to attend corresponding RHCs meetings, aiming at strengthening collaboration with a priority on improving high resolution shallow water bathymetry at the regional level (ongoing - see GEBCO GC report).
- Regarding the IHO Stakeholders' Forum, IRCC recognized the importance of ECDIS related issues and recommended to focus relations with stakeholders on them. It agreed that it was too premature to organize a Forum prior to or in connection with the IHO Conference (or Assembly) in 2012 and tasked the IRCC Chair to liaise with the HSSC Chair on the way forward, aiming at submitting a report to the IHO Conference (or Assembly) (ongoing - *to be discussed at HSSC3*).
- IRCC invited the IHB to consider with SWAtHC the appropriate level of participation in the RIO + 20 process, in line with the IHO strategic directions (ongoing).
- On the recommendation of IRCC, chart specification A402.1 in Publication S-4 was amended to facilitate the access of INT chart producers to new data (done - see CL 50/2010 and 69/2010);
- On the recommendation of IRCC, IHO Resolution 2/2007 was amended to accommodate standards under the purview of IRCC (done - see CL 37/2011 and 50/2011).

6. Proposals for adoption by the XVIIIth I.H. Conference:

The Conference is invited:

(a) to note the report;

(b) to consider the following proposals:

PRO IRCC-1 - Update of the IHO Strategic Plan

IHO Resolution 12/2002 as amended stipulates that Member States, HSSC and IRCC will be invited 12 months before each ordinary Conference to provide input to update the IHO Strategic Plan:

“Y-12 (Apr): IHB invites HSSC and IRCC to submit proposals to update the Strategic Plan.”

For the first time line of 2012, noting that the strategic directions of the 2009 edition remain highly relevant and considering that the implementation of the 2009 Strategic Plan is still in its initial stage IRCC recommends that the Conference postpone any revision to the next ordinary session of the Conference / Assembly and concentrate on the implementation issues, namely performance monitoring and risk assessment, when discussing the next 5-year Work Programme.

PRO IRCC-2 - IHO Stakeholders' Forum (Joint HSSC-IRCC Proposal)

Noting that each strategic direction of the IHO Strategic Plan identifies one or more issues requiring some interaction with the IHO Stakeholders which involve both a “top down” approach (IHO towards its Stakeholders) and a “bottom up” approach (Stakeholders towards IHO);

Noting that the IHO would benefit from both improving its visibility in non-IHO events related with its activities and organizing specific IHO encounters with its Stakeholders;

Noting that the IHB maintains three lists of Stakeholders:

- the list of International Organizations which have signed a MOU or a Cooperative Agreement with the IHO,
- the list of Non-Governmental International Organizations (NGIOs) accredited as Observers,
- the list of ECDIS Stakeholders;

Supporting the recommendation that the IHO should continue to take a leading role within the ECDIS Stakeholder community;

HSSC and IRCC invite the Conference to approve the following action plan regarding outreach to IHO Stakeholders:

- (a) the IHB is invited, through annual inputs from HSSC, IRCC, as well as from individual IHO Member States, to maintain an inventory of IHO Stakeholders based on the existing lists and expanded to all relevant sectors such as industry (outside the ECDIS community), academia and the media, with the identification of the main items of interest for each Stakeholder or Stakeholders' group;
- (b) both HSSC and IRCC Committees are invited to identify annually which items of their Work Programmes could benefit from exchanges with the relevant Stakeholders;
- (c) the IHB is invited to canvas the IHO Stakeholders biennially about specific proposals for discussion topics;
- (d) the IHB is invited to develop the participation of IHO, through the presence of IHB representatives or through the presence of representatives of IHO Member States, in non-IHO events of interest, to be identified in the IHO Work Programme, based on annual inputs from HSSC, IRCC and individual IHO Member States;
- (e) the IHB is invited to plan biennial IHO Stakeholders' Forum Meetings in the IHO Work Programme subject to:
 - developing from (b) and (c) above an appropriate agenda with specific issues to be addressed,
 - identifying a venue susceptible to attract the targeted audience,
 - securing a sufficient commitment of the relevant IHO bodies and IHO Member States to contribute and participate effectively.
- (f) the IHB is invited to consider organizing the next IHO Stakeholders' Forum as soon as possible after the IH Conference/Assembly and not later than 2013 and to focus on ECDIS related issues, with the support of HSSC and IRCC.

(c) to note that IRCC supports the following proposals submitted by IRCC related bodies:

Proposal submitted by ARHC:

PRO ARHC - Amendment to the General Regulations of the IHO

The IH Conference is invited to adopt the following amendment to the Annex to the General Regulations of the IHO as approved by Decision 3 of the 17th IHC:

- replace :
 - “13. US/Canada Hydrographic Commission (USCHC); and
 - 14. South West Atlantic Hydrographic Commission (SWAtHC).”
- with:
 - “13. US/Canada Hydrographic Commission (USCHC);
 - 14. South West Atlantic Hydrographic Commission (SWAtHC); and
 - 15. Arctic Regional Hydrographic Commission (ARHC).”

Proposals submitted by the WEND Working Group:

PRO WENDWG-1 – Re-affirmation of the IHO's commitment to full ENC coverage

Re-affirmation of the IHO's commitment to full ENC coverage, subject to the needs of changing traffic patterns, and the availability of suitable source data and resources.

NOTE: COMPLETE TEXT OF THE PROPOSAL IS INCLUDED IN THE WEND-WG REPORT

PRO WENDWG-2 - Implementation of the WEND Principles

The WEND Principles require updating to take account of the IMO mandatory carriage of ECDIS. The guidelines to the WEND Principles should also be expanded to include a process that acknowledges, as a last resort, that existing paper chart producers can fill the gaps in ENC coverage and a similar process that can identify areas overlapping data that impacts on safety of navigation, and after notification to the Producer States and the observance of due process, inform mariners and IMO if the matter cannot/will not be resolved by those Producer States. These revised guidelines should be added to the existing WEND Principles. This process will involve the RHCs.

NOTE: COMPLETE TEXT OF THE PROPOSAL IS INCLUDED IN THE WEND-WG REPORT

(d) to note the following comments on other proposals to be considered by the Conference:

PRO 1 - Revision of the Resolution on the IHO response to disasters

IRCC, noting that, unfortunately, several tragic events have affected many areas of the world since the Indian Ocean tsunami of 2004, proposes that the IH Conference:

- (i) invites RHCs to review the proposed amendments at the regional level and report back to IRCC4, and
- (ii) requests IRCC to produce a consolidated draft taking into account the various experiences accumulated since 2005 and any additional inputs from other IHO bodies.

PRO 6 - Global status of hydrographic surveying

IRCC invites the IH Conference to consider this proposal in conjunction with the on-going task of the IHO Work Programme about the development of IHO Publication C-55 referred to in section 5 above.

(e) to decide on the future work of the committee as proposed in programme 3 (“Inter Regional Coordination and Support”) of the draft IHO 2013-2017 Work Programme.

STANDING AGENDA OF IRCC MEETINGS

(as approved by IRCC 1 and amended by IRCC 2)

1. Opening of the Meeting and Administrative Arrangements
2. Report by the Chair and pending matters
3. Actions and inputs from IRCC Bodies
4. Inputs from other Bodies affecting IRCC
5. Review of Terms of Reference and Rules of Procedure
6. IRCC Work Programme Management
7. Next IRCC Meeting. Venue and Date.
8. Any Other Business
9. Decisions of the IRCC
10. Recommendations of the IRCC for consideration of the IHO Member States.
11. Closure of the Meeting.

**REPORTS BY THE REGIONAL HYDROGRAPHIC COMMISSIONS (RHCS)
(IN ALPHABETICAL ORDER)**

1. ARCTIC REGIONAL HYDROGRAPHIC COMMISSION (ARHC)

1. **Inaugural Chair:** Dr. Savithri Narayanan,
Dominion Hydrographer, Canada

- Chair (Oct 2011)** Mr. Sven Eskildsen,
Director General, Danish Maritime Safety Administration

- Inaugural Vice-Chair:** Mr. Sven Eskildsen, DG
Director General, Danish Maritime Safety Administration

- Vice- Chair (Oct 2011):** Cdr. Evert Flier
Director Hydrography, Norway

2. **Membership:**

CANADA	Dominion Hydrographer Dr. Savithri Narayanan
DENMARK	DG Danish Maritime Safety Administration Mr. Svend Eskildsen
NORWAY	Director Hydrography Cdr. Evert Flier
RUSSIAN FEDERATION	Chief, Dept. of Navigation & Oceanography Captain Alexander Shemetov
U.S.A	National Hydrographer Captain John E. Lowell

3. **Meetings:**
 - 1) Inaugural Meeting (ARHC1) held in Ottawa, Canada October 4-6, 2010
 - 2) ARHC 2 held in Copenhagen, Denmark September 28-29, 2011

4. **Agenda Items:** *(all of which are best aligned to the IHO Work Programme 3 Element 3.1)*
 - Agreement and signing of Statutes for the Commission at the inaugural meeting
 - Establishment of three working groups to undertake the work of the Commission intersessionally (Strategic Planning WG, Arctic Mariners Routeing Guide WG, Operational and Technical WG)
 - Area of responsibility has been agreed and pending actions to formalize an INT Chart area 'N' and adjust associated IHO documentation
 - Norway established as the INTernational Chart Coordinator for the ARHC
 - Discussions and development of a prototype design of an Arctic Mariners Routeing Guide
 - Agreement on exchange of technology applications and experiences including standards allowing more rapid collection and utility of Arctic hydrography on nautical charts
 - Agreement to monitor Arctic hydrography developments such as those initialized by the Arctic Council (Marine Spatial Data Infrastructure) and TSMAD (development of polar projections suitable for ENC application)

5. **Conclusions:**
- ARHC is formally established
 - Agreement on the area of responsibility for the ARHC in consultation with neighbouring Commissions
 - Working groups established to work between Conferences
 - The current Observers to ARHC are Finland and Iceland
6. **Proposals for adoption by XVIIIth I.H. Conference:**
- The Conference is invited to note the report.
 - The Conference is invited to consider the Proposal to amend the Annex (related to Article 8) to the General Regulations of the International Hydrographic Organization (not yet in force) in order to reflect the newly created Arctic Regional Hydrographic Commission.

2. BALTIC SEA HYDROGRAPHIC COMMISSION (BSHC)

1. **Chair:** Patrik Wiberg (SE) from September 2011
Henryk Nitner (PL) from September 2010
Charlotte Wiin Havsteen (DK) from September 2009
Mathias Jonas (DE) from August 2008
Viktoras Liulys (LI) from June 2007
- Vice-Chair:** Jukka Varonen (FI) from September 2011
Åke Magnusson (SE) from September 2010
Piotr Pernaczynski (PL) from September 2009
Jens-Peter Hartmann (DK) from August 2008
Peter Ehlers (DE) from June 2007
2. **Membership** Denmark, Estonia, Finland, Germany, Latvia, Poland, Russian Federation, Sweden.

Associate Member: Lithuania

Observers: Captain Robert Ward – IHB, Mr. Nigel Sutton - UKHO

3. **Meetings:**

The following BSHC meetings have taken place since the XVIIth IH Conference:

- 16th Meeting - Norrköping, Sweden (20-21 September 2011)
- 15th Meeting - Gdynia, Poland (21-23 September 2010)
- 14th Meeting - Copenhagen, Denmark (15 - 17 September 2009)
- 13th Meeting - Rostock, Germany (19 - 21 August 2008)
- 12th Meeting - Klaipeda, Lithuania (12 - 14 June 2007)

4. **Agenda Items:**

Baltic Sea INT Chart Coordination Working Group (BSICCWG)

One of many important tasks for BSHC is to coordinate the publication of international (INT) charts in the Baltic Sea Region, which is done through the sub-working group BSICCWG. A new responsibility for this working group is also to coordinate the small and medium scale ENC scheme for the region. There is total ENC coverage of the Baltic Sea, in appropriate scale bands, apart from a minor area in the south eastern Baltic Sea. See also image below.

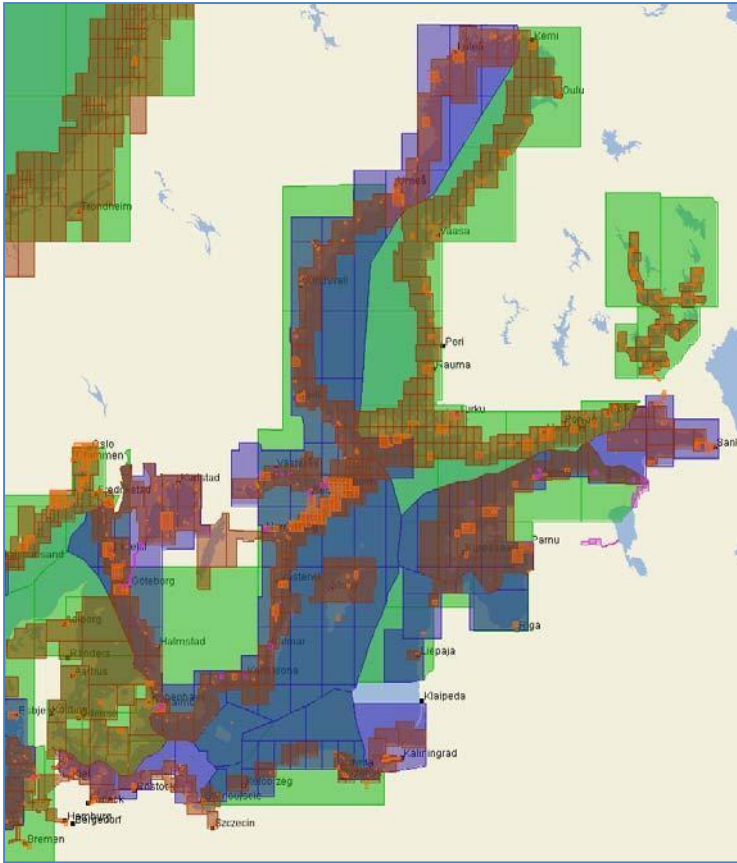


Image 1 ENC coverage (Berthing, Harbour, Approach, Coastal and General) in the Baltic Sea Region.

The BSICCWG has also been working on modification to the current 2002 draft Edition 4 of the IHO S-23 Part 2 (Baltic Sea). Many of the existing geographical names in the S-23 publication may cause confusion to the users and this may be a critical safety issue. At the 16th BSHC meeting 2011 it was suggested to forward the addendum to IHO, preferably to the IHC XVIII.

Within the Nordic Hydrographic Commission a method of using neighbouring countries ENCs for paper chart production, where the paper chart covers a neighbouring country's geographical area, has been established since 2010. These principles have been presented also within BSHC and respective Member States have been invited to consider participating.

Chart Datum Working Group (CDWG)

The main tasks for the Chart Datum Working Group are to prepare the implementation of the European Vertical Reference System (EVRS) in the Baltic Sea, to forward to the IHO Tidal and Water Levelling Working Group (TWLWG) more specific Mean Sea Level definitions and recommendations (especially for non-tidal areas), to study the validation, interpolation, prediction and distribution of water level information, and to cooperate with relevant other international bodies.

The WG has forwarded to the TWLWG proposals to amend IHO Resolutions related to vertical datum.

Working Group for Monitoring the Implementation of the Harmonised Re-survey Scheme (MWG)

All countries surrounding the Baltic Sea have, through intergovernmental co-operation, agreed upon the Helsinki Convention (HELCOM). The main target of HELCOM is to co-operate in achieving an improved environment within the Baltic Sea. One of the objectives is a re-survey scheme where all countries commit themselves to establishing a plan for re-surveying the fairway areas. The Working Group for Monitoring the Implementation of the Harmonised Re-survey Scheme has therefore been established.

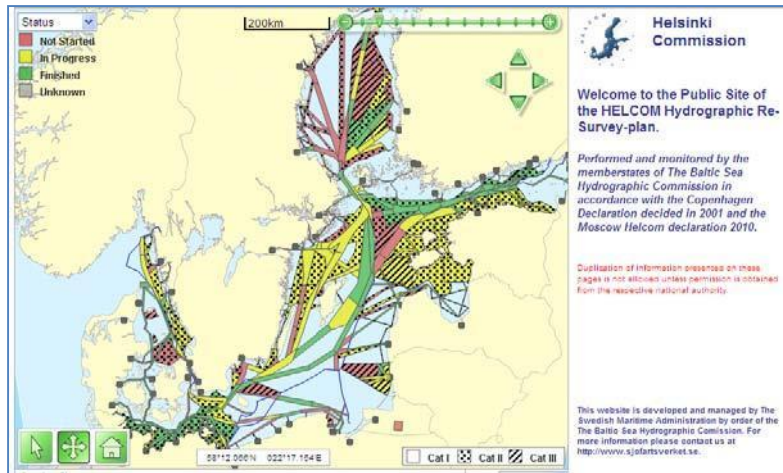


Image 2 Screen dump from the public site of the HELCOM re-survey plan <http://www.sjofartsverket.se/helcom>

Baltic Sea Bathymetry Database Working Group (BSBDWG)

The establishment of BSBDWG was a result of discussions and decision at BSHC 14. Initially, the Swedish Maritime Administration (SMA) had a task funded by the Swedish government, in cooperation with authorities concerned and within the IHO framework, to deliver an action plan aiming at the creation of a harmonised bathymetry model for the Baltic Sea.

The planned activities of BSBDWG (with some extensions) were then included in the application for an EU TEN-T project named MonaLisa (Motorways & Electronic Navigation by Intelligence at Sea). This application has been successful and has resulted in a considerably improved situation regarding funding of the activities. The project period for MonaLisa extends until the end of 2013.

Baltic Sea Maritime Spatial Data Infrastructure Working Group (BSMSDIWG)

At its 15th meeting, the BSHC recognised the need to initiate a study of MSDI in the Baltic Sea in order to identify areas where maritime SDI implementation is underway. This includes identification of problems that can be foreseen and how the Baltic member states regard the future development of MSDI in the region. Therefore, the BSHC 15th Conference established the BSMSDIWG with the task of studying MSDI in the Baltic Sea.

Baltic Sea ENC Harmonization Working Group (BSEHWG)

The Working Group was established in order to propose guidelines for harmonization rules for ENCs. Since the guidelines were agreed upon, the implementation in respective BSHC countries has been monitored by BSICCWG. An example of a harmonization rule is that attribute values for Compilation Scale in each ENC scale band have been agreed upon.

5. Conclusions:

Since 2007 the Baltic Sea Maritime Spatial Data Infrastructure Working Group and the Baltic Sea Bathymetry Database Working Group have been established. The HELCOM re-survey plan is now monitored through the Working Group for Monitoring the Implementation of the Harmonized Re-survey Scheme.

Harmonization rules for ENCs within the region have been established and the implementation is monitored.

It is important that the IHO takes the lead in addressing MSDI matters through its Member States for the maritime sphere. In view of IHO's definition of hydrography in place, MSDI delivers the instruments for the enhanced scope of hydrographic information users. MSDI is to create the framework for the future provision of this information beyond the classic field of surface navigation. The MSDIWG would be an appropriate WG to deal with these challenges.

The BSICCWG has also been working on modifications to the current 2002 draft Edition 4 of the IHO S-23 Part 2 (Baltic Sea). Many of the existing geographical names in the S-23 publication may cause confusion to the users and this may be a safety critical issue. If the development of the substitute section of the S-23 for the Baltic region are finalized in due time, it was suggested at the 16th BSHC meeting 2011 to forward the section to IHO as an Addendum to the current edition of S-23, preferably to the IHC XVIII.

6. Proposals for adoption by XVIIIth I.H. Conference:

The Conference is invited to note the report.

3. EAST ASIA HYDROGRAPHIC COMMISSION (EAHC)

1. **Chair:** Vice Admiral Nirut Hongprasith, Thailand (from 1 October 2011)
 Vice Admiral Prayuth Netrprapa, Thailand (from 1 October 2010-30 September 2011)
 Vice Admiral Nakorn Tanuwong, Thailand (from 17 October 2009 – 30 September 2010)
 Mr. Parry OEI, Singapore (from 22 September 2006 – 16 October 2009)

Vice Chair: Commodore Romeo I. Ho, Philippines (from 17 October 2009)
 Vice Admiral Nakorn Tanuwong, Thailand (from 1 October 2008 – 17 October 2009)

2. Membership

Full Members: China, Democratic People's Republic of Korea (DPRK), Indonesia, Japan, Republic of Korea (ROK), Malaysia, Philippines, Singapore and Thailand.

Observers: Brunei Darussalam, UK, USA and Vietnam.

3. Activities

3.1. EAHC Conferences

Date	Event	Venue
15-17 October 2009	10 th EAHC Conference	Singapore
September 2012	11 th EAHC Conference	Thailand

3.2. EAHC Meetings

Date	Event	Venue
24-25 January 2008	2 nd EAHC Coordinating Meeting	Thailand
16-18 July 2008	2 nd EAHC ENC Task Group Meeting	Philippines
18-19 February 2009	3 rd EAHC Coordinating Meeting	China
20 January 2010	3 rd EAHC ENC Task Group Meeting	Thailand
21-22 January 2010	4 th EAHC Coordinating Meeting	Thailand
17-19 March 2010	4 th EAHC ENC Task Group Meeting	Hong Kong
19-21 July 2010	5 th EAHC ENC Task Group Meeting	Thailand
26 January 2011	6 th EAHC ENC Task Group Meeting	Indonesia

7-28 January 2011	5 th EAHC Coordinating Meeting	Indonesia
28-29 April 2011	1 st EAHC Ad hoc Discussion Group Meeting	Republic of Korea
12-15 July 2011	7 th EAHC ENC Task Group Meeting	China
16-17 January 2012	8 th EAHC ENC Task Group Meeting	Japan
18-19 January 2012	6 th EAHC Coordinating Meeting	Japan

3.3. Capacity Building

3.3.1. Technical visits

Date	Event	Venue
29-30 September 2009	Technical visit to Brunei Survey Department	Brunei
25-26 November 2010	Technical visit to Vietnam Maritime Safety-North	Vietnam

3.3.2. Short courses

Date	Event	Venue
16-19 June 2008	Quality Assurance on MBES hydrographic surveying and post processing	Singapore
4-6 November 2008	Quality Assurance on ENC Production	Thailand
18-21 August 2009	Quality Assurance on MBES hydrographic surveying and post processing	Philippines
25-27 August 2009	Quality Assurance on ENC Production	Philippines
15-19 November 2010	Technical Aspects of Maritime Boundaries, Baselines and the Extended Continental Shelf	Thailand
23-26 November 2010	Marine Cartography and ENC Production and Quality Assurance	Vietnam
20-24 June 2011	Database Design and Management	Thailand
5-7 July 2011	ENC Production and Quality Assurance	Indonesia
11-14 October 2011	Multibeam Survey and Side Scan Sonar	Singapore
June 2012	Tides and Water Level for Hydrographic Survey	Thailand
June 2012	Seabed Classification	Malaysia
August 2012	Technical Aspects of Maritime Boundaries, Baselines and the Extended Continental Shelf	Vietnam
November 2012	Database Design and Management	Republic of Korea

3.4 The Reissue of the South China Sea (SCS) ENC

At the 6th EAHC Coordinating Meeting held between 18-19 January 2012 in Okinawa, Japan, EAHC agreed that as there have been a large number of updates since the earlier release in 2008, the reissue of SCS ENCs will be published on 21 June 2012.

4. Main Agenda Items

4.1. ENC development

With the phased-in implementation of the ECDIS from 2012 and the growing number of ENCs, EAHC Member States (MS) recognized the urgent need to address ENC overlaps, gaps and data

harmonization which could lead to unstable ECDIS performance. Those issues could be addressed based on regional and bilateral discussions. At the 4th EAHC Coordinating Meeting in January 2010, the timeline for addressing those issues was set and EAHC ENC Task Group has been tasked to produce harmonized small scale ENC. For larger scale ENC, the issues will be resolved based on multilateral, bilateral or national basis.

4.2. EAHC Capacity Building

At the 10th EAHC Conference in October 2009, Member States agreed that the short-term courses should be continued. In addition, the long-term training needs should be identified and the EAHC training road map should be developed for self sufficiency within the region. At the 5th EAHC Coordinating Meeting in January 2011, the Ad hoc Discussion Group (ADG) was formed to explore the short and long term training needs and other relevant activities of Member States.

4.3. New EAHC Website

The EAHC website has proved to be a useful medium for storing and disseminating information to Member States. EAHC also has ENC websites for Member States to access and housing all the SCS updates and quality check reports. However, there were some layout shortfalls including the lack of specific domain name, the marked difference of domain names, the difference of look and feel of each site, and the dependence upon IT support for creation and management. Therefore, the new, unified EAHC website has been developed (<http://home.eahc.asia>) and was launched at the 5th EAHC ENC Task Group Meeting in July 2010.

5. Conclusions

ENC harmonization is the main focus of the region. Approaches to harmonize small-scale ENCs and larger-scale ENCs are determined and implemented. Mechanisms to enhance Member States' capacity in hydrography and cartography to support safety of navigation are also being developed.

6. Proposals for adoption by the XVIIIth IH Conference

The Conference is invited to note the report.

4. EASTERN ATLANTIC HYDROGRAPHIC COMMISSION (EAHC)

1. **Chair:** Vice-Admiral Agostinho Ramos da SILVA (Portugal) from 26 November 2010
Commodore Abdullahi Gunda INUSA (Nigeria) from 5 December 2008 to 25 November 2010
Captain Francisco PÉREZ CARRILLO (Spain) to 4 December 2008

Vice-Chair: IGA Bruno FRACHON (France) from 26 November 2010
2. **Membership:**

Members: France, Morocco, Nigeria, Portugal, Spain.

Associate Members: Benin, Cameroon, Cape Verde, Côte d'Ivoire, Guinea, Guinea-Bissau, Mauritania, Republic of Congo, Senegal, Togo.

Observers: Democratic Republic of Congo, Equatorial Guinea, Gabon, Gambia, Ghana, Liberia, Sao Tome and Principe, Sierra Leone, United Kingdom, United States of America.
3. **Meetings:**
 1. 10th Meeting - Lomé, Togo (2 - 5 December 2008);
 2. 11th Meeting - Accra, Ghana (24 - 26 November 2010).

4. Agenda Items:

The main subjects dealt with during the EAtHC meetings were the following:

10th EAtHC meeting:

- **Co-operation with Member States and with International Organizations**
 - Co-operation with Member States
 - Signature of the Bilateral Arrangement between France and Morocco:
The bilateral agreement signed between France and Morocco is intended to establish a complete hydrographic service in Morocco.
 - Co-operation with non-Member States
 - Signature of the Bilateral Arrangement between France and Togo:
The bilateral arrangement signed by France and Togo is an example of the collaboration with nations which are not full IHO members.
 - C-16:
Coastal States were encouraged to provide to the IHB and EAtHC Chair with official documents setting up national hydrographic committees, organisation and general procedures to be considered for inclusion in C-16.
 - IHO Membership:
Associate Members were reminded of the relevance of becoming full members of IHO and the advantages of it. It was agreed to create one Action Item for IHB to break down the cost/benefit ratio of full membership into IHO.
- **Capacity Building**
 - Capacity Building Assessment
 - Nomination of the regional CBC representative:
France was designated as Regional CBC representative.
 - Capacity Building Provision
Raising awareness of the importance of hydrography at governmental level in west African coastal countries.
 - C-55 Review
All coastal States were reminded to keep this publication updated, given that it is a very helpful tool for scheduling and prioritizing when assigning CBC funds.
- **Techniques and Standards Co-Ordination and Support**
 - Nautical cartography
 - Implementation of the Schemes and new demands of INT Charts (CHATINTCHART)
 - Progress in National ENC production
 - Development of an EAtHC ENC Scheme:
The responsibility of preparing small and medium scale ENC Scheme for EAtHC was assigned to the Regional INT Chart Coordinator.
 - Impact of NAV-54, WEND 11 and MSC 85
 - NAV-54: e-navigation and ECDIS carriage requirements
 - WEND-11: WEND principles review - "Guidelines for the preparation and maintenance of small/medium scale ENC schemes"
 - Marine Safety Information:
 - Implementation of GMDSS in the Eastern Atlantic
 - MSI in NAVAREA II

11th EAthC meeting:

- **IHO Programme 1 “Corporate Affairs”**
 - Co-operation with International Organizations
 - IHO New Structure - Approval Protocol of Amendments:
Portugal ratified the Protocol of Amendments in May 2011.

- **IHO Programme 2 “Hydrographic Services and Standards”**
 - Nautical Cartography
 - Implementation of the Schemes and new demands of INT Charts - CHATINTCHART;
 - Progress in national ENC production:
The current situation was reported.
 - Development of an EAthC ENC Scheme:
A scheme for the ENC Band 3 is being established, like it was done for the ENC Bands 1 and 2.

- **IHO Programme 3 “Inter Regional Coordination and Support”**
 - Co-operation with Member States
 - IHO Membership - Status of applications
 - Coordination for ENC production
 - C-55 Review:
The Commission considered that members should regularly report to the IHB on all information relevant to update the status of hydrographic services and capabilities, including provision of the list of POCs.

 - Co-operation with non-Member States
 - Establishment of a strategy increasing the participation of Non IHO Member States and complying with SOLAS regulations:
 1. The Republic of Guinea expressed interest in signing the EAthC Statutes;
 2. Togo reported that a National Hydrographic Committee was established and expressed that efforts were ongoing to apply for IHO membership before the next EAthC Conference;
 3. It was decided to inform International Maritime Organization (IMO) representatives of the EAthC observers’ countries that EAthC Statutes may be signed by the appropriate Focal Point.

 - Capacity Building
 - Planned activities:
Capacity Building Committee (CBC) proposed to carry out a capacity building visit to Gabon, Cameroon and Guinea-Bissau in 2011 – *The visit to Cameroon was accomplished in September 2011 and the visits to Gabon and Guinea-Bissau were postponed to 2012.*
 - Identification of new regional needs:
Member States were invited to prepare submissions to the EAthC for consideration at CBSC 9.

 - Marine Safety Information
 - Implementation of GMDSS in the Eastern Atlantic
 - MSI in NAVAREA II

5. Conclusions:

These are the most important conclusions and actions adopted since the last IHC, at the 10th and 11th EAtHC meetings:

- Advise pending IHO members in the EAtHC region to complete the process by depositing their instrument of accession to the IHO (done);
- Encourage observer nations to sign the EAtHC Statutes, in order to become Associate Members;
- Notify the responsible authorities of coastal States in the region of the importance of setting up hydrographic committees, in order to undertake the hydrographic services and responsibilities underlined on SOLAS Convention, Chapter V, Regulation 9 (done);
- Encourage Member States to report to the Region G International Charting Coordinator (France) on current or planned high-speed crafts routes in Region G in order to be able to meet IMO requirements, ECDIS carriage and related ENC coverage;
- Encourage EAtHC countries to establish formal arrangements with the developed Hydrographic Services;
- Encourage Member States to identify systematic procedures for the transmission of survey data to cartographic authorities in order to enable a swift update of nautical documentation, paper charts and ENC;
- Convince INT Chart producing nations to check and update the information in C-11 and provide feedback to the Region G Coordinator;
- Promote the importance of C-55 as it forms the basis of evaluating capacity building needs in the various regions;
- EAtHC is committed to carrying forward hydrographic, cartographic and capacity building activities in accordance with IHO objectives and goals.

6. Proposals for adoption by XVIIIth I.H. Conference:

The Conference is invited to note the report.

5. MEDITERRANEAN AND BLACK SEAS HYDROGRAPHIC COMMISSION (MBSHC)

1. **Chair:** Captain Francisco J Perez Carillo (Spain) until Oct. 2007
 Capt. Rachid ESSOUSSI (Tunisia) (from Oct. 2007 to Sept. 2009)
 RAdm. Mustafa IPTES (Turkey) (from Sept. 2009 to Aug. 2010)
 RAdm. Hakan ERAYDIN (Turkey) (from Aug. 2010 to June 2011)
 Cdre Alexandros THEODOSIOU (Greece) (from June 2011)
- Vice-Chair:** Dr. Sergei Symonenko (Ukraine) (from Oct. 2007 to Sept. 2009)
 Cdre Dimitrios PALIATSOS (Greece) (from Sept. 2009 to Mar. 2010) Cdre
 Alexandros THEODOSIOU (Greece) (from Mar. 2010 to June 2011) RAdm Hakan
 ERAYDIN (Turkey) (from June 2011)
2. **Membership:**
 - Members:** Algeria, Croatia, Cyprus, Egypt, France, Greece, Italy, Monaco, Morocco, Romania, Russian Federation, Serbia, Slovenia, Spain, Syria, Tunisia, Turkey, Ukraine.
 - Associate Members:** Bulgaria, Georgia, Israel, Malta, Palestinian Authority, UK, USA.
 - Observers:** Albania, Germany, Lebanon, DINMA, IMA, IOC, PRIMAR.

3. Meetings:

Since the last IHC the Commission has met three (3) times in accordance with the Statutes:

- MBSHC 15: 22-24 October 2007, Malta
- MBSHC 16: 22-24 September 2009, Odessa, Ukraine
- MBSHC 17: 1-3 June 2011, Athens, Greece

4. Agenda Items:

The standing agenda of the MBSHC is in the attached annex.

The main subjects dealt with during the reporting period were the following:

- The amendment of the MBSHC Statutes
- The approval of the pending applicants to IHO membership
- The status of approval of the Protocol of Amendments to the IHO Convention
- The survey status and the development of the IHO Publication C-55
- The implementation of the WEND Principles.
- The Capacity Building activities
- The marine disaster management

5. Conclusions:

- The Commission approved an amendment to the MBSHC Statutes in order to enable Associate Members to host MBSHC meetings.
- The Commission designated Italy to be the official representative of the MBSHC at the Regional Seapower Symposium for the navies of the Mediterranean and Black Sea countries.
- The Commission recommended Member States to contribute actively to the development of NEAMTWS through upgrade national sea level stations identified by the NEAMTWS Implementation Plan to real time data delivery and participate in data exchange.
- The Commission invited Member States to consider providing coastal bathymetry data to the IHB i.a.w. the relevant resolution of IOC and IHO CL 36/2006.
- The Commission accepted to include the disaster management issues as a permanent item on its agenda i.a.w IHO CL 89/2005. Further invited the MBSHC chair to study the procedure and guidelines for developing a disaster action plan.
- The Commission urged Member States which have not yet ratified the Protocol of Amendments to the IHO Convention to contact their national authorities to accelerate the process of ratification of the Protocol.
- The Commission urged Member States which have not yet approved the pending applicants to IHO membership, to contact their national authorities to accelerate the approval process of the pending applicants.
- The Commission invited Member States to provide comments to Italy on the draft procedures of the designation of the MBSHC representatives to the IHO Council.
- The Commission invited MBSHC Chair to seek ways to get Member States not participating in its work to be more involved in the Commission's activities.
- The Commission invited Member States to send their national reports to the Chair at least one month before the MBSHC meetings in line with the format in the IHO Resolution 2/1997 as amended. Chair to provide the IHB with the National Reports to be posted on the IHO web site.
- The Commission designated Turkey as the representative of the MBSHC on the International Hydrographic Review Editorial Board.

- The Commission approved the amended Rules of Procedures of the Black and Azov Seas Working Group.
- The Commission invited the Russian Federation and Ukraine to discuss on bilateral basis the issue of borders materialization on Ukrainian national paper charts and report to the Black and Azov Seas Working Group Chair.
- The Commission designated Turkey as the CB Coordinator for the MBSHC.
- The Commission adopted the request of Romania to organize a seminar on the establishment of the national hydrographic committee and invited CB Coordinator to do the necessary coordination with Romania, other Member States, CBSC and IHB to carry out this seminar.
- The Commission invited MBSHC Chair to keep non-IHO Member States in the region informed on all Capacity Building activities available through the IHO and other regional initiatives.
- The Commission invited MBSHC Chair to be in contact with Syria to investigate suitable dates to carry out the technical visit which has been postponed and to be in further consultation with Israel (and Libya when it is appropriate) to enquire if they need the technical visits and identify volunteer Member States able to provide staff to accomplish these visits.
- The Commission invited CB Coordinator to participate in the meetings of CBSC for MBSHC and the activities for C-55 development, as decided in IRCC 3.
- The Commission invited CB coordinator to prepare a two-year CB plan in coordination with Member States and Chair.
- The Commission invited Member States to send a graphic status of the conducted surveys yearly (by 1st February) to Spain for coordination. The last update should preferably be sent three months before the MBSHC meetings.
- The Commission adopted the generic ToR and RoP contained in Annex C to S-11 Part A as the ToR and RoP for Region F International Charting Coordination Working Group (ICCWG).
- France confirmed its agreement to continue as Region F Coordinator i.a.w. ToR set by HSSC for the Regional International Charting Coordination Working Groups.
- The Commission invited Region F Coordinator to circulate a table for the inputs of Member States and AMSs in order to be sent to the WEND WG i.a.w the action item of IRCC 03/13.
- On the recommendation of IRCC the Commission invited the MBSHC Chair to highlight in the standard meeting reports the items that the Commission would like to refer to IRCC.
- On the recommendation of IRCC the Commission called the MBSHC Chair to invite Chairs of adjacent RHCs to attend MBSHC meetings.
- After confirmation by Turkey the next MBSHC meeting will be hosted in Istanbul during the second half of 2013.

6. Proposals for adoption by the XVIIIth I.H. Conference:

The Conference is invited to note the report.

Mediterranean and Black Seas Hydrographic Commission (MBSHC)**Draft Agenda**

1. Chairman's Opening. Working and Administrative Arrangements
2. Adoption of the Agenda, Timetable and Documentation.
3. Chairman's Report.
4. Designation of the Vice - Chairman of the Meeting.
5. Status of the Action List from the Previous Meeting.
6. IHB Report on Status of the IHO Working Programme
7. IHO WP - Programme 1 - Element 1.1 - Cooperation with International Organizations and Participation in Relevant Meetings
8. IHO WP - Programme 1 - Element 1.4 - IHO
9. IHO WP - Programme 2 - Element 2.1 - Hydrographic Services and Standards (HSSC)
10. IHO WP - Programme 3 - Element 3.1 - Cooperation with Member States and Attendance at Relevant Meetings
11. IHO WP - Programme 3 - Element 3.2 - Increase Participation by Non-Member States
12. IHO WP - Programme 3 - Element 3.3 - Capacity Building Management
13. IHO WP - Programme 3 - Element 3.4 - Capacity Building Assessment
14. IHO WP - Programme 3 - Element 3.6 - Coordination of Global Surveying and Charting
15. IHO WP - Programme 3 - Element 3.7 - Maritime Safety Information (MSI)
16. Reports from and to the Adjacent Hydrographic Commissions
17. Report to IRCC.
18. Any Other Business
19. Date and Venue of the Next MBSHC Meeting.
20. Decisions and Recommendations.
21. Closing.

6. MESO AMERICAN AND CARIBBEAN HYDROGRAPHIC COMMISSION (MACHC)

1. **Chairs:** Rear Admiral Nick LAMBERT (UK) from November 2010
Vice Admiral Fernando PALMER Fonseca (BRAZIL), 2008 - 2010
Rear Admiral José J. Ocaña GARCÍA (MEXICO) 2007 - 2008

Vice-Chairs: Mr Freddie DELCHOT (SURINAME)
Rear Admiral Nick LAMBERT (UK)
Rear Admiral Ian MONCRIEFF (UK)
2. **Membership:** Brazil, Colombia, Cuba, France, Guatemala, Jamaica, Mexico, Netherlands, Suriname, Trinidad and Tobago, United Kingdom, United States of America, Venezuela.
Associate Members: Antigua & Barbuda, Barbados, El Salvador, Guyana, Haiti, Honduras, Nicaragua, Panama, Saint Lucia, St.Kitts & Nevis.
Observers: Bahamas, Belize, British Virgin Islands, Chile, Dominica, Dominican Republic, Grenada, St.Vincent & The Grenadines.

3. Meetings:

The Commission has met annually since the close of the XVIIth IHC (May 2007), in accordance with the MACHC Statutes:

- 8th Meeting – Niteroi, Brazil (8 – 10 October 2007)
- 9th Meeting – Niteroi, Brazil (9 – 10 October 2008);
- 10th Meeting – Bridgetown, Barbados (3 - 6 November 2009);
- 11th Meeting – Paramaribo, Suriname (8 – 12 November 2010)
- Planned 12th Meeting – Basseterre, St.Kitts & Nevis (6 – 9 December 2011)

4. Agenda Items:

The main subjects (*all IHO Work Programme Elements 3.1, 3.2, 3.3*) dealt with during the period were the following:

- (a) review and modification of Commission representation, limits, and statutes;
- (b) review of information on input to IHO Publication C-55 (formerly S-55);
- (c) progress on INT charting in the region;
- (d) progress on ENC developments in the region, including quality control and distribution;
- (e) Capacity Building in the Region, including training;
- (f) MACHC response to disasters in the region.

5. Conclusions:

The main conclusions and recommendations from the MACHC meetings are as follows:

The Commission is committed to developing cooperation with IHO Member States, Non-IHO Member States, adjacent Regional Hydrographic Commissions, other International Organizations and industry. Haiti has joined the Commission as an Associate Member. Representatives from a number of international bodies and commercial organizations, including CARIS, ESRI, Jeppesen and Kongsberg, attended the most recent Commission meetings.

The MACHC would like to highlight that ENC coverage of the region is progressing well and that the gaps in coverage are in the process of being addressed. The Electronic Chart Committee has been particularly active. Issues regarding the overlap of ENC cells within user bands have largely been resolved in the Atlantic side of Region B. An ENC Scheme is under development for the Pacific side.

Co-ordination of both INT charts and their respective ENC-equivalents within Region B has improved, and has recently been combined, initially under the stewardship of Mexico.

The MACHC members have responded to regional natural disasters, notably the Haitian earthquake in January 2011, with longer-term technical assistance and capacity re-building measures to affected countries.

The Commission agreed on the importance of Member States updating the C-55 database, at least on an annual basis.

The Commission acknowledged the importance of Member States having due regard to the future charting, and representation by ENC symbology or layers, of regional environmental information, including aspects of the Meso-American Barrier Reef.

Significant progress has been made with the development of MACHC regional Capacity Building programmes. A comprehensive assessment of needs and projects has been undertaken, and supporting Member States have identified individual recipient nations. The following visits and training (*all IHO Work Programme Elements 3.1, 3.2, 3.3*) were undertaken:

- a. Technical visits Type I and II to the following countries:
 - Antigua & Barbuda
 - Bahamas
 - Barbados
 - Costa Rica
 - Dominica
 - El Salvador
 - Grenada
 - Panama
 - St. Kitts & Nevis
 - Saint Lucia
 - Trinidad & Tobago
- b. Training:
 - i. Multibeam Surveying, with (Argentina), Brazil, Colombia, Jamaica and Mexico, held in Vera Cruz, Mexico.
 - ii. MSI Course with Antigua & Barbuda, British Virgin Islands, St Kitts & Nevis, Grenada, and Honduras, held in Niteroi, Brazil.
 - iii. Hydrography Type I and II Course with Antigua & Barbuda, Barbados, British Virgin Islands, El Salvador, Grenada and St.Kitts & Nevis, held in St.Johns, Antigua
 - iv. Hydrography Type III Course, with Belize, Guatemala and Honduras, held in co-operation with the NOAA, USA at NOAA facilities and on location (part of the Gulf of Honduras project).
 - v. Basic ENC and ENC Production with El Salvador, Honduras, Jamaica and Suriname, held in Kingston, Jamaica.
 - vi. Basic Hydrography and Marine Cartography Course in Haiti (5-16 Sept. 2011) provided by France in co-operation with Caris, Kongsberg, PAIGH and funded by CBSC.
- c. The inter-agency Gulf of Honduras Project has been initiated. The programme includes collaborative training, substantive field surveying, and data assessment, ahead of hydrographic compilations and local production, and has been supported by PAIGH, COCOTRAM, CCAM, NOAA, SICA and others.

6. Proposals for adoption by the XVIIIth IH Conference:

The Conference is invited to note the report.

7. NORDIC HYDROGRAPHIC COMMISSION (NHC)**1. Chairs:**

Since 6 April 2011	Ms. Charlotte Havsteen (DK)
15 April 2010 - 6 April 2011	Mr. Evert Flier (NO)
23 April 2009 – 15 April 2010	Mr. Georg Larusson
8 May 2008 – 23 April 2010	Mr. Jukka Varonen
19 April 2007 – 8 May 2008	Mr. Åke Magnusson

Vice-Chair: Mr. Evert Flier (NO)

2. Membership:

Denmark
Finland
Iceland
Norway
Sweden

3. Meetings:

55th Meeting - Stavanger, Norway (5-6 April 2011)

54th Meeting - Reykjavík, Iceland (13-15 April 2010)

53rd Meeting - Helsinki, Finland (21-23 April 2009)

52nd Meeting - Norrköping Sweden (6-8 May 2008)

Denmark will be hosting the 56th meeting of the NHC in Copenhagen, in the spring 2012.

4. Agenda Items:

- RENC cooperation between PRIMAR and IC-ENC
- Improved data exchange between the Nordic HO's
- Harmonization issues with respect to nautical publications, paper chart production and ENC's
- Area of interest for NHC and relations to bordering RHC's
- Mutual reporting of national issues, initiatives and projects.

The following working groups have been formed during the period:

- Nordic Nautical Publication Working Group (NNPWG)
- Nordic Chart Production Working Group (NCPWG)
- Nordic Data Quality Working Group (NDQWG)

NHC has hosted a range of yearly multi beam validation workshops, in order for the data validation experts, to exchange knowledge and experience.

5. Conclusions:

NHC has decided that there is no conflict of interest or delimitation of area of responsibility between NHC and any of the bordering RHC's, including the newly formed ARHC.

6. Proposals for adoption by XVIIIth I.H. Conference:

The Conference is invited to note the report.

8. NORTH INDIAN OCEAN HYDROGRAPHIC COMMISSION (NIOHC)

1. Chairs: Rear Admiral Nick LAMBERT (UK) from September 2010
Rear Admiral Ian MONCRIEFF (UK) 2010 and 2007 to 2008
Vice Admiral BR RAO (India) 2008 to 2010

Vice-Chairs: Vacant from Feb 2011
Vice Admiral BR RAO (India)
Capt MI HAQUE (Bangladesh)
Rear Admiral Abdul Rahman Mohd AL-SHEHRI (Saudi Arabia)

2. Membership: Bangladesh, Egypt, India, Myanmar, Saudi Arabia, Sri Lanka, Thailand, United Kingdom.

Associate Members: France, Oman, Mauritius, Pakistan, Seychelles, USA.

Observers: Malaysia.

3. Meetings:

The Commission has met annually since the close of the XVIIth I.H. Conference (May 2007), in accordance with the NIOHC Statutes:

- 8th Meeting - Goa, India (14 - 17 April 2008)
- 9th Meeting - Seychelles (25 - 26 February 2009);
- 10th Meeting - Dhaka, Bangladesh (23 - 24 February 2010);
- 11th Meeting - New Delhi, India (1-2 March 2011);
- Planned 12th Meeting - Colombo, Sri Lanka (20 - 23 March 2012)

4. Agenda Items:

The main subjects dealt with during the period (*all IHO Work Programme Elements 3.1, 3.2, 3.3*) were the following:

- review and modification of Commission Statutes;
- review of information on survey status and input to IHO Publication C-55;
- progress on INT charting in the region;
- progress on ENC developments in the region, including distribution;
- Capacity Building in the region, including training;
- NIOHC response to disasters in the region;

5. Conclusions:

The main conclusions and recommendations from the NIOHC meetings are as follows:

The Commission is committed to developing cooperation with IHO Member States, Non-IHO Member States, adjacent Regional Hydrographic Commissions, other International Organisations and industry;

Mauritius and Oman joined the Commission as Associate Members and representatives from Jeppesen and Fugro Survey attended the most recent Commission meeting.

The NIOHC would like to highlight that ENC coverage of the region is progressing well and that the small number of gaps are in the process of being addressed.

Region J INT chart coordinator (India) regularly updated the Commission on the status of INT charts within the region.

The formation of an NIOHC International Charting Coordination Working Group (IRCC Action No. 02/14) was discussed without agreement and Member States agreed to revisit the proposal at the 12th NIOHC meeting, March 2012.

The Commission agreed on the importance of Member States updating the C-55 database, at least on an annual basis.

The NIOHC disaster response contacts and plan have been reviewed and updated by Commission members.

The establishment of a regional Capacity Building (CB) coordinator responsible for CB advice and collating submissions to the IHO CBC. The following visits and training (*all IHO Work Programme Elements 3.1, 3.2, 3.3*) were undertaken:

-Technical visits to Sudan and Yemen.

-Training:

- i. Phase 1 joint Technical workshop (with the RSAHC) in Jeddah, Saudi Arabia.
- ii. MSI Course (joint with RSAHC) in Muscat and Oman.
- iii. Regional Survey Team Operations in the Seychelles
 - i. Support to Oman for on-the-job ENC training in Pakistan
 - ii. Support to attend MBES technical workshop in Goa, India
- iv. Shallow Water Survey Workshop (joint with SAIHC)
- v. Survey training in Mauritius, Maldives and Seychelles

6. Proposals for adoption by the XVIIIth I.H. Conference:

The Conference is invited to note the report.

9. NORTH SEA HYDROGRAPHIC COMMISSION (NSHC)

- 1. Chairs:** Peter Ehlers (DE) to April 2008
Svend Eskildsen (DK), from April 2008 to September 2010
Bruno Frachon (FR), from September 2010

Vice-Chairs: DK to April 2008
FR from April 2008 to September 2010
NO from September 2010
- 2. Membership:** Belgium, Denmark, France, Germany, Iceland, Ireland, Netherlands, Norway, Sweden, United Kingdom.

3. Meetings:

The Commission met on 22-24 April 2008 in Elsinore (DK) and on 28 -29 September 2010 in Brest (FR). The next meeting is planned in Ålesund (NO), 18-21 June 2012, in accordance with the NSHC Statutes. A special meeting was also held in Monaco in the margins of the XVIIth IHC on 11 May 2007.

The NSHC runs several groups that work mainly by correspondence:

- the Region D ICCWG (former NW European Charting WG) and the North Sea ENC Harmonization Working Group (UK lead);
- the NSHC Tidal Working Group;
- the Dover Strait/ *Pas de Calais* Survey Strategy Working Group (BE, FR, NL,UK) ;
- the NSHC Re-survey Working Group (DE lead) ;
- the European Union Marine and Maritime Policy Working Group (FR lead).

4. Agenda Items:

Task numbers refer to IHO WP for 2011 (see CL 81/2010)

IHO Work Programme 1 - "Corporate Affairs"

Element 1.1 Co-operation with International Organizations and participation in relevant meetings.

Tasks 1.1.5c, 1.1.10b, 1.1.10d: A number of the NSHC HO representatives are involved in IMO meetings (mainly NAV, COMSAR, e-navigation) together with IHB representatives. With the development of e-navigation, and the ECDIS mandatory carriage requirements implementation plan, the NSHC believes that this co-ordinated involvement along national Maritime Safety Agencies is of huge importance for the sake of safety of navigation and for raising the awareness of the important IHO role. This importance requires strong involvement of IHO members and bodies, which must be optimized.

* A more efficient and straightforward co-ordination mechanism across RHCs, IHO SCs, and IHO Member States in IMO activities (MSC, TCC, NAV) might be considered by the IHB in the future.

Task 1.1.8: The International Cartographic Conference ICC'2011 took place in Paris in July 2011, a summary report of which by FR is to be published in the IHO Bulletin.

Task 1.1.17b: The NSHC made little progress in the follow-on of the MoU between the IHO and the European Commission although it is acknowledged (conclusions 91, 92) that European marine and maritime policies are changing the global environment, are playing an increasing cross-boundary role (Marine Knowledge 2020 for instance) and are impacting HO activities, business models, etc. A number of HOs are already involved in the development of their implementation plan to comply with the EU INSPIRE directive establishing an Infrastructure for Spatial Information in the European Community. The BLAST project (Bringing Sea and Land Together) is progressing according to the plan. An interesting result is the ENC Harmonization Checker (ENC-HC), a tool that automatically compares adjacent ENCs and identifies geometric inconsistencies and inconsistent use of attributes.

* The NSHC decided that HOs of EU Member States and of non-EU Member States should be kept informed of the development of EU policies that may interfere with or support IHO objectives, as appropriate.

IHO Work Programme 2 - "Hydrographic Services and Standards"*Element 2.9 Marine Spatial Data Infrastructure Working Group*

Task 2.9.1 (also related to Task 3.6.3 below): The NSHC members share concerns on their MSDI activities and decided to provide and compare, at the next NSHC conference, the governance principles for the definition and monitoring of their national civilian hydrographic and charting programme (conclusion 90).

* As it could be of great interest for other RHCs, the NSHC will be happy to report on this issue at IRCC05.

Element 2.12 Tidal and Water Level Working Group

Task 2.12.1: NSHC tasked the NSHC Tidal Working Group with the formulation of recommendations on the ways forward, to create common and unique vertical reference surface for the whole North Sea area (conclusion 87). The NSHC also approved the NSHC TWG Terms of Reference and Work Plan according to the recommendations made at the IHO TWG level. It is worth noting that this WG is to be playing an important role in the European-funded BLAST project.

IHO Work Programme 3 – "Inter Regional Coordination and Support"*Element 3.1 Co-operation with Member States and attendance at relevant meetings Inter Regional Coordination Committee Hydrographic Commissions*

Task 3.1.0: The IRCC Chair participated in the last meeting of the NSHC and provided important updates. The NSHC was represented by FR (acting Chair) at the IRCC3 meeting.

Task 3.1.1: a proposal was made at IRCC3, by the NSHC for the consideration of the ARHC for the definition of the adjacent limits between the two regions. It was also suggested to create a new INT charting area "N" (see action IRCC03/08, and document ARHC02/03B). At the ARHC meeting in September 2011, NO was tasked to take the necessary steps to formalize the establishment of the new region "N" and the 69°N proposal, for the border limit between the ARHC and the NSHC in the North Atlantic was accepted and adopted.

Task 3.1.2²: The Commission met once since the EIHC4, all Member States were represented in the meeting held in Brest. The NSHC agreed to amend its statutes (conclusion 82) to include a new paragraph 3 of article 19 as follows "The Commission shall lay down its decisions in the form of conclusions, to be annexed to the summary; reports to be numbered consecutively and to consist of a preamble containing the main considerations, followed by one or more operative paragraphs containing the actions decided upon and taking into account the provision in paragraph 2 of article 19, of the Statutes of the North Sea Hydrographic Commission." This list of conclusions is an interesting way for keeping record of the main decisions within a Regional Hydrographic Commission and to monitor the progress made in the development of co-operation.

* The amended NSHC Statutes and the list of conclusions will be posted on the IHO website shortly.

Task 3.1.12: The participation of representatives of the industrial sector and of the European Commission at the 30th meeting of the NSHC in 2012 will be proposed to the NSHC Member States.

² The NSHC is missing in IHO 2011WP; it should have been Task 3.1.2 as in IHO 2010 WP.

Element 3.3 Capacity Building Management

Task 3.3.1: There is no real capacity building initiatives currently carried out within the NSHC. However, it is worth noting that a number of NSHC HOs are involved in the IHO capacity building activities (DE who chairs the CBSC, NO, UK, FR). NO currently represents the NSHC at the CBSC meetings.

Element 3.6 WEND WG, Coordination of Global Surveying and Charting

Tasks 3.6.1, 3.6.2: The NSHC established the NS ENC Harmonisation WG (conclusions 83, 84) and was represented in the WEND-WG meeting held in Wollongong 13-14 Oct. 2011.

The development of the TOR for the NS ENC Harmonization by UK is in progress.

A proposal for the consideration of the WEND-WG, supported by the NSHC, was made by DE and FR on behalf of the Joint Distribution WG of the IC-ENC-PRIMAR Co-operation to promote the WEND principles through the distribution of ENCs under a new brand name, namely "IHO-WEND", provided these ENCs are integrated into the Joint ENC Database through the RENCs.

A second proposal was also made by DE and FR that Regional International Charting Co-ordination Groups within RHCs should conduct systematic and periodic ENC overlaps and gaps analysis in their areas of responsibility, and report to WEND-WG (conclusion 84).

These recommendations were considered at the WEND-WG meeting hosted in Wollongong (AU) 14-15 Oct. 2011.

Task 3.6.3: Two NSHC working groups are respectively responsible for the revision of the Dover Strait / *Pas de Calais* Survey Strategy and the NSHC Re-survey Strategy (including re-surveying of critical areas). The work conducted by the NSHC Re-survey (conclusions 89 and 88) is of great importance for the revision of C-55 (see action IRCC03/09).

Task 3.6.4: The NSHC, at its 28th meeting, stressed the importance of M-3 TR 1/1992 (former B5.5) that it is the role of the IHB to monitor new INT chart publication and to provide the concerned Member States with comments on any point of non-compliance with IHO INT Charts Specification standards. One of the actions raised was also for the IHB to investigate the use and implications (incl. liability) of freely-available satellite imagery.

5. Conclusions:

The main conclusions and recommendations from the NSHC are as follows:

Through the activities carried out by the relevant working groups, it is acknowledged that the NSHC is actually committed to implicitly developing a risk assessment programme (re-survey plan, charting, comparison of governance principles, etc.). However, due to other important national commitments and budget constraints, the NSHC admits that progress made by the different WGs are not as quick as expected.

Meanwhile, the European Commission is playing an increasing role that impacts national HO activities, directly or through the mandatory derived national obligations (for some members). It is therefore important to remain pro-active and to emphasize the role of the IHO as the relevant technical and consultative organization in order to avoid duplication of efforts and also as leverage for improving national EU and non-EU HOs responsibilities.

The development of e-navigation (including S-100) together with the ECDIS carriage requirement implementation plan is an important step forward that the NSHC member states take into consideration.

Time has come to a faster pace in improving the ENC coverage, consistency, and quality in order to meet IMO and users' requirements.

6. Proposals for adoption by the XVIIIth IH Conference:

The Conference is invited to note the report.

10. ROPME SEA AREA HYDROGRAPHIC COMMISSION (RSAHC)

1. **Chair:** Cdr. Thani al Mahrouki, (Oman) since 2009
 Capt. Zafar Mansoor TIPU (Pakistan) 2006 to 2009

- Vice-Chair:** Mr. Vladan JANKOVIC (Qatar) since 2009
 RAdm Abdul AL-SHEHRI (Saudi Arabia) 2006 to 2009

2. Membership:

Members:

Bahrain, Iran, Kuwait, Oman, Pakistan, Qatar, Saudi Arabia, United Arab Emirates.

Associate Members:

United Kingdom, United States of America.

Observers:

Regional Organization for the Protection of the Marine Environment (ROPME), Middle East Navigation Service (MENAS) and Arabian Maritime and Navigation Aids Services (AMNAS).

IHB Representatives:

Captain Hugo GORZIGLIA (Director) and Mr. Steve SHIPMAN (PAH)

3. Meetings.

Two meetings were held during the period (May 2007 – April 2012).

- a. 3rd Meeting - IHB, Monaco (8-9 June 2009)
- b. 4th Meeting - Muscat, Oman (21-22 March 2011)

4. Agenda Items:

The main subjects dealt with during the 3rd and 4th meetings are:

- a. Review of the Statutes of the Commission.
- b. Report of the IHB.
- c. National Reports.
- d. Review of Status of Hydrographic Surveying and Nautical Charting in the ROPME Sea Area Region (IHO Special Publication C-55 and questionnaires / updates from RSAHC Countries).
- e. Establishment of RSAICC-WG (IHO CL23/2010).
- f. Progress on the implementation of the INT Chart Scheme.
- g. Progress on the implementation of ENC coverage and other ENC issues.
- h. New techniques and equipment in Hydrography and Oceanography.
- i. Promulgation of Radio Navigational Warnings within NAVAREA IX area, MSI in NAVAREA IX and the implementation of GMDSS.
- j. Capacity Building matters.
- k. RSAHC input to WEND-WG report to IRCC3.
- l. Development of Marine Spatial Data Infrastructure (MSDI) in the region.

m. Engagement of ROPME Sea Area members with IHB, IHO, IRCC and IHOWGs.

5. Conclusion.

4th RSAHC meeting was just less than 2 years from the 3rd meeting with most of the Member States present which is an encouraging sign compared to the previous meetings. Next meeting will be in February 2013 in Kingdom of Saudi Arabia (to be confirmed).

6. Proposal for adoption by XVIIIth I.H. Conference.

The Conference is invited to note the report.

11. SOUTH EAST PACIFIC HYDROGRAPHIC COMMISSION (SEPHC)

1. Chairs since 2007 to date:

- Period 2005 – 2008 Commander Mario Proaño Silva and Captain Galo Garzón López from Ecuador
- Period (May 2008 – Apr 2011) Rear Admiral Leonardo Santamaría Gaitán from Colombia
- Apr 04 2011 to date Captain Patricio Carrasco from Chile

2. Membership: Chile, Colombia, Ecuador, Perú.

3. Meetings:

- 8th Meeting Cartagena de Indias, Colombia 12 to 14 May 2008
- 9th Meeting Cartagena de Indias, Colombia 15 to 18 November 2010
- 10th Meeting Valparaíso, Chile 04 to 06 April 2011

4. Agenda items

1. Workshop on Improvements of rivers survey techniques. Year 2007. Iquitos – Peru.
2. Statues review. Year 2008 and 2010 – Cartagena de Indias – Colombia.
3. Implementation of Capacity Building Programme for the Member States of the Commission. Period 2008 – 2012.
4. Workshop on implementation and diffusion of Hydrographic Data Bases. 28 to 31 October – 2008. Cartagena de Indias – Colombia.
5. Multibeam Course of MACHC and SWATHC. Invitation to participate to members of SEPHC. 24 to 28 November 2008. Niteroi – Brazil.
6. Updating Seminar on surveys, production and distribution of ENC's. Invitation from MACHC. July 2009. Niteroi – Brazil.

7. Multibeam Course. Attended by one representative of each Member Country of the Regional Commission, invited by MACHC. July 2009. Niteroi - Brazil.
8. First Meeting of Technical Experts Working Group. Workshop on Homologation of ENC data to improve ENC production lines. 06 to 08 April. Valparaiso – Chile.
9. Use of video-conferences to improve follow-up of agreed actions.
10. In 2010 started links with the Maritime Service of Panama to invite that country to join the Commission.

5. Conclusions

- With the achievement of the first Meeting of Technical Experts Working Group of the Commission, and the use of video conferences as media to follow up agreed actions it has been confirmed that the Commission is sailing on the right track to improve, with practical solutions, its contribution to hydrography on this part of the planet.
- Within Member States of SEPHC there have been some disasters (basically tsunamis) that made their Hydrographic and Oceanographic Services valuable organizations that could contribute to others with their experiences and activities on these matters.
- In this regard SEPHC is ready to contribute to elaborate training plans, seminars, workshops, etc, that could help to improve, with concrete actions, to preparedness of Member States to face these types of disasters.

6. Proposal for adoption by the XVIIIth Conference

The Conference is invited to note the report.

12. SOUTHERN AFRICA AND ISLANDS HYDROGRAPHIC COMMISSION (SAIHC)

1. **Chair:** Captain Abri KAMPFER, Hydrographer , South Africa
Vice Chairman: Mr Abdool Oozeer, PS Ministry of Housing & Lands, Mauritius
2. **Membership:** France, Mozambique, Mauritius, Norway, South Africa and United Kingdom.
Associate Members: Angola, Kenya, Malawi, Madagascar, Tanzania, Portugal, Comoros, Namibia and Seychelles.
Observers: Brazil and United States of America

3. Meetings:

6th SAIHC Conference, Malawi, Mangochi, 27 – 28 August 2007.

7th SAIHC Conference, La Réunion, Saint Denis, 16 – 17 September 2009.

8th SAIHC Conference Namibia, Walvis Bay, 6 – 7 September 2011.

4. Agenda Items

The SAIHC Conferences tend to work to a standing agenda with modifications for new issues as they arise. The principal agenda items dealt with during the above-mentioned meetings are:

- Feedback from other IHO Bodies affecting SAIHC
 - **IRCC**
 - **CBSC**
 - **IHB**
- SAIHC Activities in the light of IHO Work Programme
 - INT chart scheme for Region H and NAVAREA VII Self Assessment: Progress made since last meeting; actual Charting Status; ENC production status; new requirements and modifications proposed to the scheme.
 - Bilateral and Regional Cooperation Agreements, Projects and Regional Capacity Building Management Plan. CBSC Technical Visits and Regional Projects.
 - Presentation of National Reports: Hydrographic surveying, nautical charting, nautical publications and information status
 - Status of Hydrographic Surveying and Nautical Charting (C-55)
 - Procedures in response to Marine Disasters
- Marine / Hydrographic Spatial Data Infrastructure
- Feedback on Regional Projects
- Revision of SAIHC Statutes

Conclusions

Main conclusions were as follows:

- Member States were urged to implement actions to accelerate the process of ratification of the Protocol of Amendments to the IHO Convention in order to meet the end of 2011 deadline.
- Member States were encouraged to approve the applications for IHO membership of Haiti and Montenegro.
- All recipients of the IHO Technical visits were unanimous in their praises of the value of the Technical visits in creating awareness on Hydrography at higher levels of decision-making in their respective countries.
- To encourage and to assist Member States to subscribe to IHO and IALA conventions and to work towards establishing Hydrographic and Aids to Navigation institutions.

- Distribute IHO resolutions to Member States. Encourage the exchange of relevant hydrographic information and to stimulate communication among Member States. The training opportunities offered by IHO Member states are of particular importance to assist with building of Hydrographic capacity in the region.
- The importance of C-55 was re-iterated as it forms the basis of establishing capacity building needs in the various regions. All Member States were urged to keep C-55 up to date.
- SAIHC strategies to involve non-IHO Member States in RHC's activities were established to be achieved by regular technical visits, correspondence forwarded by the Chairman and annual SAIHC meetings.
- Emphasis was placed on the importance of IHO reference documents to be used in compliance with INT charting standards. Member states were encouraged to comply with these standards.
- The need for MSI was emphasized, especially in the Great Rift Valley Lakes region.
- ENC coverage is similar to that of INT Chart coverage and this is mainly due to the sterling efforts of the SAIHC Member States with charting responsibilities. Deficiencies in charting coverage will only be improved through modern surveys as the lack of data is the main inhibitor.
- Care should be taken of duplicating work in areas where modern surveys already exist. Recipient states should forward all survey data to the relevant charting authorities.
- Generic Bilateral Agreement for the provision of Hydrographic Services created by France is considered a very good example of the type of agreement that can be used by Member States and associate members who require hydrographic services or wish to enter into a Bilateral Agreement with another contracting government, to comply with the SOLAS Convention obligations.
- SAIHC Statutes to be amended to reflect annual meetings, as well as the venues for the meetings to be amended to allow for the SAIHC meetings to be held outside of the SAIHC region.

5. Venue and date of next meeting

The 9th SAIHC Conference will be held in Mauritius in September 2012.

6. Proposals for adoption by the XVIII International Hydrographic Conference

The Conference is invited to note the report.

13. SOUTH WEST ATLANTIC HYDROGRAPHIC COMMISSION (SWATHC)

- 1. Chairs:**
- Captain Orestes PEREYRA (Uruguay) from 2011
 - Vice-Admiral Luiz Fernando PALMER (Brazil) 2010 - 2011
 - Rear-Admiral Andrés Roque DI VINCENZO (Argentina) 2009 - 2010
 - Captain Orestes PEREYRA (Uruguay) 2008 - 2009
 - Vicealmirante Edison LAWRENCE (Brazil) 2007 - 2008

Vice-Chairs: Rear Admiral Andres Roque DI VINCENZO (Argentina) from 2011
 Captain Orestes PEREYRA (Uruguay) 2010 - 2011
 Vice-Admiral Luiz Fernando PALMER (Brazil) 2009 - 2010
 Rear-Admiral Andrés Roque DI VINCENZO (Argentina) 2008 - 2009
 Captain Orestes PEREYRA (Uruguay) 2007 - 2008

2. Membership:

- a. Full Members: Argentina, Brazil and Uruguay.
- b. Associate Members: Paraguay.
- c. Observers:
 Country: Bolivia
 IHB : Captain (CH) Hugo Gorziglia.

3. Meetings:

- a. 1st Meeting - Buenos Aires, Argentina – April 10th– 12th, 2007.
- b. 2nd Meeting - Rio de Janeiro, Brazil – March 18th– 19th, 2008
- c. 3rd Meeting - Montevideo, Uruguay – March 26th– 27th, 2009
- d. 4th Meeting - Buenos Aires, Argentina – March 25th– 26th, 2010
- e. 5th Meeting - Arraial do Cabo, Brazil – March 24th– 25th, 2011
- f. Next Meeting - Montevideo, Uruguay – March 15th– 16th, 2012

4. Agenda Items:

- a. The CBC Representative Report about the Technical Visit to the Hydrographic Offices in Argentina, Brazil and Uruguay was presented. In this report the basic elements to produce a regional hydro-cartographic plan as well as the actions for capacity building were identified. (February 2008).
- b. Continuation of a Planning Working Group composed of technical staff from the three HO's was also recommended to ensure compliance with the agreements to be adopted by the Commission and to facilitate the exchange of experiences and capacities.
- c. Other recommendations were:
 - i. To establish an ENC regional scheme.
 - ii. To define the responsibilities in the production of cells in neighbouring areas.
 - iii. To develop a capacity building plan for the committee.
 - iv. Permanent revision of the IHO Working Programme to identify the activities to be carried out by the Committee.
- d. The regional representation in the future IHO Council was analysed and it was decided that the Chairman of the Commission would be the Representative of the Committee.
- e. The report of the Cartographic Planning Working Group was approved and it was turned into a Planning Commission, with the consequent approval of its Terms of Reference and Rules of Procedure. This Commission will coordinate INT Charts and ENCs production at a regional level in order to achieve their harmonization and to avoid overlapping, in compliance with WEND Principles.
- f. The SWAtHC Cartographic Plan was presented to the IHB, according to the goals set for the creation of the Cartographic Planning Working Group.
- g. To promote a permanent and a regional active participation within the Organization's different levels; representatives from SWAtHC (specifically from Argentina and Brazil) take part in the several IHO Commissions and WG (HSSC, IRCC, CBC, ISPWG).

- h. In 2008, Bolivia and Paraguay's Hydrographic Offices were invited to attend the SWAtHC future meetings and to encourage the regional participation, integration and regional coordination according to provisions in T1.3 Resolution. The requests made by these two nations to join this Commission as Associate Members were accepted and then SWAtHC Statutes were passed to the representatives of the two nations in order to start the integration process. Paraguay, during the 4th Meeting in March 2010, signed the SWAtHC Statutes and from that date became an Associate Member.
- i. The need of the treatment and definition of the expression "inland waters" by the HCIWWG was analysed. It was also pointed out the importance of a correct definition in Spanish.
- j. The members of this Commission agreed that a continuous and rigorous check of their products is essential in order to achieve harmonization between the ENC's and Paper Charts.
- k. SWAtHC Members were recommended to revise S-100 Standard, and the Planning Committee was commissioned to analyze the suitable period of adaptation and application after its approval.
- l. The Planning Committee was commissioned to revise the possibility of a joint edition of such standardized nautical publication as the Symbols and Abbreviations Terms, List of Lighthouses and Maritime Aids to Navigation and a publication with explanations about different topics related to ENC.
- m. SWAtHC members are encouraged to reach maximum widespread of "TRANSITIONING FROM PAPER CHART TO ELECTRONIC CHART DISPLAY AND INFORMATION SYSTEMS (ECDIS) NAVIGATION" which appears as an annex to IMO SN. 1/Cir.276.
- n. An administrative agreement between Brazil, through its "Diretoria de Hidrografia e Navegação" (DHN)" and Argentina, through its "Servicio de Hidrografia Naval (SHN)" was approved to be made for the purpose of achievement mutual support for ISM transmission via SafetyNET service, in case the LES comes to standstill.
- o. According to provisions in IHB Cir 89/2008 on methods used by the Baltic Sea Hydrographic Commission (BSHC) to determine the compilation parameters suitable for the ENC's in the region, and the discussion during the 20th CHRIS Meeting held in Brazil in November 2008, where Member States and Regional Hydrographic Commission Chairmen were invited to study such experience and take into account its application within their own regions, the Planning Committee was commissioned by SWAtHC to study the validity of applying the BSHC model in the areas international boundaries into their jurisdiction.
- p. INT Chart Scheme: SWAtHC INT Chart scheme has a total of 50 charts. From these, 24 charts 48% have already been published.
- q. ENC Scheme: SWAtHC ENC scheme has a total of 222 Cells. From these, 130 Cells (58%) have already been published. The following Cells were planned to be published during 2011.
- i. Argentina: 30 Cells.
 - ii. Brazil: 4 Cells
 - iii. SWAtHC ENC Production and Coverage Status- Including Inland Waters

Country	Cells produced and delivered	Cells produced but not yet available	Cells to be produced	Total
Argentina	29	30	04	63
Brazil	83	04	26	113
Uruguay	18	06	22	46
Total	130	40	52	222

- r. One of the RHC main goals is to create and strengthen capacities through the CBC. Therefore, we may highlight SWAtHC achievement by pointing out the courses, workshops and seminars carried out:
- i. Workshop on river hydrographic surveys. Peru, November 2007.

- ii. Technical support for regional hydrocartographic plan development. Uruguay, February 2008
- iii. MBES training course. Brazil, November 2008
- iv. Workshop on “e-Navigation” and ENC. Brazil, November, 2008 (During CHRIS Meeting).
- v. ENC Workshop Brazil, 2009
- vi. 51st Multibeam Course (OMG-CCOM) Brazil, 2009.
- vii. Workshop on Port and Shallow Water Surveys (MACHC, SEPHC and SWAtHC All countries). Uruguay, 2010
- viii. MSI Regional Course (IHB standard Course implemented with two days for hydro-cartographic basic introduction for operators and NAVAREA Coordinators exchange of procedures and experiences). Brazil, 2011

5. Conclusions:

- a. Through the incorporation of Bolivia in SWAtHC, all country members of the “Hidrovia Paraná- Paraguay” will be represented.
- b. ENC production developments in the region: in this sense we highlight the increasing level of ENC production that allowed to reach an amount of 130 produced and available cells, and this year expects to reach 170 of 222 planned for adequate coverage.
- c. Finally, the study for ENC harmonization in bordering zones initiated by the Planning Committee and the comparison between paper charts and ENC, represent so much qualitative indicators.
- d. Capacity Building: Taking into account the bases on the IHO CBSC strategy, SWAtHC has developed its own capacity building. It is important to emphasize the permanent CBC support in this region, which promotes the optimization of the Hydrographic Offices' products and the advantages of the capacity development in the region.
- e. SWAtHC is committed to carrying forward hydrographic, cartographic and capacity building activities in a close alignment with IHO objectives and goals.
- f. Regarding progress of the ratification of the Protocol of the amendments to IHO Convention, RA Di Vincenzo said that SHN so far had been waiting for the Ministry of Foreign Affairs' comments.
- g. Experience in dealing with marine disasters: at present we have no experience in this matter, during last years there was no serious maritime disaster, which could lead to the need for coordinating actions of national hydrographic services.

6. Proposals for adoption by the XVIIIth I.H. Conference:

The Conference is invited to note the report.

14. SOUTH WEST PACIFIC HYDROGRAPHIC COMMISSION (SWPHC)

- 1. Chair:** Mr Nicholas Pion (Hydrographer, Papua New Guinea) June 2011-
Mr Joseph Kunda (Hydrographer, Papua New Guinea) Nov 2010 - June 2011
Vice Admiral Bruno Frachon (Hydrographer, France) 2010
Vice Admiral Gilles Bessero (Hydrographer, France) 2008-2009
- Vice Chair:** Commodore Rod Nairn, RAN (Hydrographer, Australia) 2011
Mr Adam Greenland (Hydrographer, New Zealand) 2008-2010

2. Membership: Australia, France, Fiji, New Zealand, Papua New Guinea, Tonga, United Kingdom, United States of America

Observers: Cook Islands, Kiribati, Nauru, Samoa, Solomon Islands, Tokelau, Tuvalu, Vanuatu, South Pacific Geoscience Commission (SOPAC), Secretariat of Pacific Community (SPC), Pacific Islands Maritime Association (PacMA)

IHB Representative: Captain Robert Ward (Director)

3. Meetings

8 th Meeting	Papeete, Tahiti	19-20 September 2007
9 th Meeting	Port Moresby, Papua New Guinea	9-11 March 2009
10 th Meeting	Honiara, Solomon Islands	9-10 November 2010
11 th Meeting	Brisbane, Australia	15-16 February 2012 (planned)

4. Agenda Items

4.1 SWPHC Statutes

At its 9th Meeting, the Commission discussed and agreed on the following amendments to the SWPHC Statutes:

- Remove the reference to Appendix 2 as the chart schema at the reference is now on the IHO website.
- Add a Clause on 'Communications' that invites Members to ensure that their contact details in the IHO Yearbook are correct.
- Add a Clause on the election of the Commission representative on the IHO Council (when the Council is established).

4.2 Capacity Building

Capacity Building has been identified as the major issue in the SW Pacific Region. The SWPHC faces particular difficulties due to the remoteness of the region and the fact that it comprises mostly isolated island States, with very limited hydrographic capabilities.

4.2.1 Technical Assessment & Advice Visits

Combined high level and technical visits to various States in the region were carried out under the IHO Capacity Building Work Programme. The aim of these visits was to seek increased levels of support for hydrography from the higher levels of government and at the same time to assess what type of capacity building programmes might be most appropriate.

Solomon Islands Technical Assessment & Advice Visit (October 2009)

Two members of the IHO secretariat (a Director and a Professional Assistant) undertook a technical assessment visit and recommended to the government of the Solomon Islands that the Solomon Islands Maritime Safety Authority (SIMSA), planned for establishment in 2010, be responsible for ensuring the provision of a national hydrographic service.

Cook Islands Technical Assessment & Advice Visit (February 2011)

Two members of the SWPHC (the Hydrographers of Australia and New Zealand) visited the Cook Islands where they met various government officers and parliamentarians in order to raise the level of awareness of the importance of providing national support for improving the hydrography and nautical charting of the country.

Kiribati and Vanuatu Technical Assessment & Advice Visits (November 2011)

An IHB Director and a technical advisor from the UKHO visited Kiribati and Vanuatu. They met various government officers, parliamentarians and hydrographic programme stakeholders in order to raise the level of awareness of the importance of providing national support for improving the hydrography and nautical charting of the country. An initial charting requirements programme was developed during the visits.

4.2.2 Training Courses and Workshops

The following workshops and training courses were carried out as part of the IHO Capacity Building Work Programme for the countries in the region:

Technical Workshop (Port Moresby, Papua New Guinea - March 2009)

A one-day workshop preceded the 9th Meeting of the SWPHC. The objective of the workshop was to raise awareness of the benefit of hydrography in the SW Pacific region and to stress national obligations to provide hydrographic services under SOLAS Regulations.

SWPHC Regional MSI Training Course (Sydney, Australia - August 2010)

A three-day training programme provided practical guidance to persons responsible for the collecting and issuing coastal navigational warnings within a coastal region. The programme also aimed to establish a support network to enable the flow of MSI information from SWP Island States to NAVAREA X and XIV Coordinators to improve safety and increase maritime domain awareness. Representatives from 8 Pacific Island Countries attended the course.

Regional Training Course on Hydrographic Surveying and Introduction to Chart Production (Port Moresby, Papua New Guinea - October 2010)

A two-week course provided training in basic techniques of hydrographic surveys and nautical charting. Its objective was to establish capacity in these fields so that maritime authorities could provide high quality products and services to satisfy the basic requirements for safety of navigation in the area. A total of 13 participants from 8 countries in the region attended the training course.

4.2.3 Future Projects under the IHO Capacity Building Work Programme (CBWP)

Discussions during the 10th SWPHC Meeting identified various applications for CBSC assistance in future years (up to 2015). Requests were essentially related to Phases 1 and 2 of the Capacity Building process as countries in the region are faced with lack of human resources, namely awareness - education, campaign and collection - circulation of information to maintain existing charts and publications. The IHO CBSC Meeting held in May 2011 approved the following projects as part of the 2012 CBWP:

Technical Assessment and Advisory Visits - Samoa, Tonga

To inform, assess current status and note requirements.

Technical Visit to facilitate National Hydrographic Requirements - Solomon Islands (planned for Feb 2012), Cook Islands and Kiribati (planned for 2012 – dates to be decided)

Follow-up Technical Support Visit & Development of Prioritised Hydrographic Survey and Charting Plan.

Hydrographic Administration Training Placements with Regional Hydrographic Offices - Papua New Guinea, Solomon Islands, Vanuatu, Timor Leste

Increased efficiencies in developing Hydrographic administration.

National Hydrographic Capability Development – Papua New Guinea

To upgrade skills of cartographic and chart printing staff.

Ports & Shallow Water Bathymetry Technical Workshop (planned to be held in Brisbane in February 2012)

The workshop will enable the exchange of information and ideas about the challenges faced in conducting port and shallow water surveys in the SW Pacific. Participants will benefit from an improved understanding of port and shallow water surveying activities throughout the SW Pacific region and where they may obtain assistance, advice and other resources.

MSI Regional Workshop - SW Pacific Island Countries

A workshop aimed at establishing a support network and training to enable the flow of MSI from SWP countries to NAVAREA X and XIV Coordinators to improve safety and increase maritime domain awareness.

4.3 Charting – INT Charts and ENC

The ongoing monitoring of progress and refinement of the chart coverage for INT Chart Scheme Region 'L' is being carried out. In compliance with IHO CL 23/2010 a formal correspondence working group, chaired by Australia, was formed to coordinate the limits and production of INT charts and ENC for the SWPHC region. There is now full ENC coverage of the region for navigational purpose bands 1 and 2..

4.4 Liaison with Regional Organisations

Contacts with the regional organisations – the South Pacific Geoscience Commission (SOPAC), the Secretariat of Pacific Community (SPC) and the Pacific Islands Maritime Association (PacMA) are improving. The Vice-Chair (Hydrographer, New Zealand) of the SWPHC attended the 13th PacMA Meeting held in Tonga on 11 May 2009. A paper was presented which discussed the role of the SWPHC within the IHO and highlighted the importance of hydrography in the region to ensure coastal States are aware of their responsibilities regarding hydrographic services under the SOLAS Regulations. Fiji represented the SWPHC at the 14th PacMA meeting held in Suva, Fiji in 2010 and provided briefs on the SWPHC activities. The 10th SWPHC Meeting (Honiara, Solomon Islands, 9-10 Nov 2011) was attended by representatives of PacMA and SOPAC.

4.5 MOUs with Regional Agencies

In 2004 a Memorandum of Understanding (MoU) was signed between the IHO and the South Pacific Applied Geoscience Commission (SOPAC) to provide a framework for continuing liaison between the IHO and SOPAC to ensure the efficient and effective use of hydrographic data collected by the two organisations or their members.

In January 2011 SOPAC was transferred and integrated into the Secretariat of Pacific Community (SPC) as a new Applied Geoscience and Technology Division. The SPC is an intergovernmental organisation that provides technical and policy advice and assistance to its Pacific Island members (totalling 26 member countries and territories). As a result of the SWPHC's initiative an MoU between the IHO and SPC was signed in April 2011. This MoU acknowledges the importance of hydrography and nautical charting and brings it to the attention of many regional governments at the most senior levels for the first time. It also provides a single, high-level point of reference for various practical initiatives and programmes to be undertaken. It also facilitates the exchange of hydrographic information and provides for mutual representation at SWPHC and SPC meetings

5. Closing Statement

The SWPHC continues to face significant challenges, brought about by its isolation, limited marine traffic, the very limited resources available in the many small island States in the region, yet the pressing need for improvements in hydrography and nautical charting because of the huge dependence on limited maritime transport, trade and tourism. As well as continuing with direct capacity building efforts to individual States, greater engagement and collaboration with SPC and, in particular, the potential development of SOPAC's current geophysical and environmental surveying capabilities to include hydrographic surveying for charting purposes are seen as important activities for the next five years and beyond.

6. Proposals

The Conference is invited to note the report.

15. USA AND CANADA HYDROGRAPHIC COMMISSION (USCHC)

1. Co-Chairs:

From 2010 (33rd and 34th USCHC and current)

Dr. Savithri Narayanan, Dominion Hydrographer, Canada

Captain John E. Lowell, Jr, National Hydrographer of the United States

2007- 2009 (30th to 32nd USCHC)

Dr. Savithri Narayanan, Dominion Hydrographer, Canada

Captain Steve Barnum, National Hydrographer of the United States

2. Membership: Agencies

United States of America:

i) NOAA Office of Coast Survey,

ii) U.S. Navy, and

iii) National Geospatial-Intelligence Agency (NGA)

Canada:

Canadian Hydrographic Service

3. Meetings:

31st USCHC, April 16, 2008 (Ottawa, Canada)

Charting Advisory Committee Meeting (CAC)

32nd USCHC, April 9, 2009 (Silver Spring, Maryland, USA)

Charting Advisory Committee Meeting (CAC)
33rd USCHC, May 17-18, 2010 (Ottawa, Canada)
Charting Advisory Committee Meeting (CAC)
34th USCHC, April 25, 2011 (Tampa, Florida, USA)
Conference calls as required inter-sessionally

4. Agenda Items:

- Identify issues and develop an action plan to resolve the overlap of ENC's in transboundary areas of the U.S. and Canada
- Mutual personnel exchange to develop cross-office cartographic and technology experience necessary to implement Transboundary charting
- Catalogue existing U.S. and Canadian ENC's
- Undertake an initial ENC demonstration project in the Straits of Juan De Fuca and document lessons learned regarding various technical issues and policy decisions.
- Develop a Work Plan for the 2011-2012 period for three remaining U.S.-Canada transboundary regions: a) Pacific, b) Atlantic and c) Great Lakes.
- Develop USCHC input to the newly established Arctic Regional Hydrographic Commission including recommendations of ARHC boundaries as potentially affect neighbouring RHCs

5. Conclusions:

USCHC Actions contributing to the IHC Work Programme 2008-2012 under Programme 3, Element 3.1 "Regional Hydrographic Commissions".

- United States and Canada signed a Level of Services Agreement outlining expectations and roles of cooperation between the two national hydrographic offices toward the joint development of ENC's for the Pacific Ocean, Atlantic Ocean and Great Lakes transboundary regions of the two countries.
- U.S. and Canada signed the "U.S.-Canada Transboundary ENC Project Report" summarizing the collaborative process, issues addressed, conclusions, and lessons learned from the initial demonstration project focusing on the Straits of Juan de Fuca.
- The Commission agreed to a time-line and actions for addressing three remaining identified transboundary areas, including a communications plan to inform stakeholders of proposed ENC changes.
- The Commission determined respective ENC chart cuts for the U.S.-Canada transboundary areas in the Pacific and Atlantic Region (*by 1st Quarter 2012*).
- U.S.-Canada Pacific Region (Juan De Fuca and Haro Straits) Transboundary ENC Pilot Release scheduled (*January 2012*).
- The USCHC developed input to support the establishment of the ARHC, including recommendations for the regional commission boundary areas.

6. Proposals for adoption by XVIIIth I.H. Conference:

The Conference is invited to note the report.

REPORT BY THE HYDROGRAPHIC COMMISSION ON ANTARCTICA (HCA)

1. **Chair:** Captain Hugo GORZIGLIA, IHB Director
Vice-Chairs: Commodore Rod NAIRN, Australian Hydrographer, 2007-2008
Rear Admiral Ian MONCRIEFF (United Kingdom), 2008- 2010
Commodore Rod NAIRN, Australian Hydrographer, 2010 – 2012

2. **Membership:** Argentina, Australia, Brazil, Chile, China, Ecuador, France, Germany, Greece, India, Italy, Japan, Korea (Rep. of), New Zealand, Norway, Peru, Russian Federation, South Africa, Spain, United Kingdom, Uruguay, USA and Venezuela.

Observers: Antarctic Treaty Secretariat (ATS), Council of Managers of National Antarctic Programmes (COMNAP), International Association of Antarctic Tour Operators (IAATO), Scientific Committee on Antarctic Research (SCAR), International Maritime Organization (IMO), Intergovernmental Oceanographic Commission (IOC), General Bathymetric Chart of the Oceans (GEBCO), International Bathymetric Chart of the Southern Ocean (IBCSO).

3. **Meetings:** 7th Meeting, Buenos Aires, Argentina, 3-5 October 2007
8th Meeting, Niterói, Rio de Janeiro, Brazil, 06-08 October 2008
9th Meeting, Cape Town, South Africa, 12-14 October 2009
10th Meeting, Cambridge, United Kingdom, 20-22 September 2010
11th Meeting, Hobart, Tasmania, Australia, 5-7 October 2011

4. **Agenda Items:**

4.1 Membership.

One of the HCA standing agenda items refers to the HCA membership. The Commission has taken different initiatives to reinforce the participation of countries which do contribute to the hydrographic and cartographic activities in Antarctica. During the period covered by this Report, the following Member States have signed the HCA Statutes and have become HCA Members: Japan (2008), Korea (Republic of) (2008), Peru(2007), Uruguay(2008), USA (2007) and Venezuela (2009).

4.2 HCA Statutes.

At its 7th Meeting, the Commission examined, discussed and proposed amendments to the HCA Statutes to comply with the new IHO structure. The following two options were considered: 1) HCA Chairperson from a Member State and supported by the IHO Secretariat; and 2) HCA Chairperson from the IHO Secretariat. There was overwhelming support for the second option. The Commission also agreed on a proposed amendment to Article 8(e) of the revised IHO General Regulations to accommodate the particular case of HCA, i.e. no coastal States exist within the region and, while HCA members must be IHO Member States, they must also have acceded to the Antarctic Treaty and contribute resources and/or data to the IHO INT Chart coverage of Region M. The proposed amendment was approved by Member States in June 2008 (CL53/2008).

4.3 Interaction with other International Organizations.

4.3.1 Participation in HCA Meetings.

The HCA has been quite successful in working closely with other related organizations which have been invited to attend HCA meetings to share their views and experiences, aiming at building the importance of hydrography in Antarctica, a strong common objective.

The HCA has benefited from the support of all international organizations that participate as Observers. The annual Antarctic Treaty Consultative Meeting (ATCM) of the Parties is provided with an IHO/HCA Report that keeps the Parties well informed on the progress and the shortcomings the HCA is facing in providing adequate nautical charts and information contributing to safe navigation in Antarctica. The ATCM has adopted several recommendations requesting AT signatory governments to increase the priority and to allocate resources to improve the level of hydrographic surveys and nautical chart production.

COMNAP and IAATO have been actively involved with and contributed to HCA work, particularly offering their views on priority areas requiring hydrographic surveys and nautical charts, as well as being strongly supportive in contributing to raise awareness at all levels, on the importance of allocating more resources to improve the availability of nautical charts covering Antarctica. Both organizations have offered the possibility to use Ships of Opportunity (SOO) to gather hydrographic data and have motivated their members to use a standardized format to render hydrographic data in support to HCA work.

IOC, GEBCO, the Regional project IBCSO and SCAR have actively promoted the gathering of bathymetric data collected for scientific purposes by different institutions, particularly those collected under projects executed as part of the research conducted during the International Polar Year. The HCA has appreciated this contribution and has stressed the importance of making all available bathymetric data known to the IHO DCDB.

IALA has recently joined the work of the HCA and has participated as Observer, contributing to the overall discussion on safety of navigation in Antarctic waters. Unfortunately, due to various circumstances, IMO has not been able to attend any of the meetings held during the period covered by this report.

4.3.2 Technical Seminars delivered.

At the XXXI ATCM (Ukraine, 2008) a Seminar on The Importance of Hydrographic Activities in Antarctica was delivered by HCA, covering topics like: "Hydrography in the Antarctica"; "Hydrography and its contribution to the protection of the marine environment in Antarctic waters"; "Hydrography and its contribution to Antarctic Sciences"; "Hydrographic and Cartographic Status in the Antarctica" and "Practical initiatives to improve hydrography and nautical charting in Antarctica". Over 300 persons attended the seminar the outcome of which was a concrete resolution from ATCM recommending Government Parties to:

1. encourage their national programme vessels and other vessels, as appropriate, to collect hydrographic and bathymetric data on all Antarctic voyages, as practicable;
2. cooperate with the HCA to improve hydrographic surveying and charting in the Antarctic region including working to:
 - a. clarify with HCA requirements for the collection of hydrographic data of sufficient quality for use in the development of electronic navigational charts and,
 - b. identify priority areas for the collection of additional hydrographic and bathymetric data
3. forward any Antarctic hydrographic and bathymetric data collected to the relevant international chart producer for charting action;

4. endeavour to find additional resources towards improving hydrographic surveying and charting in the Antarctic region.

The HCA also organized a similar event at the 2009 COMNAP held in Chile. The structure of the seminar was very much like the original one. Over 150 delegates from 26 countries were present. As an outcome of this activity, COMNAP agreed to put in practice the “**IHO Collection and Rendering of Hydrographic Data Form**”, included in the document “**Collection and Rendering of Hydrographic Data obtained by SOO in Antarctic Waters**” submitted by the IHO/HCA. Also, COMNAP decided to commit the review and provide comments on the HCA Hydrographic Survey Priority List.

Another seminar was organized and delivered at the 21st Annual Meeting of IAATO that took place in Turin, Italy, 2010. On this occasion, the objective of the presentation was to raise awareness at the operational level on the importance of hydrographic activity in the Antarctica; to achieve a better understanding of IAATO on the existing risks associated to the present status of charting in the region and what IHO/HCA is doing to fill the gaps and, finally, to jointly explore on WHAT and HOW IAATO can contribute to IHO/HCA efforts to improve the situation. Close to 100 IAATO Members and Observers were present. The outcome was that data collected by IAATO ships constitute a concrete potential contribution from IAATO to the IHO/HCA, if such data is collected following standards. In this line, the “**IHO Collection and Rendering of Hydrographic Data Form**” was adopted by IAATO.

An HCA presentation was also made to the 22nd Annual Meeting of IAATO in Hobart, Australia in May 2011. IAATO participants were informed on the progress made in INT Charts and ENC production and availability. Other main aspects highlighted were:

1. HCA has been successful in spreading recognition of the needs for charts but not successful in getting more data and information on to charts; an ongoing challenge.
2. The contribution made by IAATO by providing HCA data kept under its domain. This is a positive sign that HCA recognizes and promotes to encourage further data submissions.
3. The value of technical coordination visits between the relevant HCA Member States and IAATO members at all practicable port calls made before and / after heading to Antarctica to ensure fluent exchange of hydrographic data and information.

4.4 Charting - INT Charts and ENCs.

The HCA has analyzed the INT Chart scheme progress at all its annual meetings and have kept updated the list of INT Charts covering Region M through slight modifications suggested by producer nations and considering some new requirements from end users. Today, the INT Chart scheme includes 108 Charts out of which 65 are already available.

The Commission has established a small (2007) and a medium scale (2009) ENC coverage and is identifying a large scale coverage. INT Chart producer nations in region M have agreed to also consider the production of the ENCs covering same areas as paper charts do. ENC production has started and 52 ENCs are so far available.

With regard to chart production, in general, the HCA has identified the urgent need to avoid the overlap that occasionally exists between national cartography and the INT Chart series. This situation, if not solved, may expose the mariner to select among different products, a non-desired situation. The HCA has strongly urged its members to examine this situation and to adopt corrective measurements. Priority should be given to the provision of the most updated and complete INT chart version covering Antarctic waters.

4.5 Prioritized Hydrographic Survey Plan for Antarctica.

The HCA has discussed at its meetings the progress made by the HCA Survey Prioritization Working Group that was established in 2004 to develop and propose guidance on a Hydrographic Survey Plan, based on the INT Chart scheme demand of hydrographic data. The HCA Long Term Survey Plan together with the HCA Survey Short List has been examined annually and an updated version of the document has been prepared and adopted at each meeting. This plan constitutes a guide for HOs when planning their hydrographic activities.

4.6 Other matters

There have been many other activities the HCA has accomplished during the period 2007-2011. In this report we have provided some details of those considered to be of higher relative relevance. Nevertheless, keeping the IHO/HCA web page as complete and friendly as possible allows the external world to access information on what the IHO is doing to improve safety to navigation in Antarctica.

Also the IHO/HCA participation in the Antarctic Treaty Experts Meeting convened to discuss Antarctic Tourism (2009) constitutes a milestone of great significance and a clear demonstration of the consideration IHO/HCA has within the Antarctic Treaty system.

A Special reference also needs to be made to the IHO/HCA participation in the 50th Anniversary of the signature (USA 2010) and 50th Anniversary of the entering into force (Argentina 2011) of the Antarctic Treaty. The IHO was invited to both ceremonies and was present at both. Finally, at the 11th HCA meeting held in Hobart, Australia, the delegates endorsed a Strategic Statement which builds on the HCA Statutes to provide a clear direction for the Commission for the next 5 years (see Annex).

5. Conclusions:

The HCA has organized, prepared and conducted the meetings scheduled for 2007, 2008, 2009, 2010 and 2011, reporting on their outcomes to its members and the IHO, through the IHB. The HCA has coordinated and actively participated with other Antarctic relevant organizations having received strong support in raising awareness on the importance of hydrography in Antarctica. The HCA has followed up the action lists agreed at each HCA meeting and has encouraged the INT Chart scheme production and priority hydrographic surveys in support of the chart production.

Due to the new IHO structure that started in 2009, the HCA became an IRCC member and reports to this Committee.

As a general final conclusion, we might say that the HCA has duly completed the tasks identified in the IHO Work Programme for the period covered by this Report and has identified its Strategic Direction and Strategic Goals for the years to come, based on its Statutes.

6. Proposals for adoption by XVIIIth I.H. Conference:

The Conference is invited to note the report.

ELEMENT 3.2 INCREASE PARTICIPATION BY NON-MEMBER STATES

(Included under each individual RHC Report under Element 3.1 when applicable)

ELEMENT 3.3 CAPACITY BUILDING MANAGEMENT**REPORT BY THE CAPACITY BUILDING SUB-COMMITTEE (CBSC)**

1. Chair:	Mr. Thomas Dehling (Germany)	since 2011
	Mr. Jānis Krastiņš (Latvia)	2009-2011
	Capt. Hugo Gorziglia (IHB)	2007-2009
Vice-Chair:	Commodore Vinay Badhwar (India)	since 2011
	Cdr. Brian Common (USA)	2009-2011
	Capt. Mike Barritt (UK)	2007-2009
Secretary:	Capt. Alberto NEVES (IHB)	since 2011
	Capt. Federico BERMEJO (IHB)	2007-2011
2. Membership:		
Members:	Capt. Hugo GORZIGLIA	IHB
	Mr. Sun BING (China)	EAtHC
	Ing. en chef Yves GUILLAM (France)	EAtHC
	Capt. Wesley CAVALHEIRO (Brazil)	MACHC, SWAtHC
	Mr. Noralf SLOTSVIK (Norway)	NHC, NSHC
	Mr. Jeff BRYANT (UK)	NIOHC
	Capt. Abri KAMPFER (South Africa)	SAIHC
	Cdr. Enrique SILVA (Chile)	SEPHC
	Cdre. Rod NAIRN (Australia)	SWPHC
	Mr. Jānis KRASTIŅŠ	Latvia
	Dr. Shigeru KASUGA	Japan
	Cdr. CARDENAS	Mexico
	Mr. Augusto BATA	Mozambique
	Capt. José GIANELLA	Peru
	Mr. Ho JIN	Republic of Korea
	VAdm Prayuth NETRPRAPA	Thailand

Note: the members representing the RHCs are also their CB Coordinators. Ten of the 15 RHCs have CB Coordinators.

3. Meetings:

The Sub-committee, formerly known as Capacity Building Committee (CBC), was established in 2003 following a proposal submitted by the IHB (CL 7/2003) and approved by Member States and has been renamed on 1st January 2009 (ref. CL 94/2008). Since IHC17 it has met annually in accordance with the Rules of Procedure:

- CBC 5: Riga, Latvia (5 - 7 June 2007);
- CBC 6: IHB, Monaco (27 - 29 May 2008);
- CBSC 7: Seoul Rep. of Korea (11 - 13 May 2009);
- CBSC 8: New Orleans, USA (14 - 16 June 2010);
- CBSC 9: Niteroi, Brazil (23-25 May 2011).

4. Agenda Items:

Purpose of the Sub-committee

The Capacity Building Committee is an IHO Committee established in 2002 with the following main objectives:

- Continuously assess the hydrographic surveying, nautical charting and nautical information status in nations and regions where hydrography is developing,
- establish and maintain close relationships with national agencies and international organizations, which may provide funding or other support for technical assistance projects, and study the procedures to access the funds for Technical Assistance available from such organizations,
- cooperate with Regional Hydrographic Commissions in the creation of Study Teams or Action Groups to carry out assessment studies in identified areas.

Defining priorities and improving the strategy

The Sub-committee reviewed and rendered the CB Strategy more precisely. After that five procedures have been developed to clarify, and provide a clear structure for the CB provision.

Joint CB efforts

Following an initiative from the IHB, the responsible officers for Capacity Building matters in the IMO, IOC, WMO, IALA, IAEA and IHO decided to hold annual meetings to consider matters such as the procedures established in each organisation, their Work Programmes and Funding mechanisms, the experiences gained in the provision of CB, the experience with Funding Agencies and Organisations, the Status of joint co-operation projects and the areas of common interest. Meetings have been held up to date on a yearly basis since 2007. In 2011 the FIG joined the meeting as an observer.

Some parts of the CB programme have been realized in cooperation with the IMO and with the Nippon Foundation. The Republic of Korea also provided a substantial increase in the annual contribution, up to US\$ 400,000 (to be defined annually).

Implementing regional CB coordinators

The 17th International Hydrographic Conference agreed in Decision 17 to ask the CBC, in consultation with RHCs, to consider the part-time allocation of personnel to act as Regional Staff Officers to assist those chairmen of Regional Hydrographic Commissions (RHCs) who have limited human resources with which to sustain the capacity building effort in their regions. As a result the CBSC in coordination with the RHCs developed the following amendment to IHO Resolution T 1.3. which was approved by Member States in 2007:

2 bis Where Capacity Building is required in a region, RHCs are recommended to establish an internal body to deal with CB matters and to designate a focal point to ensure continuity in the CB process. This part-time allocation to assist RHCs should come primarily and ideally from an HO within the region. If that is not possible then the RHC might agree to request support from another RHC or an HO that might wish to take that responsibility.

The RHCs that are receiving support from the CB fund have established CB coordinators. It is highly recommended that these coordinators are members of the CBSC and participate in the CBSC meetings.

Further development of the CB WP and MP

The SC has been very active in developing the Management Plan further. Work Programmes have been elaborated in a yearly schedule on the basis of the information gathered from the RHCs, C-55 and technical visits.

CBSC WP 2013-2017:

The Sub-committee requested all RHC's to communicate their most urgent capacity building needs in order to have them included in the 2013-2017 CB Programme, a sub set of the IHO WP. At the time of writing this report, this activity is still in progress.

Growth of the CB Provision

A positive trend can be recognized when looking at the growth rate of the number of submissions from RHCs and the yearly expenditure from the CB-Fund.

The intensified efforts of the IHO in the field of CB are evident in the activities that have been organised in the following fields, since the last EIHC:

- Technical Visits (19 visits to 18 countries)
 - Cameroon Costa Rica Namibia Malawi
 - Belize Georgia Vietnam El Salvador
 - Guatemala Honduras Belize Comoros
 - Kenya Haiti Solomon Islands
 - Lebanon Vietnam Brunei Tonga
- Technical Workshops: 8
- Technical Seminars: 1
- Courses:
 - MSI: 5
 - Hydrography and Cartography: 5

Detailed information on the activities can be obtained from the IHO website.

5. Conclusions:

- 5.1 The establishment of the IHO CBSC has been an excellent decision as again important progress has been achieved in various directions. CBSC Members have worked hard to set principles and procedures with a strong “team work” approach. The CBSC would not have been successful without the comprehensive assistance of Member States, providing personal, financial and practical support.
- 5.2 The latest version of the publication C-55, in its digital format, constitutes a good tool for, among other tasks, the identification of capacity building needs. To extend the use and usability of C-55, the publication should be further improved. An action item therefore has been defined at IRCC3 to design a framework for C-55 development. Reference is made to the report from IRCC3 (action item 9). CBSC is actively contributing to that development.
- 5.3 The CBSC has approved a set of Procedures to improve CB assessment, provision and accountability. The five Procedures are indicated below:
 1. Procedure and model for submitting a request of support to the CBSC.
 2. Procedure to be followed by RHCs before submitting requests of support to the CBSC.
 3. Reviewing process to be followed by the IHB, prior to include request in the Draft Management Plan.
 4. Procedure to be followed by the CBSC when considering submission requesting support.
 5. Procedure for performance assessment.

Another procedure is under construction, to be presented to CBSC10, to organize the project execution.

6. Proposals for adoption by the XVIIIth I.H. Conference:

The Conference is invited to note the report.

REPORT BY THE IHB ON THE CAPACITY BUILDING FUND (CBFUND)

1. General Information.

The Capacity Building Fund (CBFund) is defined as a mechanism to support the Capacity Building Work Programme (CBWP) developed by the Capacity Building Sub-Committee (CBSC) and approved by Member States.

The resources of the CBFund shall be used to go in support of the main capacity building activities, as for example: a) technical assistance; b) training and education; c) financial assistance for participation in IHO events; and d) start-up funding for hydrographic elements of projects.

The objective is to assist developing countries in building human and institutional capacities for the effective development of hydrographic surveying and nautical charting capabilities needed to comply with the IHO objectives and related requirements defined in SOLAS and in other international regulations.

The CBFund is integrated by normal IHO Budget allocation; donations received in support of IHO Capacity Building initiatives and external contributions earmarked for a specific capacity building initiative. The Republic of Korea has made an outstanding contribution to the IHO CBFund during the period of this report. Many other IHO Member States have contributed in kind to the IHO CB Programme, either providing the venue, instructors, local support, and other items to ensure an effective implementation of the CB activities.

2. 2007- 2011 CBFund development and analysis.

YEAR	Funds at 1 st January	IHO Budget allocation	External Contribution (From the RoK)	Total annual availability	CBWP Budget	REAL CBWP Expenses	Balance
2007	196772	64000	79721	340493	181500	93779	87721
2008	246714	70000	94405	411119	325267	101641	223626
2009	309478	148000	72137	529615	294782	161007	133775
2010	368609	135000	64195	567804	319880	174074	145806
2011	393730	55000	257592	708880	502435	310222	192213
2012	398658	55000	tbd	tbd	514610	tbd	tbd

Analysing the above table we can conclude as follows:

- a) The original IHO allocation for the CBFund from the regular budget has been increased twice with resources not spent on other items. This has allowed a great flexibility for the CBSC to support projects submitted for funding.
- b) The external contribution that in its totality comes from contributions made by the Republic of Korea, in conformity with the MOU in force, has been increased since 2011. These resources not originally anticipated by the CBSC are being spent on priority projects identified during 2011 and following the last CBSC meeting. From 2012 onwards, the CBSC will be able to consider the increase of this contribution.
- c) The two flows of income show an increase in the total annual availability of resources in the CBFund.
- d) A light analysis may conduct the reader to interpret that the CBSC has been too conservative in committing resources to the CBWP. The truth is that RHCs originally were not prepared/ready to submit proposals for funding. After identifying the convenience of having a regional coordinator to keep the continuity in compiling and following up all CB needs in its region under control, the situation is improving. RHCs have taken their time to get organized and identify and assign priorities to their regional needs. This positive change is observed in the increase of the CBWP Budget allocated.
- e) The low Real Expenses figures represent the difficulties RHCs have had to implement their identified and supported activities. Coordination to implement activities is suffering from communications' limitations with participants/beneficiaries. The establishment of procedures worked out by the CBSC is contributing to improve the situation.
- f) The overall situation has been considered in the definition of the next 5-year allocation to the CB Fund.

3. Proposals for adoption by the XVIIIth I.H. Conference:

The Conference is invited to note the report.

REPORT BY THE FIG/IHO/ICA INTERNATIONAL BOARD ON STANDARDS OF COMPETENCE FOR HYDROGRAPHIC SURVEYORS AND NAUTICAL CARTOGRAPHERS (IBSC)

- 1. Chair:** Prof. Dr. Lysandros Tsoulos [ICA] from 2011
Mr. Gordon Johnston [FIG] 2008-2010
Capt. Andrew Armstrong [IHO] until 2007
- Vice Chair 1 :** Prof. Dr. Luciano Surace [IHO]³
Prof. Dr. Lysandros Tsoulos [ICA] 2008-2010
- Vice Chair 2 :** Prof. Dr. Razali Mahmud [FIG]
Prof. Dr. Luciano Surace [IHO] 2008-2010

³ Prof. Dr. Luciano Surace resigned after the IBSC 2011 meeting

2. Members:
 Capt. Andrew Armstrong [IHO]
 Cdre Lohit Brahma (IHO) until 2007
 Prof. Dr. Delf Egge [IHO]
 Mr. Ron Furness [ICA]
 Mr. Adam Greenland [FIG]
 Mr. Gordon Johnston [FIG]
 Prof. Dr. Razali Mahmud [FIG]
 Cdre K. N. Nair [IHO] from 2008
 Mr. David Neale [FIG] ⁴ 2008-2011
 Prof. Dr. Lysandros Tsoulos [ICA]
 Mrs. Tiina Tuurnala [FIG] until 2007

3. Secretary:
 Capt. Alberto Pedrassani Costa Neves [IHB] from 2011
 Capt. Federico Bermejo [IHB] 2007-2010

4. Meetings:

- i. 30th meeting 25 - 30 June 2007 (Hamburg, Germany)
- ii. 31st meeting 7 - 11 April 2008 (Sydney, Australia)
- iii. 32nd meeting 20 - 24 April 2009 (Genoa, Italy)
- iv. 33rd meeting 1 - 5 March 2010 (Port of Spain, Trinidad and Tobago)
- v. 34th meeting 2 - 6 May 2011 (New Orleans USA)

5. Agenda Items:

The main task of the FIG/IHO/ICA IBSC is to develop and maintain international Standards on Competence of Hydrographic Surveyors, S-5 and Nautical Cartographers, S-8. The intention of the IBSC in preparing these Standards is to provide guidance whereby individual surveyors and nautical cartographers may be trained and qualified in accordance with internationally accepted levels of competence. The Standards indicate the minimum degree of knowledge and experience considered necessary for hydrographic surveyors and nautical cartographers, and provide a set of programme outlines against which the IBSC may evaluate programmes submitted for recognition.

In the course of the years the IBSC has published a number of new editions and new versions of both Standards in order to keep up with the scientific and technological developments in the fields of Hydrography and Nautical Cartography.

The current status of S-5 is Eleventh Edition Version 11.0.1 – May 2011 and of S-8 Third Edition 2010 Version 1. Major changes to the standards adopted during the reporting period refer to the following:

- New Guidelines for submission of courses
- Establishment of procedures for internal assessment
- Reduction of period of submission of courses (from ten to six years)
- Establishment of funding scheme/cost recovery mechanism
- Individual recognition through recognition of national schemes

⁴ Mr. David Neale passed away in 2011

These changes are reflected into the current editions of both Standards and provide detailed guidance to submitting organizations.

The IBSC has awarded recognition to more than 40 courses worldwide. These courses must be continuously updated in accordance with IHO Publications S-5 and S-8. In order to maintain the high level of programmes recognized, the Board pays scheduled on-site visits to the organizations offering courses thus providing consultancy and guidance for necessary improvements where appropriate.

6. Work programme

New standards framework

According to the discussion at IBSC33 in 2010 and the decisions taken therein, the Board Members agreed to separate Cat A and Cat B competency requirements by developing two discrete parts in the standards. Work will start with the restructuring of S-5 and continue with that of S-8. This approach will clarify the situation, assist the submitting organizations to better focus on the essence/content of the Standards and result to the formulation of a much better profile of the students. A process was adopted for the development of draft new standards, comments and implementation, through the formulation of two workgroups to create a framework, outline and try to populate the new Standard in the interim period until the 2012 meeting.

New Standards when developed by the Board will be posted as a draft and feedback will be invited for a limited period prior to implementation.

Quite relevant to the above is: a) a modular learning experience over a limited time period to accumulate a full Cat A or Cat B curriculum and b) the increasing role that the private sector plays in educational activities. The IBSC also acknowledges that there are various ways of delivering a Cat A or Cat B programme i.e. e-learning. This will be carefully considered by the Board and specific provisions for modular/ e-learning programmes will be adopted and be part of the new standards framework.

Due to the additional work that has to be carried out at the future meetings concerning the restructuring of the Standards and the increasing number of programmes for evaluation/recognition, it was agreed that the duration of the 2012 meeting will be seven (7) working days and an extraordinary plenary or group meeting will be required for the next years in order to fulfill this task. It may be noted that there is interest from academia and industry for the IBSC to hold some open sessions to receive feedback and discuss the development of the S5 and S8 Standards. The Board decided to include a standing agenda item for future IBSC meetings - an open session with industry, academia, etc. - to listen and receive feedback on future requirements for development of the standards and submission process. This will be a progressive change in the way the Standards are developed and maintained and it will contribute considerably to their improvement and the transparency of the process per se.

For the implementation of the New Standards framework, which is a radical change to the philosophy and the content of the standards, extraordinary plenary or group IBSC meetings are necessary, which will be scheduled for the period 2013 - 2017. This will require extra funding to cover travel expenses of the members of the Board and these requirements have been included in the Task Identification Form for the preparation of the 2013-2017 IHO WP.

7. Proposals for adoption by the XVIIIth I.H. Conference:

The Conference is invited to note the report.

ELEMENT 3.4 CAPACITY BUILDING ASSESSMENT**REPORT BY THE IHB ON CAPACITY BUILDING ASSESSMENT****1. General Information.**

Capacity Building Assessment is one of the first phases in the overall procedure. It mainly consists of technical visits carried out at different levels. We can distinguish technical visits to raise awareness on the importance of developing national hydrographic capabilities and technical visits to work on particular subjects aiming at developing plans and programmes. The first one normally involves meetings with governmental authorities and high level national stakeholders while the second type generally involves technical personnel.

2. 2007- 2011 CB Assessment development and analysis.

During the period between the XVII and the XVIII IHO Conferences, the following assessment missions have been conducted either by expert teams from the relevant Regional Hydrographic Commissions or by the IHB.

YEAR	EXPERT TEAM	COUNTRY
2008	MBSHC	Albania, Romania, Malta
	SAIHC	Angola, Malawi
	IHB jointly with IOC under the IO COAST-MAP Join Project	Bangladesh, Comoros, Kenya, Madagascar, Maldives, Mauritius, Mozambique, Myanmar, Seychelles, Sri Lanka, Tanzania, Thailand.
	IHB	Bahrain, Uruguay, Brazil, Argentina, Suriname, Haiti
2009	SWPHC	Tonga
	MBSHC	Lebanon
	EAHC	Vietnam, Brunei
	IHB	Solomon Islands, Haiti
2010	MBSHC	Georgia
	EAHC	Vietnam
	MACHC	Guatemala, Honduras, Belize
	IHB jointly with IOC under the IO COAST-MAP Join Project	Comoros, Kenya
	IHB	El Salvador
2011	MACHC	Belize
	SAIHC	Malawi, Namibia
	SWPHC	Cook Islands, Kiribati
	EAtHC	Cameroon
	IHB / MACHC	Costa Rica

It can be concluded that the IHO has made emphasis in Africa, the South West Pacific and Central America and the Caribbean Sea. Also in Asia, the Mediterranean and the Indian Ocean. This coincides with the priorities also identified by our sister organizations such as IMO, IOC and WMO.

The IHB is working on the development of a system that shall help to monitor this effort and keep track on the conclusions and recommendations identified at each of the technical visits paid. This information will be key for the CBSC decision process.

3. Proposals for adoption by the XVIIIth I.H. Conference:

The Conference is invited to note the report.

ELEMENT 3.5 CAPACITY BUILDING PROVISION

REPORT BY THE IHB ON CAPACITY BUILDING PROVISION

1. General Information.

Capacity Building Provision constitutes the “action” phase of the IHO CB Strategy. It consists of the implementation of training opportunities according to the needs identified by the different RHCs. Based on the experience gathered, the IHB, together with the CBSC, is moving from the early absolute flexible approach for the delivery of training to a more structured system. The idea is to offer standardized syllabi for those courses that are most commonly required. The first course to adopt a standardized form was the MSI course (three days). Today we have also developed the basis for a Hydrographic Survey and Introduction to Chart Production and a Basic ENC and ENC Production, both courses with a duration of 10 days each.

The decision to standardize courses aims at making a better use of the resources. Nevertheless, we continue to consider needs that are of particular interest to each RHC.

2. 2007- 2011 CB Provision development and analysis.

During the period between the XVII and the XVIII IHO Conferences, the following seminars, courses and workshops have taken place.

YEAR	RHCs	Training	Venue	Countries	Trainees
2007	NIOHC and RSAHC	Workshop on Phase 1 Capacity	Jeddah, Saudi Arabia	Bahrain, Djibouti, Jordan, Oman, Pakistan, Qatar, Saudi Arabia, Sudan and Yemen.	23
	SEPHC,	Workshop on Fluvial Hydrographic Surveying	Iquitos, Peru	Colombia, Ecuador, Peru, Chile, Argentina, Brazil, Germany, Mozambique, Panama, Uruguay, USA, Venezuela.	35
	MACHC, SEPHC and SWAtHC	Workshop on Development of Standard Operational procedures for Multibeam Hydrographic Surveys	Cartagena, Colombia	Argentina, Brazil, Chile, Colombia, Ecuador, México, Panama, Peru, Uruguay, USA and Venezuela.	30
	MACHC	MSI Course	Kingston, Jamaica	Anguilla, Antigua & Barbuda, Barbados, BVI, Cayman Is., Colombia, Grenada, Guatemala, Montserrat, Panama, Jamaica, St. Kitts and Nevis, St. Vincent and The Grenadines, Trinidad and Tobago, Nicaragua.	23
	SAIHC	MSI Course	Maputo, Mozambique	Kenya, Madagascar, Malawi, Mauritius, Mozambique, Namibia, South Africa and Tanzania.	14
	EAHC, NIOHC	Ocean Mapping Group Multibeam Course	Cairns, Australia.	Sri Lanka, Rep. Of Korea, Philippines, Thailand.	4
2008	MACHC	IMO-IHO Workshop on Hydrography	Suriname	Antigua & Barbuda, Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, St. Kitts and Nevis, St. Lucia, St.	36

CONF.18/WP.3

				Vincent and The Grenadines, Suriname.	
	MACHC	Hydro Carto Basic Course	Margarita, Venezuela	Belize , Costa Rica, Guatemala , Haïti, Jamaica, Nicaragua , Venezuela.	10
	MBSHC	MSI Course	Cadiz, Spain	Malta, Tunisia, Algeria, Syria, Suriname, and Spain.	7
	MACHC	MBES On-the-job training	Brazil	Argentina, Brazil, Colombia, Cuba, Chile, Ecuador, Mexico, Suriname, Uruguay.	13
	SEPHC	Data Base Exchange Workshop	Cartagena, Colombia	Chile, Colombia, Ecuador, Peru.	8
	SWPHC	IMO/IHO Seminar on Raising Awareness of Hydrography	Suva, Fiji	Cook Islands, Fiji, Kiribati, Marshall Islands, Federal States of Micronesia, Nauru, Palau, Samoa, Solomon Islands, Tonga and Tuvalu.	18
	EAHC	Workshop on Quality Assurance of ENC Production	Pattaya, Thailand	Indonesia, Japan, Malaysia, Philippines, Rep of Korea, Singapore, Thailand.	13
	EAHC	Training course on Quality Assurance (QA) of Multibeam Surveying and Data Processing	Singapore	Indonesia, Japan, Malaysia, The Republic of Korea, The Philippines, Thailand, Singapore, Vietnam.	16
	NIOHC	Multibeam Workshop	Goa, India	Algeria, Estonia, Fiji, Kenya, Mauritius, Myanmar, Oman, Serbia, South Africa, Tanzania.	15
	SAIHC	Introduction to Hydrographic Surveying	Nairobi, Kenya	Kenya, Malawi, Madagascar, Mozambique, Namibia, Seychelles, Tanzania, Uganda.	10
	SWAtHC	Regional ECDIS/ENC Seminar	Niteroi, Brazil	Argentina, Australia, Brazil, Canada, Chile, Colombia, Costa Rica, Ecuador, Finland, France, Germany, Greece, Honduras, Italy, Japan, Rep. of Korea, Netherlands, Norway, Portugal, South Africa, Suriname, Sweden, United Kingdom, USA, Uruguay, Venezuela.	85
2009	SWPHC	Technical Workshop "Raising the importance of hydrography"	Port Moresby, Papua New Guinea	Australia, Fiji, France, New Zealand, Papua New Guinea, UK, USA, Cook Islands, Kiribati, Solomon Islands.	25
	SEPHC, SWAtHC MACHC	ENC Workshop	Niteroi, Brazil	Argentina, Brazil, Chile , Cuba, Ecuador, Peru, Uruguay.	17
	SEPHC, SWAtHC MACHC	Ocean Mapping Group Multibeam Course	Niteroi, Brazil	Argentina, Brazil, Chile, Ecuador, Peru, Suriname, Uruguay.	10
	SAIHC	Seminar for NHC Chairs (or equivalent)	La Reunion, France	Angola, Comoros, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, Tanzania, France, Norway, Portugal, USA, UK.	14
	EAtHC	MSI Course	Accra, Ghana	Benin, Gambia, Ghana, Guinea Bissau, Guinea, Côte d'Ivoire, Mauritania, Nigeria, Senegal and Togo.	17
	RSAHC	MSI Course	Muscat, Oman	Bangladesh, Iran, Oman, Pakistan, Seychelles, Sri Lanka and Thailand.	16
	EAHC	Workshop on Quality Assurance of ENC Production	Philippines	Indonesia, Japan, Malaysia, Republic of Korea, The Philippines, Thailand, Singapore, Vietnam.	15
	EAHC	Training course on Quality Assurance (QA) of Multibeam Surveying and Data Processing	Philippines	Indonesia, Japan, Malaysia, Republic of Korea, The Philippines, Thailand, Singapore, Vietnam.	15
2010	MACHC, SEPHC SWAtHC	Workshop on Port and Shallow Water Surveys.	Montevideo, Uruguay.	Argentina, Brazil, Chile, Colombia, El Salvador, Peru, USA and Uruguay.	12
	EAHC	Technical aspects of maritime boundaries, baselines and the extended continental shelf	Bangkok, Thailand	China, Indonesia, Japan, Malaysia, Philippines, Republic of Korea, Singapore, Thailand.	16
	EAHC	Workshop on Quality Assurance of ENC Production	Vietnam	TBC	TBC

CONF.18/WP.3

	Open Call	Module 1: Marine Cartography of the UKHO internationally accredited programme Cat B	Singapore	Papua New Guinea, South Africa, Iran, New Zealand, Sri Lanka, El Salvador, Fiji, Oman, Bangladesh, Solomon Islands, Singapore.	10
	Open Call	2nd Course in Hydrographic Data Processing and Marine Cartography, including specialism in Electronic Navigational Chart.	Taunton, UKHO	Uruguay, New Zealand, Latvia, Vietnam, Thailand, Ukraine.	6
	MACHC	IMO/IHO 2-week Regional Training Course on Basic ENC and ENC Production	Kingston, Jamaica	Trinidad & Tobago, Antigua, Dominica, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Nicaragua, St Vincent & the Grenadines, Suriname, Trinidad & Tobago.	15
	SAIHC	MSI Course	Walvis Bay, Namibia	Angola, Kenya, Malawi, Mozambique, Namibia.	16
	SWPHC	MSI Course (with the cooperation of IMO)	Sydney, Australia	Cook Islands, Fiji, French Polynesia, New Caledonia, Papua New Guinea, Samoa, Solomon Islands, Tonga, Vanuatu, Oman.	13
	SWPHC	2-weeks Regional Hydrographic Survey & Nautical Cartographic Course	Port Moresby, PNG	Cook Island, Federation State of Micronesia, Fiji, Palau, Papua New Guinea, Tonga and Solomon Islands.	11
2011	EAHC	Database design and management	Bangkok, Thailand	China, Indonesia, Japan, Malaysia, Philippines, Rep of Korea, Singapore, Thailand, Vietnam	28
	EAHC	Workshop on ENC Production and QA	Jakarta, Indonesia	China, Indonesia, Japan, Malaysia, Philippines, Rep of Korea, Singapore, Thailand, Vietnam	9
	Haiti	Hydrography and Nautical Cartography training	Carriès, Haiti	Haiti	18
	SAIHC and NIOHC	Ports and Shallow Water Surveys	South Africa	Bangladesh, Comoros, Kenya, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Sri Lanka, Thailand and Tanzania	12
	SEPHC, SWAtHC and MACHC	MSI Course	Niteroi, Brazil	Antigua & Barbuda, Argentina, Brazil, British Virgin Islands, Chile, Colombia, Ecuador, Grenada, Peru, Suriname and Uruguay.	14
	MACHC	Introduction to Hydrographic Surveying and Nautical Charting	Antigua & Barbuda	Antigua, Barbados, British Virgin Islands, Dominica, El Salvador, Grenada, St Kitts and Nevis, St Lucia and St Vincent and the Grenadines.	12
	Open Call	Module 1 Marine Cartography of the UKHO internationally accredited programme (Cat B).	Taunton, UKHO	Mozambique, Suriname, Paraguay, Slovenia, Bangladesh, Bahrain, Guyana, Mauritius, Cyprus	9
	EAtHC and SAIHC	IMO/IHO 2-weeks Regional Hydrographic Surveying and Nautical Charting	Accra, Ghana	Cameroon, Côte d'Ivoire, DR Congo, Gabon, The Gambia, Ghana, Guinea Bissau, Liberia, Nigeria, São Tomé & P., Sierra Leona, Togo.	16
	EAtHC and SAIHC	IMO/IHO 2-weeks Regional Training Course on Basic ENC and ENC Production	South Africa	Info to be received	Info to be received 10?
	Open Call	3rd Course in Hydrographic Data Processing and Marine Cartography, including specialism in Electronic Navigational Chart.	Taunton, UKHO	Bangladesh, Indonesia, Mexico, Oman, Pakistan and Philippines	6
	Open Call	Multibeam Sonar Training Course	Fremantle, Australia	Bangladesh, Brazil, Indonesia, Japan, Korea (Republic of), Mauritius, Nigeria, Oman, Philippines and Peru.	10

After examining the above table, we can conclude the following:

- a) Out of the 15 RHCs, 11 have been supported to implement their CB initiatives. 5 RHCs have benefitted from the 70% of the total support in terms of number of activities due to their efficient internal organization to manage CB matters. The message is clear, if a RHC does not submit any proposal to the CBSC, it cannot get support. Those more active RHCs have a better chance of being supported.
- b) Sharing a CB event with other RHCs, particularly the neighbouring ones, or those with the same language constitutes an efficient way to add value to the CB resources.
- c) The diversity of training demands has suggested that the CBSC and the IHB adopt a more systematic approach, standardizing as much as possible a set of pre-defined training opportunities, where syllabi, instructors, training aids and other elements can be prepared even in different languages, shared and made available for the implementation of such courses. This is an ongoing activity. This should not preclude special demands.
- d) The events mentioned above have been hosted by 20 IHO Member States and 6 Non IHO Member States (one Asian, two Caribbean and three African countries). This means that 25% of the IHO Membership is actively involved in facilitating the implementation of the CB WP. Some Member States, such as Brazil, has hosted as many as 5 events in the period. Host countries are a strong component of the CB process.
- e) Over 700 participants from about 60 IHO Member States and 60 non IHO Member States have attended the training opportunities. These figures confirm that the IHO is, without any doubt, strongly committed to contributing to the development of hydrographic capabilities in countries where such a capability does not exist. Out of the 60 non IHO Member States, over one-third have expressed their willingness to improve the relationship with IHO, to participate in the work of the RHCs and to get organized internally to establish or improve a national body to handle hydrographic issues. But still there is too much to do.
- f) The CBSC and the IHB are fully aware of the situation and are working closer to find ways to improve effectiveness and efficiency in the CB provision issue, being conscious that “persistence” is probably the only proper way forward to change the attitude of some countries that do not express any interest at all in IHO matters.

3. Proposals for adoption by the XVIIIth I.H. Conference:

The Conference is invited to note the report.

ELEMENT 3.6 COORDINATION OF GLOBAL SURVEYING AND CHARTING

REPORT OF WORLDWIDE ENC DATABASE WORKING GROUP (WEND-WG)

By the Chairman, Captain Jamie McMichael-Phillips (UK)

1. **Chairmen:** Capt Jamie McMICHAEL-PHILLIPS (UK) from May 2010
Capt Abri KAMPFER (South Africa) 2009 to 2010
- Vice-Chair:** Capt Carlos Augusto Medeiros De ALBUQUERQUE (Brazil) from 2010

2. Membership:

RHCs:

- Mr Juha KORHONEN (Finland) (BSHC);
- Mr NG Kwok-Chu (China) (EAHC)
- Capt Ayo OLUGBODE (Nigeria) (EAtHC);
- Ms Kathryn RIES; (USA) (MACHC);

Ing en Chef Yves GUILLAM (France) (MBSHC);
Mr Jens Peter HARTMANN (Denmark) (NHC);
Capt Vinay BADHWAR (India) (NIOHC)
Capt Jamie McMICHAEL-PHILLIPS (United Kingdom) (NSHC)
Cdr Thani AL MAHOKI (Oman) (RSAHC)
Capt Abri KAMPFER (South Africa) SAIHC
Capt Carlos Augusto MEDEIROS DE ALBUQUERQUE (Brazil) (SWAtHC)
Mr Mike PRINCE (Australia) (SWPHC)
Mr Sean HINDS (Canada) (USCHC)

Member States:

Dr Mathias JONAS (Germany)
Mr Satoshi SATO (Japan)
Mr Jae-Yon LEE (Republic of Korea)
Capt Evert FLIER (Norway)
Dr Parry OEI (Singapore)
Dr Paul CANHAM (UK)

RENCs:

Mr Kjell Magne OLSEN (PRIMAR)
Mr James HARPER (IC-ENC)

IHB:

Capt Robert WARD

Notes on Formation and Terms of Reference of WEND-WG

The First Meeting of the IHO Inter Regional Coordination Committee (IRCC) held in Monaco on 05 June 2009, approved the formation of the IRCC WEND Working Group as proposed by the WEND report, and continues many of the responsibilities and activities formerly undertaken by the WEND Committee and the WEND Task Group. Both these latter bodies were dissolved in 2009 upon the formation of the IRCC.

The former WEND TG was constituted as a small group in order to reduce overheads, and to speed up any decision-making processes required in the execution of investigation or the formulation of proposals for subsequent consideration by WEND Committee. This proved to be most successful. The IRCC WEND-WG Terms of Reference (ToRs) and Rules of Procedures (RoPs) have maintained a similarly limited membership to build on the success of the WEND TG. The WEND-WG membership comprises a representative from each RHC, a representative from each RENC (to reflect an emphasis on RENC-based services), two members of IRCC, the IHB, and invited expert contributors as required to address specific issues.

This report includes, where appropriate, agenda material and conclusions derived from the WEND Committee and the WEND TG activities since the IHC XVIIth IHC in May 2007.

3. Meetings:

13-14 October 2011 in Wollongong, Australia (WEND-WG Foundation Meeting)
2-5 September 2008 in Tokyo (WEND Committee)
30-31 August 2007 in Paris (WEND TG)

4. Agenda Items:

WEND-WG - Principle Objective: To monitor and advise IRCC on the development of adequate ENC coverage to meet the SOLAS V/19 carriage requirements for ECDIS.

The main subjects dealt with during the period were the following:

4.1 IHO ENC-related commitments to IMO

- (a). Support for mandatory carriage of ECDIS.
 - (b). WEND Committee / WEND TG achievements since XVIIth IHC.
 - (c). Current coverage status.
 - (d). Compliance with WEND Principles.
 - (e). Trademark proposals.
 - (f). Raising ENC / ECDIS awareness amongst IMO delegates.
- **Coverage - Gap / Overlap Issues:**
 - (a). Amplification of the processes to deal with gaps and overlaps.
 - **Quality, Consistency and Updating issues:**
 - (a). Handling of non-updated ENCs.
 - (b). Handling of ENCs with content issues.
 - (c). Promulgation of errors / issues.
 - (d). Monitoring of RHC schemes.
 - (e). Prioritisation of future ENC productions: assessment of Top 800 Ports, Main Shipping Routes traffic against ENC provision at all usage bands.
 - (f). Inconsistent use of SCAMIN and data encoding.
 - **Service Provision:**
 - (a). Integrated Services.
 - (b). Status of licensing necessary to facilitate integrated services.
 - (c). Non-RENC ENCs.
 - **ECDIS Related Issues:**
 - (a). Updates from HSCC.
 - **Review of WEND TG 2007 Resolutions**
 - **Capacity Building & Cooperation**
 - **RENC topics**
 - (a). RENC to RENC discussions.
 - (b). Harmonisation Overview & update.
 - (c). Consideration of WEND-WG/IRCC ownership of harmonization.
 - (d). Consideration of Royalty based approach to ENC distribution.
 - (e). RENC Membership.
 - (f). How to guarantee independent checks on data quality.
 - (g). Work Plan & Load Sharing Discussions.
 - (h). Review of WEND Principles / Implementation Guidance.

5. Conclusions:

- a. The main conclusions and recommendations from the WEND-WG meeting are:
 - i. A Proposal to IHC would be drafted to revise and update the text contained in the WEND Principles and the associated Guidelines to take account of the IMO mandatory carriage of ECDIS; this would include amplification of processes for dealing with gaps and overlaps. Implementation of a structured approach to tackling the issue of ENC gaps and overlaps is necessary. The priority at the moment, linked to the phased introduction of the mandatory carriage of ECDIS, should also

focus on meeting the requirements of the cruise sector and the tanker sector. The process will involve the RHCs. In the case of gaps, the proposal is that, as a last resort, the gap should be filled as an interim ENC by an HO with the support of IHO; the steps will be time bound to bring the process to a conclusion. For overlaps a risk based approach will be taken; the final stage is for IHO to support withdrawal of overlapping coverage. This would, of course, create a gap and so a mechanism for completing coverage is in place.

ii. The proposition, subject to IPCC and IRCC ratification, that the RENC co-operation will be taken forward by the WEND-WG which will subsume the role of the IPCC. A RENC Harmonisation Sub-Group was established, to be co-chaired by the Chairs of the IC-ENC Steering Committee and the PRIMAR Advisory Committee. Other members will be the operators and general managers of the two RENCs, plus the China delegate and a delegate from NOAA/OCS. This will take forward the topics identified as outstanding in the latest report to IPCC and other issues related to cooperation and harmonisation.

iii. The need to make RENC membership more attractive; noting the perception that part of the problem was a lack of transparency in the way the RENCs operated their business. It was agreed that, in order to improve transparency, the RENCs would publish, on line, appropriate documents concerning their governance and their operational models.

iv. The creation of a new WEND Task Force to take forward detailed policy work. France would chair and membership would be drawn from UK, Australia, Brazil and the IHB.

v. Good progress had been made at the inaugural WEND-WG meeting and it was agreed that another meeting would be scheduled either immediately preceding or following the 2012 HSSC meeting (circa November 2012).

b. Significant conclusions and achievements of the WEND Committee and WEND TG are as follows:

(a). Progress has been made in achieving better worldwide ENC coverage. Since the beginning of 2008, small scale ENC coverage has risen and is now approaching 100%. There has been a 28% increase in medium scale ENC coverage and a corresponding 34% increase in large scale ENC coverage over the same period. Five coastal states (and Antarctica) still have to produce five or more medium scale ENCs to match paper chart coverage. Seven coastal states have yet to produce large scale ENCs to match paper chart coverage. RHC chairs have been encouraged to address gaps within their region and a number of regions have been particularly successful in addressing resolution of gaps in this period.

Comparison of ENCs with corresponding paper charts for international voyages				
	May 2008	May 2009	May 2010	May 2011
Small scale ENCs (planning charts)	>90%	~100%	~100%	~100%
Medium scale ENCs (coastal charts)	60%	77%	84%	88%
Large scale ENCs (top 800 ports)	60%	84%	91%	94%

(b). At IRCC3, RHC chairs were requested to report on the implementation of each item of the WEND Principles and on the validity of coverage and overlap analysis. Responses were received from the majority of the 48 ENC producer nations, either individually, or collectively through the appropriate RHCs. Some 15 producer nations did not respond to the Circular Letter. Of the responses received all were in broad support of the WEND Principles

- (c). Since 2009, there has been a modest increase in RENC membership with 4 new members joining and a fifth nation seeking dual membership.

RENC Membership Status		
	Current Membership (Sept 11)	New Members since 2007 (IHC)
PRIMAR	12*#	1**
IC-ENC	26*	4***
Non Members	16	n/a
<p>* <i>Russia, Greece & Brazil have dual membership.</i> ** <i>Brazil</i> *** <i>Colombia, Ecuador, New Zealand, & Uruguay</i> # <i>PRIMAR also distributes ENCs from a number of hydrographic organisations that are not RENC members.</i></p>		

RENCs need to take a view on how they might increase membership to encompass more producer nations.

- (d). WEND-sponsored RENC-to-RENC discussions have been particularly active since the XVIIth IHC and significant progress has being made towards achieving closer cooperation and harmonising RENC policies in several important respects. Progress reports have been sent to the IHB and the chairs of both IC-ENC and PRIMAR.

6. Proposals for adoption by the XVIIIth I.H. Conference:

The Conference is invited:

- (a) to note the report;
- (b) to consider the following proposals:

PRO WENDWG-1 – Re-affirmation of the IHO's commitment to full ENC coverage

Re-affirmation of the IHO's commitment to full ENC coverage, subject to the needs of changing traffic patterns, and the availability of suitable source data and resources.

The IH Conference is invited to adopt the following decision :

The International Hydrographic Conference,

Recognizing that the Decisions 20 and 21 from the 17th International Hydrographic Conference committed to achieving 'adequate coverage', availability, consistency and quality of Electronic Navigational Charts (ENCs) by 2010 in support of a carriage requirement for ECDIS;

Recognizing that the 54th meeting of the Safety of Navigation sub-committee (NAV54) of the International Maritime Organization (IMO) agreed a proposal for the adoption of a carriage requirement for ECDIS given assurance from the International Hydrographic Organization (IHO) that sufficient coverage of ENCs would be met by the dates being considered. NAV54 agreed the definition of sufficiency as being "equivalent to the best available paper chart coverage of either a Hydrographic Office providing global coverage or the Hydrographic Office of the Coastal State";

Noting that at NAV54 IHO predicted that the coverage of ENC in 2010 would be 100% for small scales, 95-100% for medium scales and 95-100% for large scales (for the top 800 priority ports);

Considering that the IHO report to IMO NAV57 in June 2011 indicated that 100% of small scale ENC's, 88% of medium scale (coastal charts) ENC's and 94% of large scale ENC's (covering the top 800 priority ports) had been completed. That there are now only six States, and Antarctica, where five or more ENC's remain to be produced in order to match corresponding paper chart coverage at medium scale. For the world's top 800 ports (by total tonnage), only eight coastal States have yet to produce ENC's that match the coverage provided by paper charts of those same ports;

Noting that ENC's currently on issue cover over 90% of the top 1500 ports (by tonnage) worldwide (through which approximately 95% of international trade is conducted) but that the ENC coverage required for the full range of international voyages evolves over time and that cruise vessels have additional requirements (often not catered for by paper charts);

Considering the IHO as a consultative and technical body bound together by only 80 Member States representing less than 50% of the larger Coastal State community of the IMO;

Understanding that the IHO is highly respectful of the national rights of Coastal States and so has invested significant resources to urge States at the international level and at the regional level through the Regional Hydrographic Commissions (RHCs) to find internal, bilateral or multi-lateral arrangements to complete the ENC coverage in all waters and ports requested by NAV54 to support the carriage of ECDIS and will continue to do so, via the World-wide ENC Database (WEND) Principles and Implementation Guidelines (as amended);

Considering that the Inter-Regional Coordination Committee (IRCC) and the WEND Working Group (WEND-WG) recommend that RHCs continue to assess and address the outstanding areas for future ENC coverage, quality and service improvements, along with subsequent reporting mechanisms;

Recognizing that the quality and consistency of ENC's is now a greater challenge than coverage given that the standard source for a majority of ENC's has been paper nautical charts and that these often contain inefficiencies stemming from historic data and technological limitations. Whilst more large scale ENC's are progressively being produced from modern, high data density surveys based on the WGS84 datum there are still very large areas of the world where available hydrographic survey data is inadequate to fully meet navigational requirements. This is especially true for remote regions of the globe where surveys are either non-existent or of sparse reconnaissance nature where even paper charts need to be used with considerable caution by the mariner;

Recognizing that hydrographic survey technology and navigational technology is evolving at unprecedented rates, that the maritime shipping industry is continually embracing technical solutions intended to facilitate navigation at the margins of safety in response to global economic competition, and that these realities continue to challenge the capacity of the international hydrographic community to improve its services on several fronts simultaneously;

Noting the resources and time associated with obtaining adequate hydrographic survey coverage needed to meet all the requirements of modern navigation (especially of remote regions) is a challenge that requires new thinking, new technologies and new methodologies by Hydrographic Offices, navigation regulators and the maritime shipping industry;

Recognizing these challenges need to be undertaken in a collaborative and transparent fashion between the hydrographic community and the maritime community at large, so that priorities are understood and risks are shared and mitigated;

Considering the recommendations from the WEND-WG to improve management of ENC services, including more transparency in service and greater ease of access, through cooperation among ENC Producer Nations, End-User Service Providers, RHCs, Regional ENC Centres (RENCs), Original Equipment Manufacturers (OEMs) and the Mariner User community they serve;

Concludes that the Member States of the International Hydrographic Organization should commit to:

- continuing through best international collaborative efforts and technological innovation to complete the outstanding requirement established for adequate ENC coverage as outlined at IMO NAV54;
- working with IMO Member States to promote the need for improved hydrographic survey and nautical charting services as required by SOLAS Chap. V, Reg. 9 and to provide support through the respective IHO and IMO capacity building programs;
- encouraging bilateral and multilateral cooperation within and across RHCs to improve consistency and harmonization of ENC cells (including the removal of any overlapping data) and services;
- establishing a systematic methodology, through the IRCC and the WEND-WG and in conjunction with the RHCs and RENCs, for monitoring evolving ENC coverage requirements, agreeing production priorities and for supporting the provision of integrated ENC services;
- informing mariners, through such things as IMO Safety of Navigation circulars and other national and international navigational warning mechanisms, the areas of national waters where the use of electronic navigation systems is not possible due to the limited quality or absence of source hydrographic data reflected in the nautical charts.

PRO WENDWG-2 - Implementation of the WEND Principles

The WEND Principles require updating to take account of the IMO mandatory carriage of ECDIS. The guidelines to the WEND Principles should also be expanded to include a process that amplifies the details already contained within the Principles and Guidelines that acknowledge, as a last resort, that existing paper chart producers can fill the gaps in ENC coverage and a similar process that can identify areas of overlapping data that impacts on safety of navigation, and after notification to the Producer States and the observance of due process, inform mariners and IMO if the matter cannot/will not be resolved by those Producer States. These revised guidelines should be added to the existing WEND Principles. This process will involve the RHCs.

Recognising that “IHO Resolution 1/1997 as amended (former K 2.19), Principles of the Worldwide Electronic Navigational Chart Database (WEND), was revised last at the 9th WEND Committee meeting in April 2005 and the revision was approved by Member States in August 2005;

Recognising that the IMO Maritime Safety Committee, at its 82nd Session (MSC 82), adopted revisions to the High Speed Craft Codes, making the carriage of ECDIS compulsory for new build craft from 1 July 2008 and for existing craft from 1 July 2010; and at the 86th Session (MSC 86 in June 2009), this was extended to a wide range of vessels (including all vessels over 10,000GT) in a rolling programme commencing from July 2012 and running until July 2018;

Noting that the 1st WEND Working Group met in October 2010 and endorsed minor updates to the main text of Resolution 1/1997 as amended, the Principles of WEND, taking into account the IMO mandatory carriage of ECDIS; No changes were proposed to the Annex to 1/1997, the Principles of WEND.

Recognising that the Guidelines for the Implementation of the WEND Principles were endorsed at the 11th WEND Committee Meeting in September 2008;

Noting that the 1st WEND Working Group meeting in October 2011 endorsed both minor amendments to the Guidelines for the Implementation of the WEND Principles to take into account the IMO mandatory carriage of ECDIS; and the inclusion of an amplifying annex on processes for dealing with gaps and overlaps in ENC coverage.

Concludes that the Member States of the International Hydrographic Organization should approve:

- the minor updates to the main text of Resolution 1/1997 as amended, the WEND Principles, as per the attached draft text at Annex A;
- the amendments to the Guidelines for the Implementation of the WEND Principles as per the attached text at Annex B;
- the inclusion of an amplifying Annex to the Guidelines for the Implementation of the WEND Principles as per the attached text at Annex C.

ANNEX A

PRINCIPLES OF THE WORLDWIDE ELECTRONIC NAVIGATIONAL CHART DATABASE (WEND)	1/1997 as amended	11/2007	K 2.19
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As amended and endorsed by the 1st WEND-WG Meeting (Wollongong, Aus, 13-14 October 2011)

1. The purpose of WEND is to ensure a world-wide consistent level of high-quality, updated official ENC's through integrated services that support chart carriage requirements of SOLAS Chapter V, and the requirements of the IMO Performance Standards for ECDIS.

2. Service Provision

- a) Member States will strive to ensure that mariners, anywhere in the world, can obtain fully updated ENC's for all shipping routes and ports across the world.
- b) Member States will strive to ensure that their ENC data are available to users through integrated services⁵, each accessible to any ECDIS user (i.e., providing data in S-57 form), in addition to any national distribution or system-specific SENC delivery.
- c) Member States are encouraged to distribute their ENC's through a RENC⁶ in order to share in common experience and reduce expenditure, and to ensure the greatest possible standardization, consistency, reliability and availability of ENC's.
- d) Member States should strive for harmonization between RENC's in respect of data standards and service practices in order to ensure the provision of integrated ENC services to users.
- e) Methods to be adopted should ensure that data bear a stamp or seal of approval of the issuing HO.
- f) When an encryption mechanism is employed to protect data, a failure of contractual obligations by the user should not result in a complete termination of the service. This is to assure that the safety of the vessel is not compromised.
- g) Member States are to strive for the greatest possible user -friendliness of their ENC services and to facilitate integrated services to the mariner in order to maximise the use of ENC's.

3. Rights and Responsibilities

- a) SOLAS Chapter V, Regulation 9, requires Contracting Governments to ensure that hydrographic data are available in a suitable manner in order to satisfy the needs of safe navigation. The introduction from 2012 of an IMO mandatory carriage requirement for ECDIS imposes a requirement on Contracting Governments to ensure that such data are available in a form suitable for use in ECDIS.
- b) It is expected that Member States will have mature arrangements in place for the issue of ENC's and their subsequent updating for waters of national jurisdiction in order to support the IMO requirement for the mandatory carriage of ECDIS.

⁵ *Integrated services are a variety of end-user services where each service is selling all its ENC data, regardless of source, to the end user within a single service proposition embracing format, data protection scheme and updating mechanism, packaged in a single exchange set.*

⁶ *RENC's are organisational entities where IHO members have established co-operation amongst each other to guarantee a world-wide consistent level of high quality data, and for bringing about co-ordinated services with official ENC's and updates to them.*

- c) By the dates established by IMO⁷, Member States will strive to either:
- a. Provide the necessary ENC coverage, or
 - b. Agree with other States to produce the necessary ENC coverage on their behalf.

IHO will address overall coverage on a regional basis through Regional Hydrographic Commissions. Guidelines on the implementation of the WEND Principles are published separately. These should be employed to facilitate the provision of appropriate ENC coverage within a suitable timeframe.

- d) The INT chart system is a useful basis for initial area selection for producing ENCs.
- e) Member States are encouraged to work together on data capture and data management.
- f) Responsibilities for providing digital data outside areas of national jurisdictions must be established (see guidance in Annex).
- g) Technically and economically effective solutions for updating are to be established conforming to the relevant IHO standards. The updating of ENCs should be at least as frequent as that provided by the nation for correction of paper charting.
- h) The Member State responsible for originating the data is also responsible for its validation in terms of content, conformance to standards and consistency across cell boundaries.
- i) A Member State responsible for any subsequent integration of a country's data into a wider service is responsible for validating the results of that integration.
- j) National HOs providing source data are responsible for advising the issuing HO of update information in a timely manner.
- k) Member States should work together so that the IHO Data Protection Scheme (S-63) is used for ENC distribution to end users, to ensure data integrity, to safeguard national copyright in ENC data, to protect the mariner from falsified products, and to ensure traceability.
- l) In producing ENCs, Member States are to take due account of the rights of the owners of source data and if paper chart coverage has been published by another Member State, the rights of that State.
- m) Member States should recognize their potential exposure to legal liability for ENCs.

⁷ The IMO Sub-Committee on Safety of Navigation, at its 51st Session (NAV 51):

- Agreed to recommend to the IMO Maritime Safety Committee the mandatory carriage requirement of ECDIS for High Speed Craft (HSC) by 1 July 2008.
- Did not decide on a mandatory carriage requirement for other types of ship; this will be considered in conjunction with a Formal Safety Assessment (FSA) to be conducted into the use of ECDIS in ships other than HSC and large passenger ships

Maritime Safety Committee, at its 82nd Session (MSC 82), adopted revisions to the High Speed Craft Codes, making the carriage of ECDIS compulsory for new build craft from 1 July 2008 and for existing craft from 1 July 2010. At the 86th Session (MSC 86 in June 2009), this was extended to a wide range of vessels (including all vessels over 10,000GT) in a rolling programme commencing from July 2012 and running until July 2018.

4. Standards and Quality Management

- a) A Quality Management System should be considered to assure high quality of ENC services. When implemented, this should be certified by a relevant body as conforming to a suitable recognised standard; typically this will be ISO 9001:2008 (as amended).
- b) There must be conformance with all relevant IHO and IMO standards.

5. Assistance and Training

- a) Member States' HOs are strongly recommended to provide, upon request, training and advice to HOs that require it to develop their own national ENC provision.

Annex to 1/1997 as amended (K2.19)

Guidance for the Establishment of ENC Production Boundaries

1. ENC duplication should be avoided. A single ENC producing country should exist in any given area.
2. A country is normally the ENC producing country for waters within its national jurisdiction.
3. Responsibility for the production of ENC can be delegated in whole or in part by a country to another country, which then becomes the producing country in the considered area.
4. When the limits of waters of national jurisdiction between two neighbouring countries are not established, or it is more convenient to establish boundaries other than established national boundaries, producing countries are to define the boundaries for ENC production within a technical arrangement. These limits would be for cartographic convenience only and shall not be construed as having any significance or status regarding political or other jurisdictional boundaries.
5. In international waters, the INT chart producer nation shall be assumed to be the producer of the corresponding ENC. Where the offshore limits of waters under national jurisdiction have not yet been established, clause '4' should apply.
6. In areas where the paper INT charts overlap, neighbouring producer nations should agree a common limit of ENC production in the overlapping areas. Cartographic boundaries should be as simple as possible; for example: a succession of straight segments and turning points corresponding to such things as meridians, parallels, or chart limits. Where different producer nations are responsible for INT coverage of the same area at different scales, those nations should agree on a suitable set of boundaries so as to provide the user with the most coherent service possible.
7. In areas of national jurisdiction for which there is no recognized ENC producer nation, the Regional Hydrographic Commission (or similar body) should determine the ENC producer nation. ENCs produced under such arrangements should be offered for transfer to the Coastal State in the event that the Coastal State subsequently develops the capacity to maintain the ENCs. Such transfer should respect the moral rights of the Coastal State and the commercial rights of the producer nation.

8. When the production limits are the official limits for national jurisdiction waters, commercial rights shall belong to the ENC producing country.
9. When the production limits are cartographic boundaries as opposed to national boundaries, the commercial rights shall normally belong to the ENC producing country but may possibly be encumbered by the payment of royalties to the relevant country through a technical arrangement (see clause 4).

ANNEX B

GUIDELINES FOR THE IMPLEMENTATION OF THE WEND PRINCIPLES

As endorsed by the 11th WEND Committee Meeting (Tokyo, 2-5 September 2008)

With minor amendments as endorsed by the 1st WEND WG Meeting

(Wollongong 13-14 October 2011)

The International Hydrographic Organization (IHO) is encouraging the transition from paper charts to electronic navigation through its support of a carriage requirement for ECDIS. It follows that the IHO should ensure that mariners are well served by adequate ENC services.

Noting that there are significant improvements required related to coverage, consistency, quality, updating and distribution of ENCs for many parts of the world and that this needs urgent attention, the WEND committee invites IHO Member States to apply the following guidelines for the implementation of the WEND principles (IHO Resolution 1/1997 as amended).

1. Responsibilities of Coastal States

1.1. A mandatory carriage requirement for ECDIS means a consequential obligation on Coastal States to ensure the provision of ENCs.

1.2. If the coastal State is the issuing authority (in terms of SOLAS V 2.2) then responsibility for the ENCs should lie with it regardless of whether the production and maintenance is undertaken with the assistance of commercial contractors or another Member State.

1.3. Where agreement is given to another Member State to produce and issue ENCs on behalf of a Coastal State the producing / issuing Member State should carry the responsibility for the ENC.

1.4. States providing source data to another State for the compilation of ENCs should advise that producer State of update information in a timely manner.

1.5. Member States should take into consideration the complexity and resource requirements of the ENC production and maintenance task in relation to their own capabilities and options when deciding how to best ensure the provision of ENCs for their waters.

1.6. Subject to appropriate agreement, it is acceptable for a Member State or a group of Member States to produce ENCs as an interim measure to fill gaps in existing coastal States' coverage to promote contiguous coverage. Such ENCs should be withdrawn when adequate coverage is made available by the coastal State. Further guidance on dealing with gaps is offered at the Annex to these guidelines.

1.7. The S-57 standard requires that there is no overlap of ENC data within usage bands. ECDIS systems will operate unpredictably in areas where overlapping ENC data is present; for this reason overlapping ENC data is not acceptable in end-user services. Where overlapping coverage exists the producing States should recognize their responsibility and take the necessary steps to resolve the situation. In situations

where overlapping data cannot be resolved through negotiation, the ENC producer(s) can anticipate that an end user service provider may need to take action itself to eliminate the overlap or discontinue services until the issue is satisfactorily addressed. Any such action to eliminate overlap should be communicated in advance to the affected ENC producer(s) and be based on guidelines that emphasize navigation safety, such as the following:

1. Scale of the data compiled in the ENC,
2. Currency of data in the ENC - i.e. most recent surveys, shoalest soundings, wrecks, rocks, and obstructions,
3. Avoidance of dividing navigationally significant features between producers. For example, Traffic Separation Schemes should be handled by one producer or the other.

Further guidance on dealing with overlapping data is offered at the Annex to these guidelines.

1.8. Exceptionally, a Member State may create additional ENCs to facilitate unified coverage where such production is undertaken specifically to address issues inhibiting provision of ENC coverage for the safety of navigation in accordance with the long term aims of the WEND Principles. A Member State undertaking such production should have very valid reasons for its actions and, beforehand, should have made reasonable efforts to negotiate with and come to some agreement with the State that has jurisdiction over the area in question. RHCs should place a high priority on filling ENC gaps.

1.9. In order to ensure uniform quality and consistency of the WEND, Member States should cooperate in accordance with clause 1.3 of the WEND Principles.

1.10. To ensure that the WEND database is maintained to the highest quality standard Member States that identify an error or any other deficiency in an issued ENC, or that receive information indicating such a deficiency, must bring this to the attention of the ENC producer so that the problem can be resolved at the earliest opportunity. Member States should act to ensure that appropriate actions are taken so that the safety of navigation is not compromised.

2. Reference Standards and Implementation

2.1. Harmonization means the uniform implementation of S-57 and other applicable standards, according to common IHO implementation rules as described in S-58, S-65 and the S-57 Encoding Bulletins.

2.2. Member States not wishing to join a RENC should make appropriate arrangements to ensure that their ENCs meet WEND requirements for consistency and quality and are widely distributed.

3. Capacity Building and Cooperation

3.1. Assistance to coastal States may cover aspects such as development of an ENC production capability, ENC quality and the role of RENCs in ENC validation and distribution.

3.2. It is essential that coastal States have established cartographic capability and infrastructure prior to undertaking ENC production and maintenance tasks themselves so as to ensure that the ENCs within the WEND database meet the high quality standards necessary to fulfil SOLAS requirements.

3.3. IHO Member States should consider ENC related projects as high priority capacity building initiatives.

4. Integrated services

4.1. Member States and RENCs should cooperate to ensure that ENC's are harmonised to the same quality standards thereby facilitating integrated services.

4.2. Member States only need to consider the use of S-63 if they intend to deliver a service to end users. Data Servers (i.e. service providers) and equipment manufacturers are responsible for implementing S-63 and form part of the 'S-63 trusted circle' (i.e. are entrusted to protect the ENC's and the encryption process).

ANNEX C

Annex to Guidelines for the Implementation of the WEND Principles

Further Guidance on the procedure for resolving ENC issues

The intent of these Guidelines is to facilitate the provision of ENC coverage by the IHO community to support the use of ECDIS. The IHO commitment to IMO is to provide ENC coverage of appropriate quality and updatedness that is the equivalent to that available in an international paper chart series or in national paper chart series and should be employed to achieve this aim. This Annex is intended to outline the procedures to be employed to resolve issues such as gaps and overlaps where these undermine the IHO commitment to IMO, the WEND Principles and there is otherwise no likely or timely alternatives.

NB The Guidelines (including this Annex) are NOT intended to be used to improve on existing chart coverage to meet the extended requirements of some sections of the shipping industry (e.g. cruise companies). In many cases these extended requirements cannot be met due to the inadequacy of survey data which may also prevent the conversion of existing paper charts into ENC's. In these cases the provision of ENC's by the responsible national HO will have to await new survey work.

A. Dealing with Gaps in ENC coverage

Where gaps in Coastal States' ENC coverage remain then RHCs will need to take action and a Member State or a group of Member States will need to provide the required ENC's as an interim measure. The following procedures should be undertaken in priority order until there is satisfactory resolution, agreed by the RHC, to close the gaps where it is feasible to make quality ENC's from existing paper chart coverage:

- a. Each RHC shall identify gaps in ENC coverage within their area of responsibility and desired timeframe for resolution, noting initial targets for coverage of shipping routes and priority ports, as well as subsequent coverage requirements.
- b. The RHC shall liaise with the relevant Coastal State to determine whether the State has the capacity to meet the required timeframe as well as quality and maintenance requirements. If these requirements can be met the Coastal State shall then fill the identified gap in ENC coverage.
- c. In the event the Coastal State cannot meet these requirements, or cannot meet the timeframe, the RHC shall report these concerns to the WEND Working Group for further consideration and reporting by the IHB.
- d. If the identified gap is covered by an existing paper chart produced under a Bilateral Arrangement between the Coastal State and an ENC producer nation, the producer nation shall be invited by the RHC to produce and maintain interim ENC coverage under its own producer

code until such time as it may be possible to hand the ENC and its maintenance back to the Coastal State. If there is more than one producer nation then the RHC will decide which one of them will release the ENCs.

- e. If the identified gap is covered by an existing paper chart produced under an informal arrangement by one or more third party producer nations, the RHC shall determine the most appropriate producer nation. The selected producer nation shall then be invited by the RHC to produce and maintain interim ENC coverage under its own producer code until such time as it may be possible to hand the ENC and its maintenance back to the Coastal State.
- f. If a Bilateral Arrangement is subsequently created between the Coastal State and a producer nation, or the Coastal State establishes the capacity to adopt and maintain the interim ENC under their own producer code, this arrangement shall supersede those already in place with the interim ENC handed back to the Coastal State or the nominated producer nation.

B. Dealing with Overlaps in ENC coverage

Where there are overlaps in Coastal States' ENC coverage then RHCs will need to take action to ensure that safety of navigation is not compromised. The following procedures should be undertaken:

- a. RHCs should create and maintain, through periodic audit, an inventory of (or some means to identify and note) areas of overlapping ENC and highlight those areas where there are navigationally significant differences in the overlaps
- b. RHCs should take a proactive approach to resolving overlap issues within their regions. They should produce a risk evaluation report for areas of overlap where navigationally significant differences exist and submit this to the IRCC Chair and the IHB. Appropriate action should then be initiated to inform IMO; the RHC report should highlight:
 - 1. the desired actions to be taken by the Governments of the involved producer States and the risks associated with inaction,
 - 2. the action that may be, or has been, taken, in the interests of maritime safety and protection of the marine environment, by an End User Service Provider (EUSP) to eliminate the overlap (including the withdrawal of ENCs) pending the satisfactory resolution of matters by the coastal States concerned.
- c. Where urgent action is required to alert mariners to navigationally significant issues then RHCs should initiate promulgation of appropriate warnings directly with the regional NAVAREA coordinator keeping the IRCC Chair and IHB informed.
- d. RHCs should maintain records of instances where independent action has been taken by an End User Service Provider to eliminate an overlap. RHCs should request an explanation from EUSPs where such action has been taken if this has not been provided. This is particularly relevant for areas where coverage is not distributed via a RENC.

ELEMENT 3.7 MARITIME SAFETY INFORMATION**REPORT BY THE WORLD WIDE NAVIGATION WARNING SYSTEM SUB-COMMITTEE (WWNWSSC)**

The WWNWS was formed on 1 January 2009 as a result of Decisions 8 and 9 of the XVIIth IHC that brought into force a restructuring of the committees of the Organization. The task of the WWNWS is to monitor and guide the International Hydrographic Organization (IHO) / International Maritime Organization (IMO) World-Wide Navigational Warning Service (WWNWS) which includes NAVAREA, Sub-Area and coastal warnings. Prior to the existence of the WWNWS, the Commission on the Promulgation of Radio Navigational Warnings (CPRNW) performed the same function. The CPRNW was disbanded upon the formation of the WWNWS.

1.	Chair:	Mr. P. DOHERTY (USA)	2007 - 2012
	Vice-Chair:	Vacant	2007 - 2009
		Captain (R) F. Lacroze (France)	2009 - 2011
		Captain (R) Alain Rouault (France)	2011 - 2012
	Secretary:	Mr. S. SHIPMAN (IHB)	2007 - 2012
2.	Participants	(..) Denotes number of meetings attended	
	IHO Member States:	Argentina (3), Australia (4), Brazil (5), Canada (5), Chile (2), China (1), Croatia (1), Ecuador (0), Egypt (0), France (5), Germany (0), Greece (3), India (5), IR of Iran (1), Italy (1), Japan (2), Monaco (0), New Zealand (1), Norway (5), Oman (2), Pakistan (2), Peru (2), Russian Federation (0), South Africa (2), Spain (4), Sweden (4), Turkey (4), UK (5), USA (5),	
	Expert Contributors:	IMO (2), IMSO (3), WMO (5), Inmarsat (4)	

3. Meetings

Since the XVIIth Conference five meetings of CPRNW / WWNWS have taken place, as follows:

CPRNW9	IHB, Monaco	11 – 14 September 2007
CPRNW10	Niteroi, Brazil	25 – 29 August 2008
WWNWS1	IHB, Monaco	18 – 21 August 2009
WWNWS2	Sydney, Australia	9 – 13 August 2010
WWNWS3	IHB, Monaco	13 – 16 September 2011

Additionally the WWNWS Document Review WG met at the IMO in London during the week following the IMO Sub-Committee on Communications, and Search and Rescue (COMSAR) meeting:

DocRev5	26 February – 02 March 2007
DocRev6	14 – 18 April 2008
DocRev7	26 – 30 January 2009
DocRev8	16 – 19 March 2010
DocRev9	15 – 18 March 2011

4. Summary of Work Undertaken

WWNWS Document Review

4.1 In the period since the XVIIth IHC CPRNW / WWNWS has completed the revision of all WWNWS documentation. Following approval by IHO Member States this documentation was submitted to, and subsequently adopted by, the IMO as summarized below:

- Resolution A.705(17), as amended, Promulgation of Maritime Safety Information - Review completed in 2007, approved by COMSAR 12 in 2008, adopted by MSC85 in 2008 and issued as MSC.1/Circ.1287. Entered into force 1 January 2010.
- Resolution A.706(17), as amended, World-Wide Navigational Warning Service - Review completed in 2007, approved by COMSAR 12 in 2008, adopted by MSC85 in 2008 and issued as MSC.1/Circ.1288. Entered into force 1 January 2010.
- Joint IMO/IHO/WMO Manual on Maritime Safety Information - Review completed in 2008, approved by COMSAR 13 in 2009, adopted by MSC86 in 2009 and issued as MSC.1/Circ.1310. Enters into force 1 January 2011. A single printed publication containing the English / French and Spanish texts was published by IMO in late 2010.
- IHO Publication S-53 Manual on Maritime Safety Information - Adopted by IHO Member States by IHB Circular Letters 70 and 84 /2008. This publication is maintained in parallel with the Joint IMO/IHO/WMO Manual on Maritime Safety Information.
- IMO International SafetyNET Manual - Review completed in 2009, approved by COMSAR 14 in 2010, adopted by MSC87 in 2010 and issued as MSC.1/Circ.1364. Enters into force 1 January 2012.
- IMO NAVTEX Manual - Review completed in 2010, approved by COMSAR 15 in March 2011, adopted by MSC 89 in May 2011 and issued as MSC.1/Circ.1403. (Only in English at time of preparing this report, French and Spanish to come). Enters into force on 1 January 2013.
- IMO Resolution A.664(16), Performance Standards for Enhanced Group Call Equipment (EGC) - Review completed in 2009, approved by COMSAR 14 in 2010, adopted by MSC87 in 2010 as resolution MSC.306(87). Note: MSC.306(87) applies to equipment fitted after 1 July 2012, A.664(16) applies to equipment fitted before 1 July 2012.
- IMO Guideline on operational procedures for the broadcast of maritime safety information concerning acts of piracy and counter-piracy operations - Approved by COMSAR 14 in 2010, adopted by MSC87 in 2010 as resolution MSC.305(87).
- COMSAR Circ.36, Broadcast of warnings for tsunamis and other natural disasters - Approved by COMSAR 9 in 2005 and endorsed by MSC 80 in 2005. This Circular was reviewed at WWNWS3 and a recommendation submitted to COMSAR 16 recommending its deletion following the entry into force of the documents listed above.

4.2 The WWNWS also provided assistance to IMO and IMSO in the revision of IMO Assembly resolution A.888(21) - *Criteria for the provision of Mobile-Satellite Communication Systems in the GMDSS*. A new resolution A.1001(25) with the same title was adopted by the IMO Assembly on 29 November 2007.

Expansion of the WNWNS into Arctic Waters

4.3 The IMO decided in 2006 to consider the expansion of the WNWNS into Arctic Waters. This work was brought to completion on 1 June 2011 when five new Arctic NAVAREAs and METAREAs came into full operational capability. Whilst this was an IMO task, the IMO Correspondence Group established in the years 2007 – 2010 to progress the work was led by the Chairman of the IHO WNWNS Sub-Committee strongly supported by the membership of the WNWNS and the WMO.

Capacity Building – MSI Training Course

4.4 The WNWNS has developed a 1-week training course on Maritime Safety Information (MSI) for the Capacity Building Sub-Committee and has delivered this on 8 occasions as follows:

- 2007: Jamaica, Mozambique; 2008: Spain; 2009: Ghana, Oman; 2010: Namibia, Australia; and 2011: Brazil. In 2012 a course is planned for the SWPHC.
- Over 60 countries and approximately 125 students have participated in this course to date.

4.5 Training documentation for this course has been developed in English, French and Spanish.

4.6 Lecturers for the above courses were provided by France, UK and USA.

5. Proposals for adoption by the XVIIIth I.H. Conference:

The Conference is invited to note the report.

ELEMENT 3.8 OCEAN MAPPING PROGRAMME**REPORT BY THE GEBCO GUIDING COMMITTEE (GGC)**

GEBCO is a joint project under the International Hydrographic Organization (IHO) and the Intergovernmental Oceanographic Commission (IOC). Following Decisions 8 and 9 of the XVIIth IHC which restructured the committees of the Organization, GEBCO was placed under the Inter-Regional Co-ordination Committee (IRCC) for reporting purposes within IHO. GEBCO also reports to the Executive Council of IOC. The task of the GEBCO Guiding Committee is to guide the GEBCO Project under the governance of IHO and IOC.

1.	Chair:	Mr. D. MONAHAN (Canada) (IHO) Dr. R. FALCONER (New Zealand) (IOC)	2007 - 2009 2009 - 2012
	Vice-Chair:	Dr. R. FALCONER (New Zealand) (IOC) Dr. C. FOX (USA) (IHO)	2007 - 2009 2009 - 2012
	Permanent Secretary:	Dr. R. WHITMARSH (UK) Mr. D. CLARK (USA)	2007 – 2010 2010 - 2012
	Membership IHO	Ing. gén. Etienne CAILLIAU (France)	From 2003
		Dr. Christopher FOX (USA)	From 2005
		Cdr. Paolo LUSIANI (Italy)	From 2005
		Mr. Dave MONAHAN (Canada) Ms. Hyo Hyn SUNG (Korea) From 2009	Until 2009
		Dr. Kunio YASHIMA (Japan)	From 2007

CONF.18/WP.3

	Membership IOC	Dr. Robin FALCONER (New Zealand)	From 2005
		Lic. José Luis FRIAS SALAZAR (Mexico)	Until 2010
		Dr. Martin JAKOBSSON (Sweden)	From 2006
		Dr. Hans-Werner SCHENKE (Germany)	From 2003
		Dr. Nataliya TURKO (Russian Federation)	From 2006

	GGC Participants	(..) Denotes number of meetings attended	
	IHO Members:	Canada - until 2009 (3), France (5), Italy (3), Japan (5), Rep of Korea- from 2009 (3), USA (5)	
	IOC Members:	Germany (5), Mexico (2), New Zealand (5), Russian Federation (5), Sweden (5)	

The Chairs of the GEBCO Sub-committees (SCUFN, TSCOM, ISCRUM*) and the Chair of the IHO DCDB are formal members of the GGC. The IHB, the IOC Secretariat and other active members of the GEBCO Community are invited to attend GGC meetings.

(*) Interim Sub-Committee on Regional Undersea Mapping, establishment under approval. (see § 4.7).

SUB-COMMITTEE ON UNDERSEA FEATURE NAMES (SCUFN)

SCUFN Participants:

SCUFN Members		
Dr. Hans Werner SCHENKE (Chair)	Germany	IOC
Ms. Lisa A. TAYLOR (Vice Chair)	USA	IHO
Mr. Norman CHERKIS	USA	IOC
Dr. Yasuhiko OHARA	Japan	IHO
Dr. Hyun-Chul HAN	Rep. of Korea	IOC
Cdr. Ana Angelica ALBERONI	Brazil	IHO
Dr. Vaughan STAGPOOLE	New Zealand	IOC
Lic. Walter REYNOSO-PERALTA	Argentina	IHO
Dr. Ksenia DOBROLYUBOVA	Russia Federation	IOC
Cdr. Muhammad BASHIR	Pakistan	IHO
Prof. LIN Shaohua	China	IOC
Secretary		
Ing En Chef Michel HUET	IHB	

IHO Members:	Argentina (3), Brazil – from 2009 (3), India (3), Japan (5), Pakistan – from 2009 (2), USA (5)
IOC Members:	China – from 2011 (1), Germany (5), Rep. of Korea (5), Mexico – until 2010 (2), New Zealand – from 2009 (3), Russian Federation (5), USA (4)

Observers from other countries are also welcomed at SCUFN meetings.

TECHNICAL SUB-COMMITTEE ON OCEAN MAPPING**TSCOM Members:**

Dr. Walter SMITH (Chair)	USA	IHO
Dr. Bruce GOLEBY (Vice-Chair)	Australia	IOC
Mr. Norm CHERKIS	USA	IOC
Dr. John HALL	Israel	IOC
Dr. Hans-Werner SCHENKE	Germany	IOC
Mr. Shin TANI	Japan	IHO
Ms. Paola TRAVAGLINI	Canada	IHO

TSCOM Participants:

IHO Members: Canada - (4), France (5), Italy (3), Japan (5)

IOC Members: Germany (5), Israel (3), New Zealand (4), USA (5)

In addition to the formal IHO / IOC membership many other scientific advisors and other interested parties participate in TSCOM.

The interim Sub-Committee on Regional Undersea Mapping iSCRUM has met in conjunction with TSCOM since TSCOM XXV in 2009. Since 2006 a "GEBCO Bathymetric Science Day" featuring presentations and posters on Ocean Mapping topics is also held in conjunction with the TSCOM and iSCRUM Meetings, the sixth such Science Day was held in 2011.

3. Meetings

Since the XVIIth Conference, the GGC has met on five occasions, as follows:

GGC XXIV	Paris, France	7 – 8 November 2007
GGC XXV	Tokyo, Japan	29 – 30 May 2008
GGC XXVI	Brest, France	1 – 2 October 2009
GGC XXVII	Lima, Peru	18 September 2010
GGC XXVIII	San Diego, USA	7 October 2011

The Sub-Committee on Undersea Feature Names (SCUFN) met on the following occasions:

SCUFN XX	IHB, Monaco	9 - 13 July 2007
SCUFN XXI	Jeju Island, Rep of Korea	19 – 22 May 2008
SCUFN XXII	Brest, France	22 – 26 September 2009
SCUFN XXIII	Lima, Peru	11 – 14 September 2010
SCUFN XXIV	Beijing, China	12 – 16 September 2011

The Technical Sub-Committee on Ocean Mapping met on the following occasions:

TSCOM XXIII	New York, USA	11 – 13 September 2007
TSCOM XX XXIV	Tokyo, Japan	26 – 27 May 2008
TSCOM XXV	Brest, France	28 – 30 September 2009
TSCOM XXVI	Lima, Peru	13 – 17 September 2010
TSCOM XXVII	San Diego, USA	3 – 5 October 2011

4. Summary of Work Undertaken

4.1 Data Sets and Products

Recognizing the importance of the availability of gridded bathymetric data sets for the international scientific community, GEBCO has continued to develop and make available a number of data sets and products.

GEBCO released its first global bathymetric grid, the GEBCO One Minute Grid in 2003. This data set is at one arc-minute interval and is largely based on the bathymetric contours contained within the GEBCO Digital Atlas (GDA). An updated version of the grid was published in 2008.

In January 2009, GEBCO released the GEBCO_08 Grid. This global data set is at 30 arc-second intervals and was generated by combining quality-controlled ship depth soundings with interpolation between sounding points guided by satellite-derived gravity data. This data has been continually updated and new versions were made available in November 2009 and September 2010. The next release is planned for publication in the Spring of 2012

GEBCO's grids are available to download from the internet and are included as part of the GDA. Most recently, the GEBCO_08 Grid was made available as a Web Map Service (WMS), a means of accessing geo-referenced map images over the internet.

GEBCO's data sets and products are accessed by a wide range of users from all over the world; from scientists, students and the general public to commercial organisations. The data are used in diverse applications such as tsunami and ocean circulation modelling systems; planning submarine cable routes; developing maps for reports and atlases and terrain models for use in 3D visualisation software and graphics for educational TV programmes. They also provide map imagery in a number of commercial and open source Geographic Information System (GIS) and mapping packages. In 2009, Google Earth adopted the GEBCO_08 Grid as the global representation of seafloor relief in its Google Ocean product.

GEBCO is continually working to improve its gridded data sets and welcomes contributions of data from many sources. Olex, a Norwegian company that produces mapping and visualisation software largely based on data collected from fishing vessels, has made available to GEBCO a sub-sample of their global marine soundings database. This data set is largely focussed in shallower water areas, mainly in the North Atlantic Ocean region. Part of the data set, for regions around the UK, has already been included in the GEBCO_08 Grid.

4.2 Electronic Nautical Charts

The bathymetric data contained in the world wide coverage of Electronic Nautical Charts (ENCs), (collectively produced by IHO Member States), has proven to be a valuable source data, and is being used to significantly improve GEBCO's bathymetric grids in shallow water regions. Many Hydrographic Offices and hydrographic organizations have already contributed substantial amounts of shallow water bathymetry data for their coastal zones, generally from ENCs in small scale "General" and "Coastal" navigational purpose bands. These have resulted in significant improvements in the bathymetry for some shallow water areas. They have also enabled GEBCO to produce better generalized bathymetric models that seamlessly extend across oceans from shore to shore. To date, shallow water bathymetry data has been received from 21 organisations. Many of these data sets have already been incorporated into the GEBCO_08 Grid.

4.3 GEBCO Web Site

Since July 2008, GEBCO's web site has been maintained and updated at the British Oceanographic Data Centre on behalf of GEBCO. It can be accessed at the domain www.gebco.net. The web page content has been updated to reflect the release of new data sets and/or on request for content update by GEBCO colleagues. The 'news and events' web pages (www.gebco.net/about_us/news_and_events/) are regularly updated during the year. Users can be kept informed about the release of news items via a Really Simple Syndication (RSS) feed. Since the web site's re-launch in July 2008, there have been over 569,000 web pages viewed.

4.4 Nippon Foundation

In order to widen the GEBCO community and to encourage younger scientists and hydrographers to become involved in mapping the ocean floor, GEBCO has undertaken the training of a new generation of younger scientists and hydrographers in ocean mapping through a grant from the Nippon Foundation. This programme commenced in 2004. Between 2007 and 2011, this programme, administered by the University of New Hampshire (USA), has produced 30 Nippon Foundation Scholars from 19 countries. Nippon Foundation Scholars actively participated in GGC and TSCOM annual meetings in Toyko, 2008, Brest, 2009 and Lima, 2010, in TSCOM, New York, 2007 and in SCUFN, Jeju Island, 2008 and Brest, 2009. Two former scholars from Argentina and Pakistan were elected as members of SCUFN. Recently, the Nippon Foundation has provided additional funds to support existing Nippon Scholars' participation in activities that further develop them and enhance personal networks in ocean affairs, such as the regional mapping efforts of GEBCO. Areas of current emphasis are the Indian Ocean, Southeast Pacific and Arctic and Southern Oceans. It is anticipated that GEBCO Nippon Foundation Scholars will become regular participants in the IHO Regional Hydrographic Commission efforts.

4.5 Gazetteer of Undersea Feature Names

GEBCO's Sub-Committee on Undersea Feature Names (SCUFN) handled 332 submissions and approved 236 undersea feature names during the period. The IHO Data Centre for Digital Bathymetry (IHO DCDB) completed part one of a comprehensive project to review, update, correct and migrate the GEBCO Gazetteer of Undersea Feature Names to a geospatial database. This contribution represents a huge step forward for GEBCO, as the Gazetteer will soon be available to the public as a web service from the GEBCO website in formats that are compatible with multiple GIS systems.

4.6 Improving Ocean Mapping Technology

The Technical Sub-Committee on Ocean Mapping (TSCOM) held a workshop in Boulder, Colorado, USA to begin the development of a model for smooth digital data flow from data producers to the GEBCO product. The GEBCO Data Flow Workshop was attended by fourteen members of the GEBCO community. The goal of the workshop was to develop a plan to allow data, grids, products, etc. to flow in a predefined manner through the GEBCO community for incorporation into the compiled GEBCO product. After two and a half days, a GEBCO data flow model was formulated and agreed upon.

TSCOM has also organized highly successful Science Day symposia at each GEBCO annual meeting.

4.7 Revitalizing Regional Mapping

GEBCO has taken steps to revitalize the regional mapping efforts of the IOC with the proposed creation of a new Sub-Committee on Regional Undersea Mapping (SCRUM). Terms of Reference for SCRUM have been agreed by the GGC. Approval of this new sub-committee is currently being requested from both IHO and IOC.

A major project since 2007 within GEBCO's regional mapping efforts is the production of the International Bathymetric Chart of the Southern Ocean (IBCSO). It was primarily initiated by IOC and SCAR in order to build up a comprehensive geodata-base used for scientific applications as well as for the production of a new Nautical Chart scheme in areas of the Antarctic Treaty (south of 60°S). For this reason, close cooperation including data and information exchange is practised between the IBCSO Editorial Board and the IHO Hydrographic Commission on Antarctica (HCA).

The goals of the International Bathymetric Chart of the Arctic Ocean (IBCAO) and IBCSO are to compile the most up-to-date bathymetric portrayals of these two regions. The key experts conducting bathymetric mapping in Arctic and Antarctic waters of the IBCAO and IBCSO organized an Arctic-Antarctic Seafloor Mapping Meeting at Stockholm University in May 2011. The main aims of the meeting were to coordinate mapping activities, improve the IBCAO and the IBCSO, discuss the uses and technical requirements of regional bathymetric compilations, and discuss data sharing and acknowledgment.

A GEBCO workshop was held at the *Centro de Investigaciones Oceanográficas e Hidrográficas* in Cartagena, Colombia in November 2011. There were 12 attendees from the IBCSO who attended the GEBCO workshop. The *Carta Batimétrica Internacional del Pacífico Sur Oriental* (IBCSEP) group were very enthusiastic about the workshop, which was a presentation on how GEBCO worked, and how GEBCO contributors undertook work using digital data, including data compilation, gridding and grid-publication. The group asked for further workshops in particular focussing on databases, data cleaning and gridding techniques.

4.8 Distribution of GEBCO's bathymetric data sets and products

A. Internet downloads of GEBCO's gridded bathymetric data sets

GEBCO_08 Grid

Since 01 September 2010

- Full global grid: 1,817
- User-selected sub-regions of the global grid: 3,795

Since release, 29 January 2009

- Full global data set: 3,939
- User-selected sub-regions of the global grid: 7,823

GEBCO_08 Source Identifier Grid

Since 01 September 2010

- Full global grid: 825
- User-selected sub-regions of the global grid: 846

Since release, 27 November 2009

- Full global data set: 1,210
- User-selected sub-regions of the global grid: 1,150

GEBCO One Minute Grid

Since 01 September 2010

- Full global data set: 997
- User-selected sub-regions of the global grid: 1,308

Since 01 January 2009

- Global data set: 3,041

- User-selected sub-regions of the global grid: 3,100

B. Internet downloads of viewing software for displaying and accessing data from GEBCO's grids

- Total number of downloads since January 2009: 7,079
- Total number of downloads since September 2010: 3,227

C. Distribution of the GEBCO Digital Atlas (GDA)

- Since 01 September 2010, 97 copies of the GDA have been distributed. This includes copies sold to commercial companies and complimentary copies given, for example, to participants on training courses.
- Since its release in 2003, 1,624 copies of the GDA have been distributed.

5. Proposals for adoption by the XVIIIth I.H. Conference:

The Conference is invited to note the report.

**REPORT BY THE IHO - DATA CENTER FOR DIGITAL BATHYMETRY (DCDB)
by the Center Director, Mrs. Lisa TAYLOR, NOAA, USA**

I. Background

The International Hydrographic Organization Data Center for Digital Bathymetry (IHO DCDB) hosted by the U.S. National Geophysical Data Center (NGDC) was officially established in 1990. The IHO DCDB operates and maintains a worldwide digital data bank of oceanic bathymetry on behalf of the IHO Member States. Since its inception, the IHO DCDB has made substantial progress toward establishing itself as the focal point for the digital bathymetric data service for IHO Member States.

During the reporting period of January 2007 to December 2011, the numerous accomplishments of the IHO DCDB include:

- Responded to multiple data requests from IHO Member States
- Increased international bathymetric data holdings
- Enhanced data management and access
- Developed coastal to global digital elevation models to support tsunami inundation modelling and forecast and warnings
- Conducted a thorough review of the GEBCO Gazetteer of Undersea Features Names
- Started migrating to ISO metadata standard
- Hosted digital elevation models (DEM) development and data management training sessions for GEBCO Nippon students

II. Data Management and Access

Over the last five years, the IHO DCDB responded to over 540 requests for data or information from organizations in 37 IHO Member States, as well as several non-IHO Member States.

Enhanced Map Services:

The IHO DCDB has developed a new set of map viewers using ArcGIS Server to display data from multiple databases. The map services can be consumed by a variety of clients through standard protocols, making the data more easily accessible to multiple users. A new [Bathymetry Viewer](#) allows users to access multibeam sonar data, track line geophysical data, and bathymetric/topographic digital elevation models (DEM), as well as point soundings archived at IHO DCDB, and metadata not archived at IHO

DCDB from one web page. The viewer includes both a global Mercator-projection view and a polar projection for data surrounding the poles, as well as allowing for seamless panning across the antemeridian.

Metadata Access:

The IHO DCDB is enhancing metadata discovery by using ESRI GeoPortal Server along with ISO metadata standards.

New Web Applications and User Tools:

- New web applications are being developed to utilize modern frameworks such as Groovy & Grails, providing more functionality for searching, viewing, filtering, and retrieving data that meets specific criteria.
- The GEODAS [Grid Translator](#) now offers translation of bathymetric gridded databases to several formats using various grid parameter options. Users can create and download custom grids of ETOPO1, U.S. Coastal Relief Model, and (U.S.) Great Lakes Bathymetry gridded datasets.

Database Management:

The IHO DCDB has migrated its single-beam, multi-beam, hydrographic, and sidescan sonar databases to a spatially enabled Oracle Relational Database Management System to aid in maintaining data consistency and to increase overall data quality and searchability. This migration has led to development of an alternative tab-delimited format, [MGD77T](#), which overcomes some of the limitations of the fixed length MGD77 records. The IHO DCDB now provides data in both MGD77 and MGD77T formats.

III. Growth in International Bathymetric Data Holdings

Over the reporting period, the IHO DCDB received multi- and single-beam bathymetric data from Australia, Brazil, Canada, Indonesia, Ireland, Japan, Korea, and New Zealand:

- Marine Trackline Bathymetry Database:
Added more than 11 million bathymetric soundings from 262 cruises for a total of more than 54 million bathymetric soundings from 4,884 cruises (7.5 million bathymetric soundings from 226 cruises came from non-US IHO Member States).
- Multibeam Bathymetry Database:
Added 742 cruises for a total of 6.0 terabytes of data files from 1,761 cruises.
- National Ocean Service Hydrographic Database:
Increase of over 63 TB for a total of over 73.53 TB of survey data.

IV. Development of Digital Elevation Models

During the reporting period, the IHO DCDB built 90 Digital Elevation Models (DEMs) covering all of Puerto Rico and portions of the U.S. East, West, Gulf, Hawaiian, and Alaskan coasts, as well as several Pacific Islands to support tsunami and storm surge forecasting and modelling efforts. Users may view planned DEMs and download completed DEMs with corresponding metadata and documentation at <http://www.ngdc.noaa.gov/mgg/coastal/coastal.html>. The DEMs are useful for coastal process modelling, ecosystem management and habitat research, coastal and marine spatial planning, and hazard mitigation and community preparedness.

V. Review of GEBCO Gazetteer of Undersea Feature Names

The IHO DCDB completed Part I of the GEBCO Gazetteer Enhancement Project with a comprehensive review and update of the GEBCO Gazetteer of Undersea Feature Names ([SCUFN24-07.2A](#)). Pending additional resources, Part II of this project will include correcting and enhancing feature geometries and providing the Gazetteer as a web service accessible via an on-line interface. Completion of this project is critical to ensure that the Gazetteer is available to all IHO Member States and used consistently in GIS systems and other applications such as Google Earth.

VI. Hosted GEBCO NIPPON Students

Starting in 2008, the IHO DCDB has hosted two to four week DEM development and data management training sessions for the Nippon Foundation/GEBCO Training Project. The University of New Hampshire hosts the project, which is designed to train maritime experts from around the world in deep-ocean mapping. Students from organizations ranging from the Royal Thai Navy's Hydrographic Department, Sri Lanka's National Aquatic Resources Research and Development Agency and the Japan Hydrographic Office worked with IHO DCDB staff to learn about hydrographic / bathymetric data management, metadata development, and developing coastal digital elevation models and other derived bathymetric products. The IHO DCDB has agreed to support the NIPPON/GEBCO Programme by offering these training sessions as a regular part of the curriculum.

VII. Conclusion

The IHO DCDB plays a critical role in providing IHO Member States easy access to fully described and archived global bathymetric data. With sufficient support, the IHO DCDB will continue to enhance its user services and data base management practices and partner with international organizations to increase its data holdings.

VIII. Proposals for adoption by XVIIIth I.H. Conference

The Conference is invited to note the report.

**Addendum 1 to
WORK PROGRAMME No. 3
INTER REGIONAL COORDINATION
AND SUPPORT**

**IRCC REPORT ON DEVELOPING IHO PUBLICATION C-55,
STATUS OF HYDROGRAPHIC SURVEYING AND NAUTICAL CHARTING WORLDWIDE**

**IRCC REPORT ON DEVELOPING IHO PUBLICATION C-55,
STATUS OF HYDROGRAPHIC SURVEYING AND NAUTICAL
CHARTING WORLDWIDE**

(Final - 10 March 2012)

1. Background

At its 3rd meeting (IRCC3), the IRCC Committee agreed Action 09 – “Conduct a meeting to design a framework for C-55 development” as a result of a paper presented for consideration to IRCC3 by the Baltic Sea Hydrographic Commission (BSHC). The paper (attached to IRCC3-03.1F) was entitled “Baltic Sea Hydrographic Commission Approach for Coordinating Hydrographic Surveys on the Baltic Sea and for Displaying Survey Status”.

The IRCC members agreed that extending such a database worldwide would improve the current C-55 publication, and UKHO was tasked to organise a meeting of the CBSC, RSAHC, SAIHC, EAHC, MBSHC, MACHC, NIOHC, SWPHC and BSHC and report to IRCC Chair by 31 July 2011.

The CBSC Chair thought there was some value in developing certain themes before arranging a meeting in order to stimulate discussion. Consequently UKHO and the CBSC Chair conducted some preparatory scoping work by correspondence with significant input from the Finnish Transport Agency Hydrographic Office.

In parallel, the IHB submitted for consideration by the 18th International Hydrographic Conference (IHC) proposal - PRO 6 - about the global status of hydrographic surveying. This proposal invites the Conference to “*task the IRCC and HSSC in cooperation with the Directing Committee to progress whatever actions are required to improve the collection, quality and availability of hydrographic data worldwide, monitor and rectify possible deficiencies and shortcomings, cooperate with other international organizations and stakeholders as necessary, and to keep Member States informed on progress on this issue.*”

This document reports on the outcome of the preliminary work of IRCC, supplemented with input from the IHB Directing Committee, and offers recommendations for the way forward to be considered by the 18th International Hydrographic Conference when discussing PRO 6 and the IHO 2013-2017 Work Programme.

IRCC is aware that the information in this document is not complete and that the issues are not yet thoroughly analysed. This document is meant to foster open discussions.

2. Analysis

2.1. Current IHO C-55

2.1.1. In accordance with IHO Resolution 1/2010, the aim of the IHO Publication “Status of Hydrographic Surveying and Nautical Charting Worldwide, C-55” is to present a clear picture of the worldwide coverage of surveys and nautical charts and of the extent of effective organisations for the timely promulgation of navigational safety information. The content of the reports is now held in a live database on the IHO web site from which up to date reports can be extracted at any time. The database covers the waters of 90% of the coastal states of the world.

2.1.2. The third edition of C-55 is now a web based database solution. It is planned to be updated by the HOs to send updated information to the IHB by e-mail or fax. Outputs are different reports and summary reports from the database.

2.1.3. The C-55 contains very limited and overview information on the following issues:

- Status of hydrographic surveying (percentages for two depth ranges),
- Status of nautical charting (percentages for INT, RNC and ENC coverages for three scale ranges),
- Status of Maritime Safety Information (YES/NO information).

2.1.4. The current C-55 has some drawbacks or weaknesses such as:

- The information is very high level status information,
- The grouping of data is useless for many purposes (e.g. < 200m / > 200m),
- The updating procedures need involvement and work of the IHB staff,
- The information in the current C-55 has little direct benefits to the HOs and thus some HOs are not motivated to update their information,
- It does not cover all areas used for navigations, e.g. inland lakes,
- It does not support all kind of status to be included, e.g. re-survey frequency,
- It does not support modern GIS tools and has very limited capabilities of spatial analysis.

2.2. Actions and proposals related to the development of C-55 and other metadata services

2.2.1. The BSHC proposed to the IRCC3 meeting in May 2011 the Baltic Sea Re-survey Scheme and Re-survey Database as an example of a regional implementation for presenting survey status and plans. The BSHC also proposed that the future C-55 should include more information than only the status of hydrographic surveys, e.g. status of nautical charting.

2.2.2. The Baltic Sea INT Charting Group (BSICCWG) had its first meeting in June 2011. At that meeting the IHB presented a draft database solution for establishing a database to replace the existing Catalogue of INT Charts, S-11 Part B. During this demonstration some problems with the integrity of the current data were identified. The BSICCWG welcomed the demonstration, endorsed the further development plans and volunteered to use the Baltic Sea INT Scheme as a Pilot area of the new database. However there have not been any actions on this issue since June 2011.

2.2.3. The WEND-WG1 meeting in October 2011 had at least two documents related to the metadata. In *WEND-WG1-03* the IHB presented some possible ways to present and forward ENC metadata. The meeting agreed the paper in principle; however there were some concerns over resourcing, upkeep and updating. In *WEND-WG-10* (Chapter Metadata) the BSHC re-iterated its proposals for the development of C-55 as presented at the IRCC3.

2.2.4. The Hydrographic Commission of Antarctica (HCA) had its 11th meeting in October 2011. There the IHB presented a demonstration of the Antarctic GIS which has been developed at the request of HCA (ref. HCA11-07.4B). The GIS is based on a S-100 compatible metadata database and a web map server; it includes many kinds of metadata which can be browsed and displayed by Google Earth browser. The solution is intended to be usable on a global basis, ideally under the stewardship of each Regional Hydrographic Commission (RHC).

2.2.5. The BSHC is in the process of updating the limits and names of the subareas of the Baltic Sea, S-23 Chapter 2 Baltic Sea. During this process it has been found that the existing format of S-23 (1953 edition) is old-dated and does not support efficiently the modern digital needs. There are some proposals to enhance the format, e.g. to be able to store the limits as geometry features. In addition, the S-23 can also be regarded as metadata and to be included into the future C-55 database. It is not known how

extensively the S-23 will be used as a printed document¹, if the information is available in digital form in a database. If needed, a printed S-23 can be printed from the database.

2.2.6. At the NSHC Re-survey WG meeting on 28-29 November 2011 (with the participation of a representative of the BSHC Re-survey MWG) there were some discussions on the framework of C-55. The discussions dealt mainly with issues related to showing the status of surveys. It was noted that there may be different capabilities in different regions. The solutions should be kept quite simple. There are already possibilities to exchange e.g. shape files. IHO DQWG should be connected. Data models should be harmonised and duplicate datasets should be avoided.

2.2.7. At the HSSC CSPCWG meeting (29 November – 2 December 2011) the demonstrations and plans of the Antarctic GIS and the S-11 database were presented and welcomed by the meeting.

2.2.8. Under task 1.2.3 in the IHO Work Programme 2012 (IHO Publications - production, editing) the IHB is developing a semi-automated capability to support various IHO publications. In parallel to the development of the Antarctica/Regional GIS, the IHB is working on a “country” database. This database will, in the first instance, contain all relevant details of States that may be required as references by the IHO and the IHB. So, for example, all the information currently lodged in IHO Publication P-5 (Yearbook) will be accessible via this database and it is envisaged that the Yearbook will be generated directly as a report from the database. This is similar to how IHO Publication S-62 (List of Data Producer Codes) is already maintained and generated. The Antarctic GIS is expected to be available by the end of 2012 and a global version available one year later. The country database is expected to be available towards the end of 2012. It is envisaged that information in the two databases will be linked and accessible, such that the current requirements of C-55 can be met via a digital data environment. This will include the ability to import and export the data for manipulation by GIS tools as required and input/output access via a data portal.

2.2.9. As a summary to the issues listed in the previous paragraphs it can be noted that the IHO has many kinds of metadata. Some of these are already in digital form, but many of them are still in text format in printed documents. Some of these are listed in the table below.

Dataset	Metadata	Format	Comments
C-55	Status of hydrographic surveys, nautical charting and MSI	database	- limited information, - not very useful format
S-11 Part B	INT Chart Catalogue	text document	- laborious to update, - difficult to use
IHB, RENCs	ENC metadata	digital	- natural function to RENCs
S-23	limits and names of sea areas	text document	- old-dated format, - difficult to use
HOs	Chart catalogues	text (?) documents	- national chart catalogues - lists of backup charts
BSHC	Re-survey metadata	database	- goal to cover the whole Baltic Sea area - available via web.

¹ Subject to the orientations for the future of this publication which are considered separately. Only the “container” aspects are considered here.

Dataset	Metadata	Format	Comments
Others	Tide gauges, undersea features, etc.		

Ongoing developments at the IHB should provide the tools for managing and displaying these metadata and should constitute the foundation of a single project for a database based IHO Metadata Service including harmonized specifications (to be agreed by IHO MS), development, concept of operations / maintenance of database (ensuring interoperability and sustainability in the long term), interfaces with other initiatives (e.g.: Inspire, etc.).

2.2.10. The benefits of a database based IHO Metadata Service are quite obvious and go well beyond simply replicating current publications. Some of them are listed below:

- Increases the integrity and quality of metadata (database integrity checks).
- Allows more easy population, browsing, downloading and updating the metadata.
- Reduces the workload of the IHB staff (when updating done by HOs or RHCs).
- May replace some current IHO printed Publications (e.g. P-5, S-11 Part B, S-23, S-62). These can be printed directly from the database when needed.
- Modernises IHO metadata management.
- Supports modern GIS applications and analysis.
- Supports IHO capacity building.
- The HOs are likely to populate and update their information if they also have direct benefits of the service.

2.2.11. The technological aspects of developing an IHO Metadata Service seem to be properly harnessed through ongoing development at the IHB. However the creation of digital databases, while offering much greater efficiencies, will not overcome the major weakness that is a lack of reliable and relevant data. The issue of how the appropriate information can be collected and maintained in the long run on a global basis is probably the most critical aspect.

3. Way forward

3.1 Based on the consideration above, a task dealing with the enhancement of C-55 has been proposed in the draft IHO 2013-2017 Work Programme under IHB leadership (ref. CONF.18/REP/01, task 3.4.3: enhance publication C-55).

3.2. As a first step it is recommended to develop a framework for an IHO Metadata Service, including all ongoing actions and metadata, not only limited to that currently in C-55. It is important to have overview specifications for all metadata, even if some parts will be implemented in later phases.

3.3. The total framework should be defined at least in principal levels before some details of them will be implemented so that the various parts can be implemented in different phases but in a harmonised way to avoid any mismatch between them.

3.4. A Work Plan for developing the framework should be established.

3.5. The following issues should be considered and included into the Work Plan to develop the framework:

- Clarify the expected use (e.g. for capacity building, re-survey schemes and priorities, etc.) and users (e.g. IHB, HOs, IMO, other organisations) of the metadata,
- Identify which IHO Publications would benefit from a metadata based service,
- Define the data contents of the metadata (e.g. time dimension, additional information such as survey plans, etc.),
- Define in which way the metadata will be organised and grouped (e.g. for safety of navigation / for other purposes),
- Specify the joint data model for metadata sets, based on S-100 and relevant SDI standards,
- Specify the operational principles of the metadata base (e.g. frequency of updating; on-line updating by authorized database operators, browsing by all; interoperability with other systems, etc.),
- Evaluate ongoing technical developments,
- Evaluate technical and other resources needed at the IHB, RHCs, ICCWGs and HOs, taking into consideration the impact on the maintenance of existing IHO Publications and the possibility to resort to contracted support,
- Identify and address difficulties in obtaining and maintaining up to date, reliable and relevant data both at the national and regional level,
- Propose ways to deal with those countries not able to upload and / or update their information in the database,
- Analysis of impacts,
- Financial considerations.

3.6. Many IHO bodies should be involved in the work to define the framework, e.g. the IHB, RHCs, IRCC, HSSC, DQWG, DCDB. A project group should be formed to assist the IHB and ensure coordination with all the bodies concerned.

3.7. IRCC recommends that:

- (i) the IHB take the opportunity of the 18th IHC to brief MS on the progress made so far;
- (ii) the Conference consider the principles of developing a IHO Metadata Service project when discussing PRO 6 and the IHO 2013-2017 Work Programme;
- (iii) the IHB arrange a side-meeting of the interested parties to consider in more details the Work Plan and the organization of the project if the principles are agreed by the Conference.

FINANCE DOCUMENTS

**PRELIMINARY IHO
FINANCE REPORT
2007 -2011**

PRELIMINARY IHO FINANCE REPORT 2007-2011

Submitted by the IHB Directing Committee

1. INTRODUCTION

1.1 Preparation of the Report

This report on the administration of the finances of the International Hydrographic Organization (IHO) for the period 1 January 2007 to 31 December 2011 has been prepared by the Directing Committee of the IHB for examination by the Finance Committee (FC) and subsequent recommendation for approval by the Conference in accordance with Article 12(a)(i) of the IHO General Regulations.

1.2 Audit of the accounts

The Bureau's accounts for each calendar year have been audited by Cabinet Morel, the external auditor appointed by the XVIIth International Hydrographic Conference (IHC). The annual report of the auditor has been included in the Annual Report, Part 2 – Finance, that is sent to Member States for approval.

1.3 Currency - Banks

The Euro was introduced on 1st January 2002 as the currency to be used for the accounting purposes of the Organization in accordance with Article 2(a) of the IHO Financial Regulations. The Bureau is making use of the services of HSBC and CMB in Monaco for its financial and banking requirements.

1.4 Annual Financial Statements

Financial statements have been forwarded annually to Members of the Finance Committee for comment. Upon review and any necessary action, these comments have been included with the Annual Report, Part 2 Finance, for subsequent approval by the Member States.

1.5 Monthly Financial Report

The Directing Committee very closely monitors the financial situation of the Organization through Monthly Financial Reports and initiates appropriate actions whenever it is considered necessary.

1.6 Finance Committee Officers' meetings

In accordance with Article 14 of the IHO General Regulations the Chairman and Vice-Chairman of the Finance Committee have met with the Directing Committee twice per year, to examine the progress of the budget and relevant related financial matters concerning the Organization. Reports of these meetings have been circulated to Member States.

1.7 Directing Committee Monthly Finance Monitoring.

The IHB Finance Section prepares and submits to the Directing Committee a document called "Monthly Financial Reporting Statements" which provides detailed information on the budgetary statements of Incomes and Expenditure as well as information on the financial holdings. The Directing Committee examines the report on the Organization's finances situation, monitors its progress and takes any necessary actions as and if needed.

2. INCOME 2007-2011 – TABLE 1

2.1 Contributions

2.1.1 Number of shares

The five-year budget estimates (2007-2012) were prepared for the XVIIth IHC based on a number of shares calculated at the time from the tonnage reported by Member States in accordance with Articles 4, 5 and 6(a) and 6(b) of the IHO Financial Regulations. During the five-year period there were small changes in the number of shares due to changes in the tonnage figures reported by Member States in accordance with Article 6(d) of the IHO Financial Regulations.

The 652 shares calculated in 2007 progressed to 683 in 2008, 684 in 2009, 682 in 2010 and 683 in 2011. Qatar became a new Member State of the Organization in May 2007 with five shares, Ireland became a new Member State of the Organization in June 2007 with three shares, while Suriname re-joined the Organization in 2008 with two shares.

2.1.2 Value of a share

There was no increase in the share value for the period 2007-2011. The share value has remained unchanged at 3,984.48 Euros as was fixed in 2005.

2.1.3 Suspension of rights and benefits

In 1983 the Dominican Republic and the Democratic Republic of Congo (ex Zaïre) had their rights suspended for failing to pay their contributions in accordance with Article XV of the Convention on the IHO.

2.1.4 Payments of contributions

Payments of contributions have generally been good throughout the period. The status of contribution payments has been provided in each Annual Report, Part 2 – Finance. As a general observation it has to be noted that, for the period 2007-2011, 60% of the contributions were paid by 50% of Member States by the end of April each year, while the final amount received at the end of the years has varied between 87% (in 2010) and 95% (in 2009) with an average over the five year period of 91.35%.

2.2 Sales of Publications

Income from the sales of publications for the period 2007-2011 was 7,141 Euros which is lower than the estimated 28,500 Euros. This is due to the decision taken in 2009 to place most IHO publications on the IHO web site and make them downloadable free of charge.

2.3 Interest on bank accounts

The total interest earned for the period 2007-2011 was 340,876 Euros or nearly double that projected by the XVIIth IHC (185,000 Euros). 85% of the interest earned (290,000 Euros) was received during the period 2007-2009. From 2009 there has been a sharp decline in interest rates due to the global financial crisis.

2.4 GEBCO Grant

The Government of the Principality of Monaco generously continued its annual contributions towards GEBCO expenses amounting to 39,500 Euros during the past five-years. Since 2006 this annual grant has been allocated to the GEBCO Fund established after the GEBCO Centenary celebrations that took place in Monaco in 2003 in the presence of H.S.H Prince ALBERT II.

2.5 Internal Tax

The Directors and Staff of the Bureau continue to pay a monthly Internal Tax, which is 10% of their gross salary.

2.6 Extraordinary income

Extraordinary income of 44,727 Euros resulted from interest paid on overdue contributions as required by Article 13-c of the IHO Financial Regulations.

2.7 Summary of income

The total estimated income for the period 2007-2011 was 14,443,626 Euros compared to the actual total income received during the period of 14,693,891 Euros. The small increase was mainly due to the increased number of shares described earlier.

3. EXPENDITURE 2007-2011, TABLE 2 EXPLANATORY NOTES

3.1 Chapter I – Personnel costs

3.1.1 Directors' and staff salaries

The Directors' and staff salaries increased in accordance with the cost of living fluctuations, as announced by the Government of Monaco, and represented by the value of the index point, which went from 7.00471 Euros in January 2007 to 7.57737 Euros in December 2011. This is an overall increase of approximately 8.2 % over the five-year period, or an average 1.64% per year. Salary promotions of the staff have been strictly in accordance with the salary tables and the Staff Regulations.

The number of staff has remained unchanged throughout the period - being 19 persons including the Directors. One Category B staff member died in July 2010, one Category B staff member retired in February 2010 and one Category A staff member retired in May 2011. These posts have all been filled by replacement personnel and announced to Member States by Circular Letter.

3.1.2 Annual bonus

An annual bonus of one-month's salary has continued to be paid to Category B and C staff. The bonus ceased for Directors, Category A staff and Translators from 1 July 2004 when their salaries were aligned with the UN salary system. The bonus is not taken into account for pension purposes.

3.1.3 Payments to the Retirement Fund

The retirement schemes of Directors and staff are as follows:

- Staff recruited before 31 August 1987 come under the IHO Internal Retirement Fund (IRF). For these employees the Organization and the Staff pay a contribution of 15% and 7.5% of the basic salary, respectively. Two contributing Category B staff members remain under this scheme;
- The Directors and staff recruited after 31 August 1987 have Personalized Pension Plans (PPP), to which the Organization and the staff contribute 15% and a minimum of 5% respectively.

In addition, the Bureau continues to pay contributions for all staff, except Directors, to the *Association Monégasque des Retraites par Répartition* (AMRR). The AMRR is a Monegasque complementary retirement scheme.

3.1.4 Accident Insurance for IHB Personnel

The Bureau has continued to maintain a compulsory insurance policy covering the risk of work accidents.

3.1.5 Family allowance

Family allowances were paid, in accordance with the rates provided by the CCSS (*Caisse de Compensation et des Services Sociaux*) of Monaco, to those employees entitled to receive them.

3.1.6 Education grant

A total of 64,000 Euros was paid to one Director and one Category A staff as Education grants, based on the United Nations' system, as adopted by the XIV IHC and described in the IHO Staff Regulations.

3.1.7 Medical expenses

The reimbursement of medical costs incurred by Directors and staff members (both current and certain retired staff members) is an item which is costly, varied and unpredictable by nature. The Bureau subscribes to an insurance policy to mitigate against major medical claims and the recovery of payments against this policy has been indicated separately. From the Personnel costs in Table 2, it can be seen that the medical costs in 2009 and 2010 have increased by about 50% to 60% compared to previous years, and by 100% in 2011, due to the hospitalization and the extended treatments of three staff members. At the same time the recovery of medical expenses from the insurance policy has increased by about 70% in 2009 and 300% in 2010 compared to previous years. This insurance policy includes the obligation to have an extra policy covering disability and death.

3.1.8 Home leave

Directors and Category A staff recruited on an international basis and their dependents are eligible for "Home Leave" every two years in accordance with the decision of the XIIIth IHC. Home leave has been granted in accordance with paragraph VI.4 of the IHO Staff Regulations.

3.1.9 Training

Staff Training was concentrated on language tuition in English/French and Spanish, the use of accounting software and of graphics applications. The training was in support of upgrading the skills and experience of the Staff Members involved.

3.1.10 Summary of personnel expenses.

Total expenditure in this chapter was 10,026,591 Euros compared to an approved expenditure of 10,438,943 Euros.

The expenditure of this chapter represents 81.76% of the total operating costs and should be considered as "inelastic" expenses that slowly increase year after year due to increases in the cost of living and the provision of services.

3.2 Chapter II – Current operating costs

3.2.1 Maintenance

The cost of maintenance contracts for the premises and I T equipment remained stable throughout the five-year period.

3.2.2 Office stationery

Expenditure to cover requirements under this item remained stable and within expectations

3.2.3 Post, telephone and telefax

Expenditure for all the communication costs of the Bureau has remained steady throughout the five-year period. This can mainly be attributed to the increased use of the IHO web site by Member States to download various documents and the use of e-mails and other electronic means by the Bureau to send Circular Letters and other documents.

3.2.4 Consultancy expenses

During the five-year period approximately 54,000 Euros were paid for consultancy and support under contract. This amount represents 22% of the amount approved by Member States. This underspend can mostly be attributed to the limited resources at the IHB at the time or in IHO bodies to specify, supervise and verify work to be done under contract, and sometimes the difficulty in specifying the requirements in contractual and deliverable terms.

3.2.5 Public Relations

The funds available were used to cover expenses related to receptions, invitations, requirements to support visiting officials of Member States and other Organizations to the Bureau and for celebrating World Hydrography Day.

3.2.6 Travel (Technical Assistance and long distance travel)

Maintaining expenditure on travel within the budget allocation was achieved for each year during the five-year period. This is an item in the budget where in the past the Bureau has spent more than allocated. The total spending during the five-year period 2007-2011 of 1,137,561 Euros was less (85%) than the amount of 1,336,000 approved by Member States.

3.2.7 Publications

This item covers the cost of producing specific publications. Although part of the work is carried out internally there are specific requirements (such as posters) that need to be produced externally.

By mutual agreement an arrangement between a private company and the IHO for the publication of the International Hydrographic Review (IHR) came to an end in January 2009. With the approval of Member States the Bureau has undertaken to publish the IHR mainly in digital form. A fee is paid to a new editor who was selected from candidates proposed by Member States.

3.3 Chapter III – Capital Expenditure

A total of 164,436 Euros was expended in the period for the purchase of office equipment, furniture and publications representing 46% of the amount of 354 K€ approved by Member States.

3.4 Total operating cost

The total operating cost during the five-year period was 12,262,307 Euros. This was 10% less than the approved budget of 13,484,490 Euros.

3.5 Chapter – Funds

3.5.1 GEBCO Fund

The GEBCO Fund was established in 2008 in order to cover various needs and requirements related with GEBCO activities. The allocation of funds comes mainly from the volunteer contribution of the Government of Monaco.

3.5.2 Printing Fund

The five-year budget made provision for a total of 6,100 Euros to be added to the printing fund. The fund is used to purchase new photocopiers, printers and other printing material as needed. At the end of 2011 a total of 73,792 Euros is available in the printing fund.

3.5.3 Renovation Fund

The five-year budget made provision for a total of 18,500 Euros to be added to the renovation fund and 76,500 Euros were transferred from the budget surplus. This fund is used as required to support various works in the premises of the Bureau. At the end of the five-year period the amount of 92,466 Euros is available.

3.5.4 I. H. Conference Fund

At the end of 2007 the I.H. Conference fund had a balance of 131,000 Euros with the five-year budget allocating the addition of 265,000 Euros over the period together with 250,000 Euros transferred from the budget surplus, to support the 2009 EIHC and the 2012 IHC. For the 2007 IHC and the 2009 EIHC a total of 267,500 Euros was spent in planning and execution. At the end of 2011 448,000 Euros are available in the I.H. Conference Fund for the planning and execution of the XVIIIth IHC and subsequent Conferences or Assemblies.

3.5.5 Relocation Expenses of Directors and PAs Fund

The five-year budget made provision for a total of 113,500 Euros to be added to the relocation expenses (joining and repatriation) of Directors and PAs with an additional 281,000 Euros being transferred from the budget surplus. This fund covers all the obligations for the relocation expenses of the Directors and PAs (furniture, tickets, et cetera) and their dependents when they join or leave the Bureau. A total of 76,000 Euros was expended during the period and at the end of 2011 405,000 Euros are available in the fund.

3.5.6 Capacity Building Fund

This Fund was established at the end of 2004 to cover the Capacity Building Program requirements of the Organization. During the five-year period the Fund has received 324,000 Euros from the budget, 148,000 Euros from the budget surplus and 529,227 Euros donated by the Republic of Korea. During the period 2007-2011 840,723 Euros were spent to cover the various activities of the Capacity Building of the Organization. At the end of 2011, 398,658 Euros was available in the Capacity Building Fund.

3.6 Operating Cash Reserve

The operating cash reserve has been established to ensure the financial stability of the Organization and to avoid any cash liquidity difficulties. The amount that the IHB shall have at its disposal, on 31st December of each year, shall not be less than three-twelfths of the total annual operating budget of the Organization in accordance with Article 17 of the IHO Financial Regulations. At the end of 2011 the IHB had more than the required minimal operating cash reserve of 700,457 Euros.

3.7 Emergency Reserve Fund

In accordance with Article 18 of the IHO Financial Regulations, the emergency reserve fund, the amount of which shall be not less than one-twelfth of the total annual operating budget of the Organization, is exclusively designed to enable the Organization to meet extraordinary expenditures. At the end of 2011 the emergency reserve fund was valued at 259,748 Euros and this amount is held in reserve by the IHB.

3.8 IHO Internal Retirement Fund (IRF)

Since 1st January 2005 the Bureau has been paying the pensions of the retired staff from the IRF. There are eight pensioners and two staff members under the IRF. The amount of the IRF on 31st December 2011 was 3,015,246 Euros. An amount of 110,000 Euros were transferred during the five-year period from the budget surplus to support the IRF.

3.9 Summary of expenditure

The total expenditure, including the total operating cost and the actual expenditure in the operational funds, was 12,916,279 Euros over the five-year period which is less (8.7%) than the total approved budget of 14,143,390 Euros for the period. During the period, there were limited transfers of credit between Chapters of the budget as provided in Article 10 of the IHO Financial Regulations. Transfers of more than the allowed 10% transfer between chapters were not required.

4. CONCLUSIONS

Throughout the five-year budget period, total income has exceeded total expenditures in all years. The Bureau has striven to constrain costs and has enabled funds remaining in each year to be variously applied to maintain the Funds of the Organization, to increase the operating cash reserve and to increase the IRF. There was no requirement for an increase in the share value during the five-year period. Overall the Organization is in a satisfactory financial position.

The details of income, expenditures, net effect on capital, liabilities and the IRF are presented in the attached tables.

FIVE YEAR REPORT 2007-2011

TABLE 1

INCOME 2007- 2011 (Euros)

	2007	2008	2009	2010	2011 unaudited
Number of shares of contribution	635,0	681,0	684,0	682,0	683,0
New Member States	20,0	2,0			
Variation of tonnages	26,0		1,0	-2,0	1,0
Yearly Unit value of the share of contribution	3 984,48	3 984,48	3 984,48	3 984,48	3 984,48
CONTRIBUTION FOR THE YEAR					
(a) Received	2 349 376	2 546 043	2 592 484	2 371 966	2 429 948
(b) Remaining due at end of year	260 459	175 356	132 900	345 449	291 451
	<u>2 609 835</u>	<u>2 721 399</u>	<u>2 725 384</u>	<u>2 717 415</u>	<u>2 721 400</u>
SALES OF PUBLICATIONS	4 228	2 096	408	324	40
INTEREST ON MONIES IN BANKS	116 725	132 905	40 587	15 454	28 724
GEBCO Grant from Monegasque Government	0	0	0	0	0
INTERNAL TAX	150 442	151 798	157 105	155 677	160 961
TOTAL INCLUDING CONTRIBUTIONS DUE	<u>2 881 230</u>	<u>3 008 198</u>	<u>2 923 484</u>	<u>2 888 870</u>	<u>2 911 124</u>
Annual budget presented	2 740 600	2 929 051	2 944 950	2 909 565	2 919 460
<u>EXTRAORDINARY INCOME</u>					
Interest on overdue contributions	18 412	12 561	2 119	10 330	1 305
Administration fees from Japan CBC		7 928	6 895	7 607	3 980
Adjustment of rates AMRR for Cat. A		2 355			
Royalties	466	290	189	21	45
	<u>2 900 108</u>	<u>3 031 332</u>	<u>2 932 687</u>	<u>2 906 828</u>	<u>2 916 455</u>

2007 2008 2009 2010 2011 unaudited

TABLE 2

EXPENDITURE 2007- 2011 (Euros)I - PERSONNEL COSTS

a) Salaries - Directing Committee	399 676	405 248	413 780	422 965	438 257
b) Salaries - Category A	515 361	530 214	546 437	555 429	577 334
- Translators	115 874	121 454	124 011	127 882	133 044
- Category B & C	392 001	404 871	418 842	402 013	423 701
- Overtime	9 009	5 410	2 635	4 889	4 765
c) Annual Bonus	30 562	31 695	32 677	31 826	33 152
e) Payment to Retirement Funds	295 038	303 225	311 931	312 924	325 606
f) Insurances based on staff wages	13 502	14 150	14 373	14 058	11 965
Medical GAN premiums	67 495	61 715	52 381	54 195	62 711
g) Family Allowances	20 121	19 728	8 573	5 252	4 861
h) Education Grants	17 746	17 938	15 865	11 762	741
i) Medical claims paid	64 530	56 530	89 404	97 792	121 347
Medical claims - refunds from GAN	-19 908	-18 108	-34 807	-86 511	-50 342
Home Rental	0	0	0	0	0
j) Home Leave	13 550	7 464	6 954	6 652	8 612
l) Pensions to retired staff	0	0	0	0	0
m) Miscellaneous Personnel Expenses	752	136	4 687	14 977	25 185
n) Salaries - Temporary staff	0	0	0	0	0
k) Training	4 036	1 135	185	384	2 067
Total Actual Chapter I	1 939 345	1 962 805	2 007 928	1 976 489	2 123 005
Total approved Budget for Chapter I	1 976 000	2 038 500	2 084 791	2 137 132	2 202 520

	2007	2008	2009	2010	2011 unaudited
II - CURRENT OPERATING COSTS					
a) Maintenance of building	53 046	52 236	54 972	64 064	44 098
Multirisk Insurance	1 999	2 061	2 115	2 364	2 494
Maintenance of IT equipments	32 741	29 726	29 053	32 398	48 401
b) Office Stationery	10 435	6 644	8 735	6 931	8 954
c) Postage, telephone, telefax	42 777	40 234	35 163	34 941	36 175
d) Local Travel	3 797	2 252	2 335	2 593	2 719
e) Bank Charges	6 272	3 883	4 539	5 469	4 493
f) Consultancy Expenses (other than auditor)	16 124	6 424	17 800	7 105	7 000
g) Auditor's fees	3 900	3 900	4 900	4 400	4 400
h) Public Relations	7 487	11 806	10 776	9 883	14 916
i) Miscellaneous Operating Expenses	1 005	894	596	511	1 118
j) Technical Assistance	21 355	33 678	32 617	34 193	44 457
k) Long Distance Travel	180 529	190 037	180 436	231 225	189 034
l) GEBCO & Int. Bathymetric Charts	6 956	0	0	0	0
m) I.H. Review	11 230	7 561	11 009	10 000	10 000
o) Other publications	12 059	3 869	1 075	3 482	1 440
Total Chapter II	411 712	395 205	396 121	449 559	419 699
Total approved Budget for Chapter II	586 300	515 076	524 365	533 626	532 035
III - CAPITAL EXPENDITURE					
a) Purchase of IT equipments	5 880	5 102	3 427	13 195	14 914
Purchase of furniture & other equipments	4 362	4 766	398	10 560	6 477
Depreciation of fixed assets	26 614	23 561	17 004	8 801	10 387
b) Purchase Publications & binding	391	480	272	844	983
Total Chapter III	37 247	33 909	21 101	33 400	32 761
Total approved Budget for Chapter III	74 200	74 200	69 224	69 248	67 273
Total Operating Costs	2 388 304	2 391 919	2 425 150	2 459 448	2 575 464
Total approved Budget for Operating Costs	2 636 500	2 627 776	2 678 380	2 740 006	2 801 828

	2007	2008	2009	2010	2011 unaudited
IV - GEBCO			7 900	8 000	8 100
IV - PRINTING FUND ALLOCATION	6 100	0	0	0	0
V - RENOVATION FUND ALLOCATION	6 500	3 000	3 000	3 000	3 000
VI - I.H. CONFERENCE FUND	0	55 000	40 000	40 000	30 000
VII - REMOVAL OF DIRECTORS ALLOCATION	27 500	26 000	20 000	20 000	20 000
VIII - CAPACITY BUILDING ALLOCATION	64 000	70 000	70 000	65 000	55 000
	2 492 404	2 545 919	2 566 050	2 595 448	2 691 564
Total approved Budget per year	2 740 600	2 789 576	2 819 280	2 876 006	2 917 928
EXTRA EXPENDITURES AND LOSSES					
Death Mr Semlali				2 872	
GRAND TOTAL	2 492 404	2 545 919	2 566 050	2 598 320	2 691 564

2007 2008 2009 2010 2011 unaudited

TABLE 3

NET EFFECT ON CAPITAL 2007- 2011 (Euros)

Approved Expenditure Level	2 740 600	2 781 776	2 819 280	2 876 006	2 917 927
TOTAL EXPENDITURE	-2 492 404	-2 545 919	-2 566 050	-2 598 320	-2 691 564
TOTAL INCOME	2 900 108	3 031 332	2 932 687	2 906 828	2 916 455
Surplus on yearly Budget	407 704	485 413	366 637	308 508	224 890
<u>Currencies</u>					
Net Gains on Change Operations	3 252	46 890	1 027	8 358	326
Net Losses on Change Operations	-4 168	-11 223	-2 751	-834	-14
Net Gains on Valuation of Holdings	0	3 940	771	3 605	9 854
Net Losses on Valuation of Holdings	-28 327	-2 674	-2 325	0	
NET RESULT (Income/Expenditure/Currencies)	378 461	522 346	363 359	319 637	235 056
<u>OTHER OPERATIONS</u>					
Provision for Staff Retirement Rights		-28 772	-97 400	59 101	-53 651
Transfer at destination of CBF			-78 000	-70 000	
Transfer to Conference Fund		-100 000	-100 000		-50 000
Transfer to Relocation of Directors and PA fund		-17 000	-64 000	-150 000	-50 000
Transfer to Renovation fund		-16 459	-40 000		
NET BALANCE (Total income less expenditure)	378 461	360 115	-16 041	158 738	81 405
WORKING CAPITAL AT YEAR'S END	2 156 708	2 512 606	2 491 430	2 645 016	2 727 840
EMERGENCY RESERVE FUND	218 981	223 198	228 334	233 486	232 067
TOTAL FUNDING AT YEAR'S END	2 375 689	2 735 804	2 719 763	2 878 501	2 959 907
<u>Financial support to IRF</u>	0	165 000	40 000	50 000	20 000

2007 2008 2009 2010 2011 unaudited

TABLE 4

COMPARISON OF BALANCE SHEETS
(as of 31st December 2007 - 2011)

	I - ASSETS (Euros)				
	2007	2008	2009	2010	2011
CASH INVESTED FOR RETIREMENT FUND					
- Retirement Cash invested (IRF)	2 918 753	3 081 676	3 021 693	2 932 844	3 015 246
- Long term guaranty from IHB funds	165 699	37 752	114 843	27 102	97 927
- Retirement Cash invested (External Pension Plans)	279 015	321 568	476 695	420 491	564 909
- Forth quarter to be paid to external plan	26 911				
	<u>3 390 379</u>	<u>3 440 996</u>	<u>3 613 231</u>	<u>3 380 437</u>	<u>3 678 083</u>
VARIOUS DEBTORS					
- Purchase made in advance	12 531	6 230	9 097	803	1 994
- Outstanding bills	7 696	6 544	5 624	25 811	26 091
- Advance to staff	26 555	12 688	12 833	975	3 680
- Advance to personalized pension plan	90 000				
- Interest to be received	17 746	25 549	2 834	5 772	2 951
- Claim for refunding of VAT	60 896	32 823	48 866	38 591	44 339
	215 423	83 835	79 255	71 952	79 055
OUTSTANDING CONTRIBUTIONS					
- Contributions for the year	260 459	175 356	132 900	345 449	291 451
- Contributions for previous years	126 634	84 604	25 374	87 592	22 830
- Contributions for suspended Member States	15 245	15 245	15 245	15 245	15 245
- Interest due	15 103	12 128	4 607	14 937	2 958
	<u>417 440</u>	<u>287 333</u>	<u>178 126</u>	<u>463 223</u>	<u>332 484</u>
FURNITURES AND INSTRUMENTS					
Value of purchases	321 945	189 750	187 926	207 122	213 140
Depreciation	-283 858	-169 477	-174 360	-183 161	-193 547
LIBRARY					
	36 664	36 664	36 664	36 664	36 664
	74 751	56 937	50 230	60 626	56 257
CASH IN BANK AND ON HAND					
- Bank current accounts	156 280	358 404	536 509	473 445	297 980
- Bank deposit accounts	3 206 032	3 837 869	4 115 432	4 090 220	4 464 281
- Petty cash	4 659	4 071	9 417	7 079	3 455
	<u>3 366 972</u>	<u>4 200 344</u>	<u>4 661 358</u>	<u>4 570 743</u>	<u>4 765 717</u>
ASSETS GRAND TOTAL	<u>7 464 965</u>	<u>8 069 444</u>	<u>8 582 199</u>	<u>8 546 980</u>	<u>8 911 595</u>

	2007	2008	2009	2010	2011 unaudited
II - LIABILITIES (Euros)					
STAFF INTERNAL RETIREMENT FUND					
Internal Retirement fund	1 275 753	1 281 956	1 201 664	1 084 175	987 897
- Provision to ensure pensions to retired staff	1 808 700	1 837 472	1 934 872	1 875 771	1 929 422
Net IRF Liability	<u>3 084 453</u>	<u>3 119 428</u>	<u>3 136 536</u>	<u>2 959 946</u>	<u>2 917 319</u>
- Rights for External Pension Plans	215 926	321 568	476 695	452 113	604 409
- Advance to Future Retirees	90 000				
VARIOUS CREDITORS					
- Guaranty to the IRF	165 699	37 752	114 843	27 102	97 927
- Pension plans NSM		34 116	35 169		29 309
- Provision for doubtful contributions	16 983	16 983	16 983	16 983	16 983
- Personalized pension plans	26 911	28 316		0	0
- A.M.R.R Complementary Retirement Scheme	41 342	40 369	43 433	42 787	45 880
- Accruals (outstanding bills...)	48 506	63 574	76 256	73 294	76 595
- Travel claims & wages	0	0	0	0	3 683
- Deposits received for Conference (stand)	0	10 578		0	19 510
- Various creditors	1 805	1 805	1 805	1 897	1 726
I.H CONFERENCE FUNDS					
- Organization of IH Conferences	131 386	277 726	333 811	373 811	448 042
- Relocation of Directors and P A	76 230	119 230	203 230	373 230	404 922
- Ablos Conference fund	7 033	11 712	11 712	17 027	14 842
- GEBCO fund	12 498	16 370	28 882	41 244	48 457
- Capacity Building fund	246 714	309 478	368 609	393 730	398 658
PRINTING EQUIPMENT FUND	73 793	73 793	73 793	73 793	73 793
RENOVATION FUND	24 007	43 466	86 466	89 466	92 466
PRESENTATION LIBRARY FUND	49 236	40 919	39 679	38 619	48 319
CONTRIBUTIONS RECEIVED IN ADVANCE					
- Received in advance or in excess	776 752	766 456	814 533	693 436	607 226
	<u>2 004 822</u>	<u>2 214 213</u>	<u>2 725 899</u>	<u>2 708 531</u>	<u>3 032 748</u>

	2007	2008	2009	2010	2011 unaudited
II - LIABILITIES (Continuation)					
CAPITAL					
Emergency Reserve Fund	218 981	223 198	228 334	233 486	232 067
Reserves for reevaluation					
- Financial holdings	0		0	0	0
- Physical assets	46 092	46 092	0	0	
Provisions for risks (IRF & suspended MS)	-1 825 683	-1 854 455	-1 951 855	-1 892 754	-1 946 405
Net yearly result	378 458	522 345	363 361	319 637	236 677
Net Members States funds	3 557 841	3 798 623	4 079 924	4 218 133	4 439 189
Permanent funding	2 375 689	2 735 804	2 719 764	2 878 503	2 961 528
LIABILITIES GRAND TOTAL	7 464 964	8 069 444	8 582 199	8 546 980	8 911 595
Cash reserve to continue operations (Fin. Regs Art 18)					
IHB Cash balances less	3 366 972	4 200 344	4 661 358	4 570 743	4 765 717
Advance contributions for next year	-776 752	-766 456	-814 533	-693 436	-607 226
Emergency reserve fund	-218 981	-223 198	-228 334	-233 486	-232 067
Special purpose reserves and funds	-620 898	-892 695	-1 146 182	-1 400 920	-1 529 499
Guaranty to the IRF	-165 699	-37 752	-114 843	-27 102	-97 927
Operating Cash Reserve	1 584 641	2 280 243	2 357 466	2 215 799	2 298 997
Total Actual Operation costs	2 388 304	2 391 919	2 425 150	2 459 448	2 575 464
Total Budget for future operations	2 627 776	2 678 380	2 740 006	2 801 828	2 784 806
Number of weeks of operations	34,5	49,6	50,5	46,8	46
Minimal Requirements (3 months - 13 weeks)	656 944	669 595	685 002	700 457	696 202

2007 2008 2009 2010 2011 unaudited

TABLE 5

INTERNAL RETIREMENT FUND (IRF) EVOLUTION

Situation of the fund on 1st January	3 045 078	3 084 452	3 119 428	3 136 536	2 959 946
Contributions received (Bureau & Staff)	19 294	20 024	20 600	21 161	21 659
Interest received on investments	97 192	134 942	51 003	15 073	25 564
Pensions paid	-152 606	-148 763	-151 895	-153 723	-143 502
Lump sum paid					
Sub-total	3 008 957	3 090 656	3 039 136	3 019 047	2 863 668
<u>Provision for liability</u>					
- at 1st January of the year	-1 777 193	-1 808 700	-1 837 472	-1 934 872	-1 875 771
- at 31 December of the year	1 808 700	1 837 472	1 934 872	1 875 771	1 929 422
Net variation for the year	31 507	28 772	97 400	-59 101	53 651
<u>Valuation of investment during the year</u>					
- at 31 December of the year	563 945	0	0	0	0
- at 1st January of the year	-519 957	0	0	0	0
Net variation for the year	43 988	0	0	0	0
Situation of the fund on 31st December	3 084 452	3 119 428	3 136 536	2 959 946	2 917 319

**PROPOSED IHO FIVE YEAR
BUDGET FOR
THE PERIOD 2013-2017**

**PROPOSED IHO FIVE YEAR BUDGET FOR
THE PERIOD 2013-2017
Submitted by the IHB Directing Committee**

1. INCOME

1.1 Member States' contributions

The proposal for the value of contributions for the next five years is based on the total number of shares as determined from the responses of Member States to Conference Circular Letter (CCL) 9 dated 16 June 2011. The anticipated total number of shares now stands at 694, which is 11 more than the number of shares used to calculate contributions for 2012. This does not include the 4 shares of the two Member States (Dominican Republic and Democratic Republic of Congo) that have been suspended since 1983. Shares of future new Member States or possible alterations in the number of shares of Member States during the 5-year period have not been taken into consideration in preparing the budget.

For the first three years 2013, 2014 and 2015 no increase in the unit share value is proposed. After seven years (2006 – 2012) of zero increase in the unit share value the need to increase the unit share value by 1% in 2016 and by 2% in 2017 has been anticipated. This nominal increase follows the historic rise of the cost of living in Monaco. As has been the case for the past two years, the Directing Committee will strive through efficiencies, economies and judicious programming to avoid these out year increases in share value.

1.2 Interest on bank accounts

Although the interest rates on bank accounts during the past years remained relatively low due to economic developments, during 2011 the Directing Committee managed, through negotiations with banks, to obtain an interest investment income of 35,200 Euros compared with the budgeted 25,000 Euros. Noting current economic forecasts and expecting a similar financial situation to continue for the next five years, the yearly income from the interest on bank accounts has been estimated at 40,000 euros.

2. EXPENDITURE

The expenditure of the Bureau can be subdivided into expenses for salaries and associated personnel costs, operating costs, and capital expenditure of the Bureau. The proportion devoted to personnel costs is about 77% of the total budget; 18% corresponds to current operating costs and 2% to capital expenditure. The remaining 3% is the transfer to Funds established for specific purposes, such as the Conference Fund, Renovation Fund, and Capacity Building Fund.

2.1 Chapter I – Personnel costs

The three main expenses included in the Personnel costs are:

- the salaries for the members of the Directing Committee, Category A, B1 and B2 staff;
- medical expenses; and
- pensions for retired staff.

During the 5-year period the Staff are expected to progress through the normal promotions, i.e. advancements on the salary scale due to time in grade, as contained in the tables attached to the Staff

Regulations, amounting to about 55,000 Euros for the 5-year period. There will also be an expenditure due to the increase of the cost of living in Monaco. Based on the statistics of the past 5 years, this is expected to be on average about 1.5% per year, and will apply to the salaries of all Directors and Staff.

As indicated above the personnel costs (11,596, 857 Euros) account for 77 % of the operational budget, and should be considered as an inflexible expense. 66% of this chapter represents salaries, 18% for medical care, 13% for pensions and the remaining 3% covers various miscellaneous items, such as education grants, home leave, and staff training.

The present number of employees, counting all categories, is 19:

- three Directors;
- four Category A staff;
- one Manager for Finance and Administration;
- nine Category B1 staff; and
- two Category B2 staff.

No changes in employee numbers have been anticipated in the budget during the next 5-year period.

2.2 Chapter II – Current operating costs

18% or approximately 2,697,400 Euros of the operational budget will cover the operating costs. The main items in this chapter are:

- Maintenance costs of the premises, telecommunication and postal charges, auditor's fees and local travel. Although the maintenance of the premises is an obligation of the Organization under Article 3 II of the Host Agreement with the Principality of Monaco, the Government of Monaco continues to generously support the ongoing renovation and renewal of the Bureau. The Bureau, in close cooperation with the Ministry of Public Works, the Environment and Urban Development, is systematically improving facilities in the premises in order to respond to the evolving needs of the Directors and Staff, and the holding of meetings and events. The bulk of the funds required are provided by the Department of External Relations of Monaco. In 2011 62,000 Euros were provided; for 2012 64,500 Euros will be made available;
- Long distance travel has been fixed for each year of the 5-year period and is almost at the same level as 2012;
- Allocation for travel for technical assistance has been set to 50,000 Euros per year for the next 5-year period;
- Consultancy has been set between 60,000 and 70,000 Euros per year for the next 5-year period, in order to support the increasingly technical requirements of the IHO bodies and the work programme.
- No significant changes are foreseen with other items in this chapter beyond an increase of approximately 1.5%-2% per year in line with the expected inflation rate in Monaco.

2.3 Chapter III – Capital Expenditure

2% or 323,200 Euros will be allocated by the operational budget to cover the expenses of this chapter. Main items under this chapter are the purchase of IT equipment and furniture and the depreciation of assets.

3. FUNDS

3.1 Chapter IV – Allocations to funds

Allocations to funds for the 5-year period 2013-2017 have been assumed as follows;

- GEBCO Fund. This fund will include the funds provided every year by the Government of Monaco for the maintenance and other activities of GEBCO. For 2012 the amount provided is 8,100 Euros; this is anticipated to remain at the same level for the next 5-year period;
- Printing Fund. No requirement for an allocation to this fund is foreseen, which remains at the level of 73,793 Euros;
- Renovation Fund. 3,000 Euros are planned to be allocated, resulting in an accumulated total of 15,000 Euros by 2017;
- Conference Fund. A total of 200,000 Euros are planned to be allocated for the 5-year period, to support the 5th Extraordinary Hydrographic Conference/Assembly in 2014 and the XVIIIth I.H. Conference/Assembly in 2017;
- Directors' and Category A relocation fund. A total of 37,500 Euros is planned for the 5-year period to cover the anticipated changes in Category A staff and Directors;
- Capacity Building Fund. A total of 125,000 Euros are planned to be allocated from the IHO budget over the 5-year period.

4. TABLES FOR THE PROPOSED 2013-2017 BUDGETS

Annex A presents the details of the budget for the 5-year period 2013-2017.

ANNEX A

ORGANISATION HYDROGRAPHIQUE INTERNATIONALE
PREVISIONS BUDGETAIRES POUR 2013-2017
TABLEAU I - REVENUS - (Euros)

INTERNATIONAL HYDROGRAPHIC ORGANISATION
BUDGET ESTIMATES FOR 2013-2017
TABLE I - INCOME - (Euros)

	Adopted Estimates 2012 Budget approuvé	Proposed Estimates 2013 Budget budget	Proposed Estimates 2014 Budget budget	Proposed Estimates 2015 Budget budget	Proposed Estimates 2016 Budget budget	Proposed Estimates 2017 Budget budget
Approved Percentage of increase		(%)				
Percentage of increase proposed	0,00	(%)	0,00	0,00	0,00	1,00
Previous Number of shares						
New/Restored Member States						
Modification of tonnages						
Final number of shares	680		694	694	694	694
Unit share value	3984,48		3984,48	3984,48	3984,48	4024,32
A. CONTRIBUTIONS						
Contributions	698		2 781 167			
provision for suspended Member States	-4		-15 938			
Basis for budget estimates	2 709 446	694	2 765 229	2 765 229	2 765 229	2 792 881
						2 820 810
B. SALES OF PUBLICATIONS	1 500		1 500	1 500	1 500	1 500
Ventes de publications						
C. ADVERTISEMENTS IN PUBLICATIONS	0		0			
Annonces dans les publications						
D. INTEREST ON BANK ACCOUNTS	30 000		40 000	40 000	40 000	40 000
Intérêts sur comptes en banques						
E. EXTRAORDINARY INCOME	8 200		8 200	8 200	8 200	8 200
Revenus exceptionnels						
F. INTERNAL TAX						
Impôt interne	161 860		170 151	171 853	176 578	181 876
	-----		-----	-----	-----	-----
	2 911 006		2 985 080	2 986 782	2 991 508	3 024 457
	=====		=====	=====	=====	=====
						3 058 297

Annex A

TABLE II A : DETAILED EXPENDITURE - Détail des dépenses

CHAPTERS AND ITEMS	Dépenses	Proposition	Proposition	Proposition	Proposition
	estimées	de budget	de budget	de budget	de budget
	2012	2013	2014	2015	2016
	Estimated	Proposed	Proposed	Proposed	Proposed
	Expenses	Estimates	Estimates	Estimates	Estimates
	Euros	Euros	Euros	Euros	Euros
I. PERSONNEL COSTS					
a) Salaries - Directing Committee	451 000	460 020	466 920	471 590	478 663
b) Salaries - Category A	581 500	593 130	602 027	608 047	617 168
- Translators	134 700	137 394	139 455	140 849	142 962
- General Services (B & C)	451 400	460 428	467 334	472 008	479 088
Overtime for B & C Categories (Costs dependent on Salaries)	6 000	6 120	6 100	6 100	6 192
c) Annual Bonus (B & C Categories only)	37 617	38 369	38 945	39 334	39 924
d) Payment to Retirement schemes	330 890	337 508	342 571	345 996	351 186
e) Insurances based on wages	15 425	15 940	16 099	16 260	16 650
f) Medical (GAN premiums)	69 638	73 149	70 000	70 000	70 000
g) Family Allowances	11 500	11 500	11 000	11 000	11 000
h) Education Grants	10 700	37 633	35 000	35 000	35 000
(Costs independent of Salaries)					
i) Medical claims paid	70 000	85 000	85 000	85 000	85 000
j) Medical - refunds from GAN	-15 000	-35 000	-35 000	-35 000	-35 000
k) Home Leave	9 000	16 000	15 000	15 000	15 000
l) Miscellan. Personnel Expenses	5 100	15 000	12 000	12 000	12 000
(Controllable Personnel costs)					
m) Salaries - Temporary staff	6 250	3 000	3 000	2 000	2 000
n) IHB Staff training	10 000	11 000	8 000	8 000	8 000
	-----	-----	-----	-----	-----
	2 185 720	2 266 192	2 283 451	2 303 184	2 334 833
					2 409 197

Annex A

TABLE II A : DETAILED EXPENDITURE (contd.)- Détail des dépenses (suite)

TABLE II A - Continued			Dépenses estimées 2012 Estimated Expenses Euros	Proposition de budget 2013 Proposed Estimates Euros	Proposition de budget 2014 Proposed Estimates Euros	Proposition de budget 2015 Proposed Estimates Euros	Proposition de budget 2016 Proposed Estimates Euros	Proposition de budget 2017 Proposed Estimates Euros
CHAPTERS	AND	ITEMS						
II.		CURRENT OPERATING COSTS						
		(Maintenance, communications, etc...)						
	a)	Maintenance of building	59 600	50 000	50 000	50 000	50 000	5 000
		Multirisk insurance	2 200	2 700	2 700	2 700	2 700	2 700
		Maintenance of IT equipment	39 200	55 000	50 000	50 000	50 000	50 000
	b)	Office Stationery	8 500	10 000	10 200	10 000	10 000	10 200
	c)	Postage, telephone, telefax	43 000	40 000	40 000	40 000	40 000	40 000
	d)	Local Travel	3 300	3 300	3 300	3 300	3 300	3 300
	e)	Bank Charges	6 000	6 000	6 000	6 000	6 000	6 000
	f)	Consultancy Expenses (Others than Auditors)	43 000	70 000	70 000	60 000	61 000	65 000
	g)	Auditors fees	4 300	4 400	4 400	4 400	4 400	4 400
	h)	Public Relations	21 000	15 000	15 000	15 000	15 000	15 000
	i)	Miscellan. Operating Expenses	1 000	1 000	1 000	1 000	1 000	1 000
		(Travel costs)						
	j)	Technical Assistance (Progr. 2 only)	45 000	52 000	52 000	50 000	50 000	50 000
	k)	Long Distance Travel (All Progr. except 2)	230 000	235 000	235 000	235 000	235 000	235 000
		(Publications costs)						
	l)	I.H. Review	12 000	12 000	12 000	12 000	12 000	12 000
	m)	Other publications	13 935	2 000	2 000	2 000	2 000	2 000
			-----	-----	-----	-----	-----	-----
			532 035	558 400	553 600	541 400	542 400	501 600

Annex A

TABLE II A : DETAILED EXPENDITURE (contd.)- Détail des dépenses (suite)

CHAPTERS AND ITEMS	Dépenses estimées 2012	Proposition de budget 2013	Proposition de budget 2014	Proposition de budget 2015	Proposition de budget 2016	Proposition de budget 2017
	Estimated Expenses Euros	Proposed Estimates Euros	Proposed Estimates Euros	Proposed Estimates Euros	Proposed Estimates Euros	Proposed Estimates Euros
III. CAPITAL EXPENDITURE						
a) Purchase of IT equipment	35 000	35 000	30 000	30 000	30 000	30 000
Depreciation of fixed assets	20 000	20 000	20 000	20 000	20 000	20 000
Purchase of furniture & other equipment	11 000	13 000	13 000	12 000	12 000	12 000
b) Purchase Publications & Binding	1 051	1 300	1 300	1 200	1 200	1 200
	-----	-----	-----	-----	-----	-----
	67 051	69 300	64 300	63 200	63 200	63 200
=====	=====	=====	=====	=====	=====	=====
ANNUAL OPERATING COSTS	2 784 806	2 893 892	2 901 351	2 907 784	2 940 433	2 973 997
=====	=====	=====	=====	=====	=====	=====
IV. GEBCO	8 200	8 200	8 200	8 200	8 200	8 200
V. PRINTING FUND ALLOCATION	0	0	0	0	0	0
VI. RENOVATION FUND ALLOCATION	3 000	3 000	3 000	3 000	3 000	3 000
VII. CONFERENCE FUNDS ALLOCATION	40 000	40 000	40 000	40 000	40 000	40 000
VIII. RELOCATION OF DIRECTORS AND CATEGORY A STAFF	20 000	7 500	7 500	7 500	7 500	7 500
IX CAPACITY BUILDING FUND ALLOCATION	55 000	25 000	25 000	25 000	25 000	25 000
	-----	-----	-----	-----	-----	-----
TOTAL EXPENDITURE	2 911 006	2 977 592	2 985 051	2 991 483	3 024 133	3 057 697
	=====	=====	=====	=====	=====	=====

Annex A

ORGANISATION HYDROGRAPHIQUE INTERNATIONALE
PREVISIONS BUDGETAIRES POUR 2013-2017
TABLEAU II - DEPENSES - (Euros)

INTERNATIONAL HYDROGRAPHIC ORGANIZATION
BUDGET ESTIMATES FOR 2013-2017
TABLE II - EXPENDITURE - (Euros)

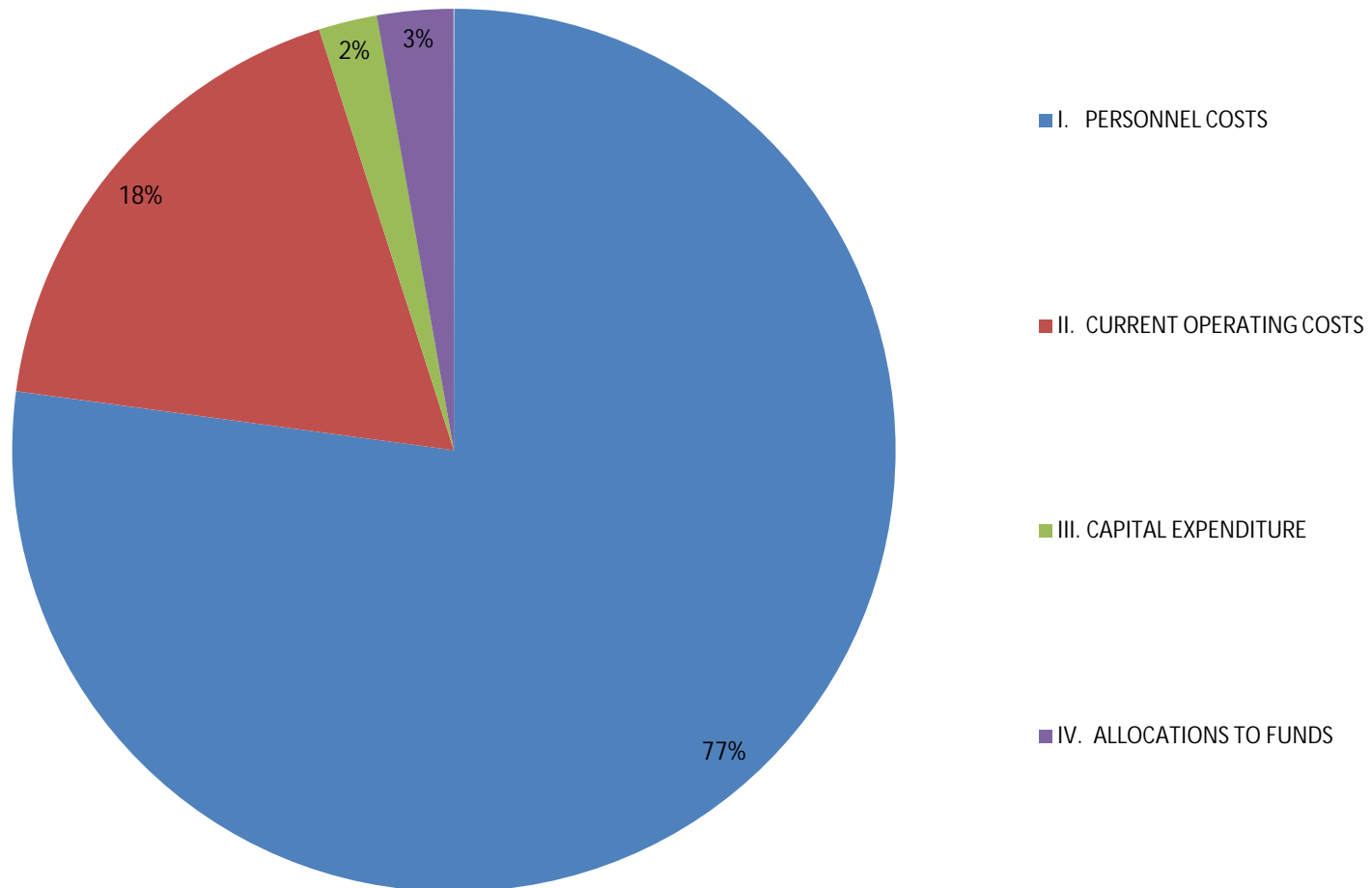
CHAPTER - CHAPITRE	Dépenses estimées 2012 Estimated Expenses Euros	Proposition de budget 2013 Proposed Estimates Euros	Proposition de budget 2014 Proposed Estimates Euros	Proposition de budget 2015 Proposed Estimates Euros	Proposition de budget 2016 Proposed Estimates Euros	Proposition de budget 2017 Proposed Estimates Euros
I. PERSONNEL COSTS DEPENSES DE PERSONNEL Salaries Directing Committee Salaries Other staff Social charges Benefits and Pensions Controllable Personnel cost	2 185 720	2 266 192	2 283 451	2 303 184	2 334 833	2 409 197
II. CURRENT OPERATING COSTS DEPENSES DE GESTION COURANTE Maintenance, communications, etc.. Consulting Travels Publications	532 035	558 400	553 600	541 400	542 400	501 600
III. CAPITAL EXPENDITURE DEPENSES DE CAPITAL	67 051	69 300	64 300	63 200	63 200	63 200
IV. GEBCO FONDS D'IMPRESSION	8 200	8 200	8 200	8 200	8 200	8 200
V. RENOVATION FUND ALLOCATION	3 000	3 000	3 000	3 000	3 000	3 000
VI. CONFERENCE FUND ALLOCATION FONDS MIS EN RESERVE POUR LA CONFERENCE	40 000	40 000	40 000	40 000	40 000	40 000
VII. RELOCATION OF DIRECTORS ALLOCATION FONDS POUR LE DEMENAGEMENT DES DIRECTEURS	20 000	7 500	7 500	7 500	7 500	7 500
VIII. CAPACITY BUILDING FUND ALLOCATION	55 000	25 000	25 000	25 000	25 000	25 000
	2 911 006	2 977 592	2 985 051	2 991 483	3 024 133	3 057 697

ORGANISATION HYDROGRAPHIQUE INTERNATIONALE
PREVISIONS BUDGETAIRES POUR 2013-2017
TABLEAU III : RECAPITULATION BUDGETAIRE - (Euros)

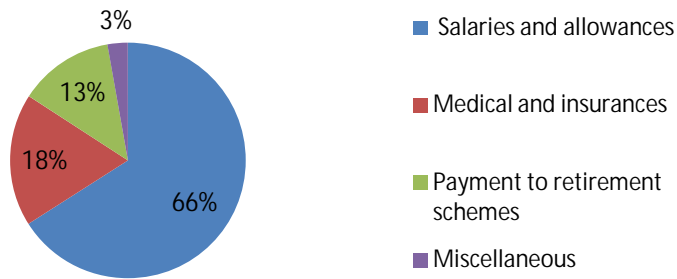
INTERNATIONAL HYDROGRAPHIC ORGANIZATION
BUDGET ESTIMATES FOR 2013-2017
TABLE III : BUDGET SUMMARY - (Euros)

CHAPTERS AND ITEMS	Dépenses estimées 2012 Estimated Expenses Euros	Proposition de budget 2013 Proposed Estimates Euros	Proposition de budget 2014 Proposed Estimates Euros	Proposition de budget 2015 Proposed Estimates Euros	Proposition de budget 2016 Proposed Estimates Euros	Proposition de budget 2017 Proposed Estimates Euros	
Net Expenditure - Dépenses nettes	2 911 006	2 977 592	2 985 051	2 991 483	3 024 133	3 057 697	
Income - Revenus	2 911 006	2 985 080	2 986 781	2 991 507	3 024 457	3 058 296	
Budget Excess - Excédent budgétaire	0	7 488	1 730	24	324	599	
Budget Deficit - Déficit budgétaire	0	0	0	0	0	0	
Allocation to dedicated funds	0	0	0	0	0	0	
Extraordinary items & exchange operations	0	0	0	0	0	0	
Impact on Working Capital - Incidence fonds de roulement	0	0	0	0	0	0	
Effect on capital - Effet sur le capital	0	7 488	1 730	24	324	599	
Net balance for the 5 year's period							10 165

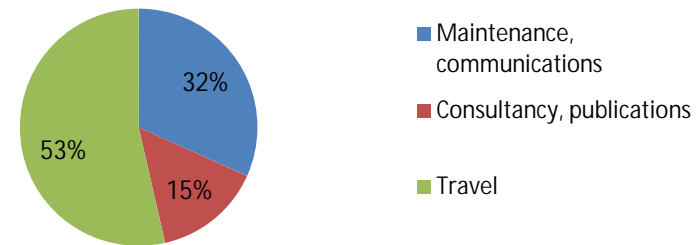
YEARLY BUDGET EXPENDITURE (15 035 957)



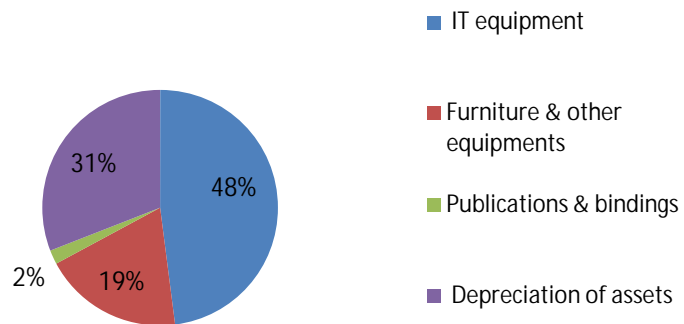
CHAPTER I PERSONNEL COSTS (11 596 857)



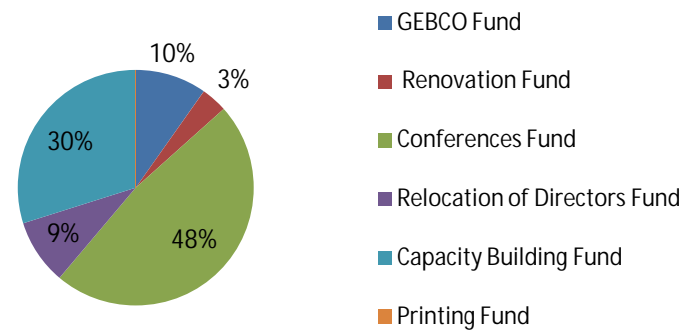
CHAPTER II CURRENT OPERATING COSTS (2 697 400)



CHAPTER III CAPITAL EXPENDITURE (323 200)



CHAPTER IV ALLOCATION TO FUNDS (418 500)



PROPOSED IHO BUDGET FOR 2013

INTERNATIONAL HYDROGRAPHIC ORGANISATION
 BUDGET FOR 2013
 TABLE I - INCOME - (Euros)

Proposed Estimates 2011	Actual Income 2011	Adopted Estimates 2012		Proposed Estimates 2013
0,00	0,00	0,00	Percentage of increase proposed (%)	0,00
			Final number of shares	694
683,0	683,0	694,0	Unit share value	3984,48
3 984,48	3 984,48	3984,48		
2 721 400	2 721 400	2 765 229	A. CONTRIBUTIONS	
			provision for suspended Member States	698
			Basis for budget estimates	-4
				2 781 167
				-15 938
				2 765 229
1 500	85	1 500	B. SALES OF PUBLICATIONS	1 500
0	0	0	C. ADVERTISEMENTS IN PUBLICATIONS	0
25 000	35 205	40 000	D. INTEREST ON BANK ACCOUNTS	40 000
8 100	8 100	8 200	E. EXTRAORDINARY INCOME	8 200
			F. INTERNAL TAX	
163 460	160 961	170 151		170 151
-----	-----	-----		-----
2 919 460	2 925 751	2 985 080		2 985 080
=====	=====	=====		=====

BUDGET ESTIMATES FOR 2013

TABLE II A : DETAILED EXPENDITURE 5Euros)

Approved Budget 2011 Euros	Actual expenditure 2011 Euros	Approved budget 2012 Euros	CHAPTERS AND ITEMS	Proposed Estimates 2013 Euros
459 000	438 257	451 000	I. PERSONNEL COSTS	460 020
589 500	577 334	581 500	a) Salaries - Directing Committee	593 130
134 700	133 044	134 700	b) Salaries - Category A	137 394
451 400	423 701	451 400	- Translators	460 428
6 000	4 765	6 000	- General Services (B & C)	6 120
			Overtime for B & C Categories (Costs dependent on Salaries)	
37 617	33 152	37 617	c) Annual Bonus (B & C Categories)	38 369
330 890	325 281	330 890	d) Payment to Retirement schemes	337 508
15 425	15 425	15 425	e) Insurances based on wages	15 940
69 638	62 711	69 638	f) Medical (GAN premiums)	73 149
11 500	4 861	11 500	g) Family Allowances	11 500
11 500	741	10 700	h) Education Grants	37 633
			(Costs independent of Salaries)	
70 000	121 048	70 000	i) Medical claims paid	85 000
-15 000	-50 342	-15 000	Medical - refunds from GAN	-35 000
9 000	8 612	9 000	j) Home Leave	16 000
5 100	25 185	5 100	k) Miscellan. Personnel Expenses	15 000
			(Controllable Personnel costs)	
6 250	0	6 250	l) Salaries - Temporary staff	3 000
10 000	2 067	10 000	m) IHB Staff training	11 000
-----	-----	-----		-----
2 202 520	2 125 842	2 185 720	TOTAL CHAPTER I	2 266 191

BUDGET ESTIMATES FOR 2013

TABLE II A (continued): DETAILED EXPENDITURE

Approved Budget 2011	Actual expenditure 2011	Approved budget 2012	CHAPTERS AND ITEMS	Proposed Estimates 2013
Euros	Euros	Euros		
II. CURRENT OPERATING COSTS				
59 600	44 098	59 600	a) Maintenance of building	50 000
2 200	2 494	2 200	Multirisk insurance	2 700
39 200	48 401	39 200	Maintenance of IT equipments	55 000
8 500	8 954	8 500	b) Office Stationery	10 000
43 000	35 597	43 000	c) Postage, telephone, telefax	40 000
3 300	2 719	3 300	d) Local Travel	3 300
6 000	4 057	6 000	e) Bank Charges	6 000
43 000	7 000	43 000	f) Consultancy (Others than Auditors)	70 000
4 300	4 400	4 300	g) Auditors fees	4 400
21 000	14 916	21 000	h) Public Relations	15 000
1 000	1 118	1 000	i) Miscellan. Operating Expenses	1 000
(Travel costs)				
45 000	44 457	45 000	j) Cap. Building (Progr. 3, Elem 3.3-3.5)	52 000
230 000	189 034	230 000	k) Long Distance (Others, except just above)	235 000
(Publications costs)				
12 000	10 000	12 000	l) I.H. Review	12 000
13 935	1 440	13 935	m) Other publications	2 000
-----	-----	-----		-----
532 035	418 685	532 035	TOTAL CHAPTER II	558 400

BUDGET ESTIMATES FOR 2013

TABLE II A (continued): DETAILED EXPENDITURE

Approved Budget 2011	Actual expenditure 2011	Approved budget 2012	CHAPTERS AND ITEMS	Proposed Estimates 2013
Euros	Euros	Euros		Euros
			III. CAPITAL EXPENDITURE	
35 000	20 932	35 000	a) Purchase of IT equipments	35 000
11 000	6 477	11 000	b) Furniture & other equipments	13 000
1 273	983	1 051	c) Purchase Publications & Binding	1 300
20 000	10 387	20 000	d) Depreciation of fixed assets	20 000
-----	-----	-----		-----
67 273	38 779	67 051		
=====	=====	=====		=====
2 801 828	2 583 306	2 784 806	ANNUAL OPERATING COSTS	2 893 891
=====	=====	=====		=====
			IV. ALLOCATION TO FUNDS	
8 100	8 100	8 200	- a) GEBCO Fund	8 200
3 000	3 000	3 000	- b) Renovation Fund	3 000
30 000	30 000	40 000	- c) Conferences Fund	40 000
20 000	20 000	20 000	- d) Relocation of Directors Fund	7 500
55 000	55 000	55 000	- e) Capacity Building Fund	25 000
0	0	0	- f) Printing Fund	
-----	-----	-----		-----
116 100	116 100	126 200		
-----	-----	-----		-----
2 917 928	2 699 406	2 911 006	TOTAL EXPENDITURE	2 977 591
=====	=====	=====		=====

BUDGET ESTIMATES FOR 2013

TABLE III - BUDGET SUMMARY - (Euros)

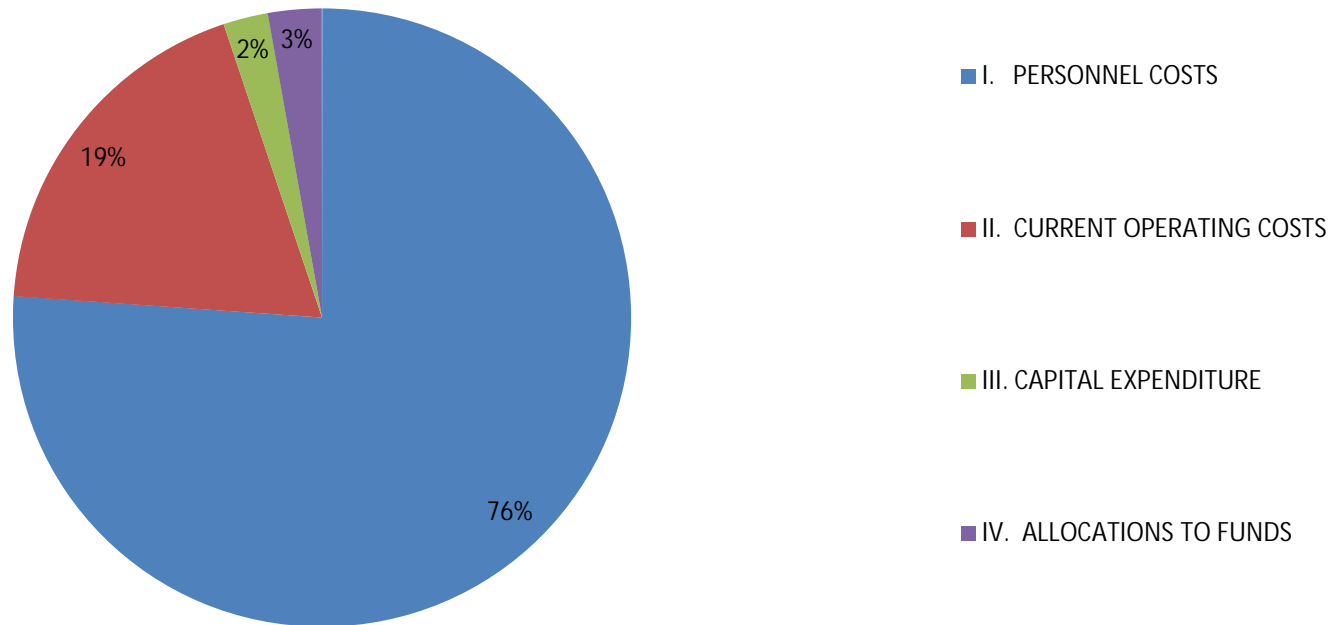
Approved Budget 2011	Actual expenditure 2011	Approved budget 2012	CHAPTER	Proposed Estimates 2013
Euros	Euros	Euros		Euros
			I. PERSONNEL COSTS	
2 202 520	2 125 842	2 185 720	Salaries Directing Committee	2 266 191
			Salaries Other staff	
			Social charges	
			Benefits and Pensions	
			Controllable Personnel cost	
532 035	418 685	532 035	II. CURRENT OPERATING COSTS	558 400
			Maintenance, communications, etc..	
			Consulting	
			Travels	
			Publications	
67 273	38 779	67 051	III. CAPITAL EXPENDITURE	69 300
			IV. ALLOCATIONS TO FUNDS	
8 100	8 100	8 200	- GEBCO Fund	8 200
3 000	3 000	3 000	- Renovation Fund	3 000
30 000	30 000	40 000	- Conferences Fund	40 000
20 000	20 000	20 000	- Director's Relocation Fund	7 500
55 000	55 000	55 000	- Capacity Building Fund	25 000
0	0	0	- Printing Fund	0
-----	-----	-----		-----
2 917 928	2 699 406	2 911 006		2 977 591
				=====

BUDGET ESTIMATES FOR 2013

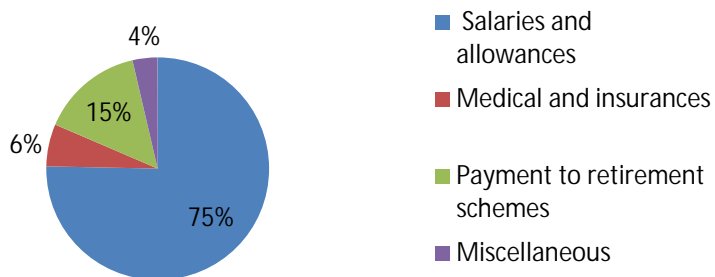
TABLE III : BUDGET SUMMARY - (Euros)

Approved Budget 2011	Actual expenditure 2011	Approved budget 2012	Proposed Estimates 2013
Euros	Euros	Euros	Euros
2 917 928	2 699 406	2 911 006	Net Expenditure 2 977 591
2 919 460	2 925 751	2 911 006	Income 2 985 080
----- 1 532	----- 226 344	----- 0	----- Budget Excess 7 489
0	0	0	Budget Deficit 0
	0	0	Support to the IRF 0
----- 1 532	----- 226 344	----- 0	----- Effect on capital 7 489
=====	=====	=====	=====

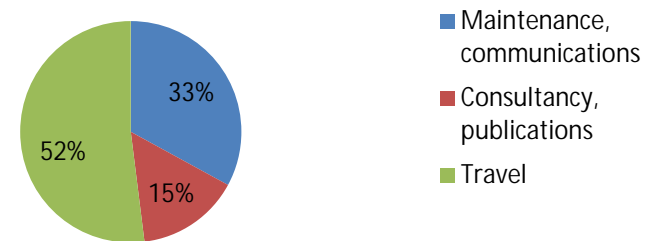
YEARLY BUDGET EXPENDITURE (2 977 592)



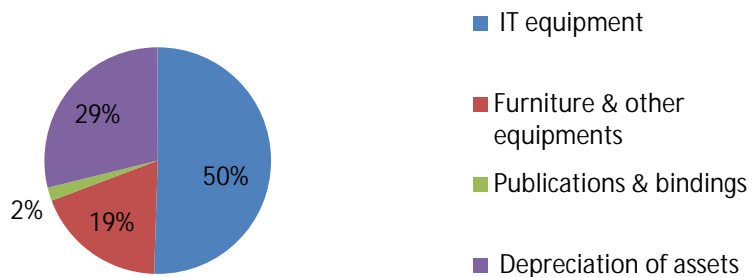
CHAPTER I PERSONNEL COSTS (2 266 192)



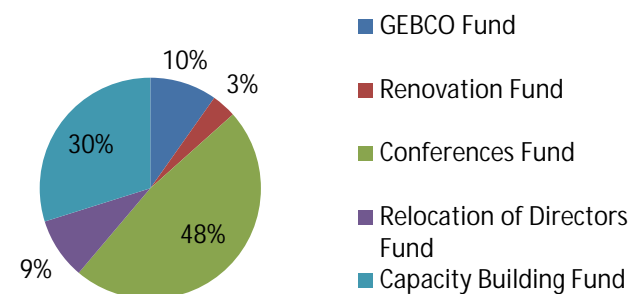
CHAPTER II CURRENT OPERATING EXPENSES (558 400)



CHAPTER III CAPITAL EXPENDITURE (69 300)



CHAPTER IV ALLOCATION TO FUNDS (83 700)



REPORT OF THE FINANCE COMMITTEE

REPORT OF THE FINANCE COMMITTEE

A meeting of the Finance Committee commenced at 0930 on Saturday 21 April 2012. Ten Member States, Chile, Tunisia, Turkey, Latvia, Japan, Spain, Saudi Arabia, USA, Republic of Korea, and Democratic People's Republic of Korea, were present. In spite of the small number of participants, it was decided to progress with the meeting.

The President of the Directing Committee opened the meeting and welcomed the participants. He announced that, as indicated in CL 34/2012, the Chairman of the Finance Committee, Mr Cottalorda retired in March 2012. Furthermore, because of sickness, the Vice-Chairman, Mr Laisne-Woll, was unable to attend the meeting, as advised by France. Member States had been invited to propose candidates for Chairman but no proposals had been forthcoming. It was therefore agreed by Member States that the President of the Directing Committee should chair the meeting.

The Agenda for the meeting was adopted without any change.

The Agenda included the consideration of the following items:

- Finance Report of the IHO 2007-2011
- Proposed IHO Five-Year Budget for the period 2013-2017
- IHO Budget for 2013
- Appointment of the External Auditor
- Table of tonnages for the IHO contributions, number of shares and votes for the next five-year period, 2013-2017
- Chair and Vice-Chair of the Finance Committee for the period 2012-2017

1. EXAMINATION OF THE FINANCE REPORT FOR THE PERIOD 2007-2011 (CONF.18/F/01)

In introducing the Report, the President of the Directing Committee and Chair of this meeting of the Finance Committee, highlighted certain points and, in particular, the following:

- Throughout the five-year budget period and despite the recent global financial crisis, total income had exceeded total expenditure in all years.
- The Bureau had succeeded in constraining costs, maintaining the Organization's funds, increasing the operating cash reserve and increasing the IHO Internal Retirement Fund.
- The number of shares had increased from 652 in 2007 to 683 in 2011, due to Qatar becoming a new Member State of the Organization in May 2007 with five shares, Ireland in June 2007 with three shares, and Suriname re-joining the Organization in 2008 with two shares.
- There was no increase in the share value for the period 2007-2011. The share value has remained unchanged for the last eight years at 3 984.48 Euros, as was fixed in 2005.
- Payment of contributions had generally been good throughout the period, with 50% of Member States paying 60% of their contributions by the end of April each year and receipts averaging 91.35% of the assessed amount at the end of the year.
- The total estimated income for the period 2007-2011 was 14,443,626 Euros compared to the actual income received during the period of 14,693,891 Euros. However, income from publications and interest on bank accounts had fallen following respectively the decision to make publications downloadable free of charge through the IHO website, and the general decline in interest rates.

The delegations present congratulated the Bureau on its prudent and effective management over the five-year period 2007-2011, which was particularly commended in the light of the global financial situation and the difficulties experienced by many other international organizations.

In conclusion, the Organization's financial situation was described as very satisfactory.

2. EXAMINATION OF THE PROPOSED IHO FIVE-YEAR BUDGET FOR THE PERIOD 2013-2017 (CONF.18/F/02/Rev.1)

The President of the Directing Committee introducing the proposed IHO 5-year budget for 2013-2017, drew attention to the information set out in document CONF.18/F/02/Rev01 concerning the various budget components, namely: income, consisting of Member States' contributions and interest on bank accounts; expenditure, subdivided into personnel costs, operating costs and capital expenditure, and allocation to funds. Precise figures were contained in Annex A to the document.

The comments made by those delegates present concerned the following point:

The Republic of Korea noted that, under the proposed budget, the planned allocation to the IHO Capacity Building Fund amounted to 125 000€ representing a decrease of 85% from the amount allocated to the Fund in 2007-2011. To which the President of the Directing Committee responded that, in developing the proposed budget for Capacity Building, the successes achieved during the past five years had been taken into account. On that basis, the funding currently available with the allocations from the budget was deemed to be sufficient. It was also possible that in future years, transfers could be made during the budget period from possible surpluses of the budget, based on decisions that will be taken by the Capacity Building Sub-Committee and Member States.

3. EXAMINATION OF THE IHO BUDGET FOR 2013 (CONF.18/F/03)

The President of the Directing Committee, introducing the proposed IHO budget for 2013, drew attention to the figures contained in the tables set out in document CONF.18/F/03, relating to: income estimated at 2,985,080€; detailed expenditure with respect to personnel costs, current operating costs, capital expenditure and allocation of funds, estimated, respectively, to account for 76%, 19%, 2% and 3% of the budget. The proposed budget is essentially balanced. As already mentioned, Member States would receive the budget reflecting any possible changes that Member States would report for their consideration and approval at the end of the year.

4. REAPPOINTMENT OF THE AUDITOR

The President of the Directing Committee pointed out that he had received a letter from the present external Auditor (Cabinet Morel) seeking their firm's re-appointment. Taking into account that the Bureau was extremely satisfied with the quality of the Auditor's services, he proposed to the delegates to reappoint this firm for a further period of 5 years. This was agreed. A few delegations raised the issue of considering other candidates. USA indicated that it may be appropriate to follow the 2-term procedure that has been established by the UN. The Chairman answered, acknowledging the value of the comments and indicating that in accordance with Article 20 of the Financial Regulations, although the terms of appointment shall be for a period of five years, it is subject to annual confirmation decided by the Directing Committee, the Chairman and Vice-Chairman of the Finance Committee. This issue should be reconsidered before the next International Hydrographic Conference. Participants agreed with this position.

5. TABLE OF TONNAGES FOR THE IHO CONTRIBUTIONS, NUMBER OF SHARES AND VOTES (CONF.18/G/03 - Rev1)

In implementing Article 6 (a) of the Financial Regulations, Member States were asked through CCL09 to provide the Bureau with the tonnage of their fleet, calculated in accordance with Article 5 of the Financial Regulations.

This table of tonnages, and that of shares and votes, shall be submitted to the Conference for approval and shall enter into force on 1st January of the year following the Conference, in accordance with Article 6(b) of the Financial Regulations.

Twenty-three Member States have not responded to CCL09 and to the subsequent reminders. Some were asking for more time as the issue was under the responsibility of other national agencies.

IHO Resolution R2.1 dated 1996 is applicable to Member States which do not provide their tonnage. In accordance with this Resolution, the Bureau should calculate the tonnage obtained from the Lloyds for non-naval vessels and from a Naval Almanac for the naval vessels.

Considering the above, noting that the table of tonnages, shares and votes will come into effect on 1st January 2013, and in order to give more time to Member States to reply, it is proposed that the Conference will task the Bureau to finalize and complete the table in communication with Member States who have not replied and pass it to Member States for approval before 1st July 2012.

6. CHAIR AND VICE-CHAIR OF THE FINANCE COMMITTEE

According to Article 11.c of the General Regulations of the IHO, the Chair shall be elected at the first plenary session of the Conference. The Directing Committee informed the participants that a letter had been received from Monaco, indicating that it is prepared to continue chairing the Finance Committee and making available its General Controller of Finance.

UKHO informed the Bureau that Mr Andrew Millard, its Chief Finance Officer, is nominated for the post of Vice-Chairman of the Finance Committee. France withdrew its nomination in favor of the UK representative.

7. OTHER BUSINESS

The Directing Committee will be seeking new membership for the Finance Committee.

The Chairman and the members of the Directing Committee thanked the delegations for their active participation and wished a fruitful conference to all the participants.

ELIGIBILITY REPORT

REPORT OF THE ELIGIBILITY COMMITTEE AND RECOMMENDATION**COMMITTEE MEMBERSHIP**

Dr. Mathias JONAS (Germany), Chairman
Captain Eduardo LAZO (Peru)
Captain Carlos VENTURA SOARES (Portugal)
Ambassador Ji-ah PAIK (Republic of Korea)
Captain Gerd GLANG, NOAA (United States of America)

Secretary: Mr Steve SHIPMAN, Assistant Director IHB

MEETING

The Eligibility Committee met on Wednesday 25 April 2012. The Chairman explained that the Committee's task was to refer to the relevant article of the General Regulations and to ascertain the eligibility of the eight (8) candidates for election to the Directing Committee of the International Hydrographic Bureau, having given due consideration to their Statements of Service. The Committee was informed that Captain Abri Kampfer (South Africa) had withdrawn his candidature for the post of Director at the International Hydrographic Bureau and that therefore eight (8) candidates remained.

CANDIDATES

The statements of service, as required by article 39 of the General Regulations, of all eight (8) candidates had been distributed by Conference Circular Letters and as C ONF. 18/E/01. The Committee Members had reviewed these documents.

RECOMMENDATION

The Committee Members were unanimous in their conclusion that all eight (8) candidates nominated for the election to the Directing Committee of the IHB are eligible and therefore recommend to the Conference that they should be confirmed as eligible for election to the Directing Committee for the period 2012-2017.