

7<sup>TH</sup> MEETING OF THE IHO-INTER REGIONAL COORDINATION COMMITTEE  
IHO IRCC7

MEXICO CITY, 01-03 JUNE 2015

Report of the IRCC Chair

**Submitted by:** IRCC Chair

**Executive Summary:** This paper provides a report related to IRCC activities.

# Inter-Regional Coordination Committee

## Annual Report 2014



## Contents

<b>Introduction .....</b>	<b>3</b>
<b>1. Co-operation with Member States (Element 3.1).....</b>	<b>3</b>
<b>2. Increase participation by non Member States (Element 3.2) .....</b>	<b>9</b>
<b>3. Capacity building management (Element 3.3) .....</b>	<b>9</b>
<b>4. Capacity building assessment (Element 3.4).....</b>	<b>11</b>
<b>5. Capacity Building Provision (Element 3.5).....</b>	<b>12</b>
<b>6. Coordination of global surveying and charting (Element 3.6).....</b>	<b>15</b>
<b>7. Maritime Safety Information (Element 3.7) .....</b>	<b>17</b>
<b>8. Ocean Mapping Programme (Element 3.8) .....</b>	<b>20</b>

## **Introduction**

The International Hydrographic Organization (IHO) established the Inter Regional Coordination Committee (IRCC) in 2009 within the new structure of the organization to promote and coordinate those activities that might benefit from a regional approach.

In general terms the principal objectives of the IRCC 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 programs;
- 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.

This report provides an overview of IRCC related activities as mandated by Programme 3 of the IHO Work Programme 2014. The following sections are organized according to the elements of the Programme.

### **1. Co-operation with Member States (Element 3.1)**

#### **1.1. Sixth IRCC Meeting (Task 3.1.0)**

The sixth meeting of the IRCC took place in Paris, France, hosted by the French HO (SHOM) on 19 and 20 May. The meeting was attended by the Chairs or designated representatives of the 15 RHCs, the IRCC subordinate bodies and 26 observers. A total of 49 participants from 21 countries were present.

The IRCC examined the reports and activities of the RHCs and its subordinate bodies, the current status of hydrographic surveys and nautical charts, the progress of ENC schemes and the IHO ENC catalogue, the Capacity Building programme, Worldwide ENC Database (WEND) related issues and the decisions of other bodies and organizations affecting its work.

The Chair led a debate on how to enhance RHC cooperation and 4 areas of useful collaboration were highlighted:

- USCHC to share the lessons learned from the US-Canada transboundary (agreement) project with IRCC.
- EAthC to report progress in the use of an Internet portal in the EAthC region aiming at sharing MSI information.
- EAHC to share experiences gained in handling natural disasters (ref. IHO Resolution 1/2005) that recently occurred in the EAHC region.
- SWPHC to share experience gained in developing the risk assessment tool, including activities related to engaging decision makers and donor agencies.

The Committee endorsed a revision of its Terms of Reference (ToR) and Rules of Procedure (RoP) in order to provide clarity on the role of the Vice-Chair and the inclusion of the Chairs of the WENDWG and IHO-EU Network WG as members of the Committee. The revised ToR and RoP were subsequently approved by the Member States (further details in IHO CL 58 and 71/2014).

The IRCC acknowledged the progress made with Capacity Building (CB) activities and acknowledged the draft revised IHO Capacity Building Strategy which was subsequently

approved by the 5<sup>th</sup> Extraordinary International Hydrographic Conference (EIHC-5).

The Committee reviewed the activities of the WEND Working Group (WENDWG) and the continuing progress towards the full implementation of the WEND Principles and the associated Guidelines. ENC coverage, the quality and reliability of the information in ENCs and the harmonization of current ENCs with the corresponding paper charts, overlapping ENCs and developments of an IHO WENC (or RENC) were extensively discussed by the Committee. The WENDWG was tasked to assess the impact and consistency of updates for ENCs and paper chart (coverage and quality) and to report on the potential for implementing an IHO WENC Concept. The Committee also approved the WENDWG Work Programme for its future activities.

IRCC endorsed draft revisions to IHO publications *S-5 - Standards of Competence for Hydrographic Surveyors* (Ed. 11.1.0) and *S-8 - Standards of Competence for Nautical Cartographers* (Ed. 3.1.0). The revisions were subsequently approved by the Member States (further details in IHO CL 67 and 74/2014). The Committee approved the Work Programme of the International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC) concerning the development of the next editions of the Standards.

The Committee also endorsed revised ToR and RoP for the General Bathymetric Chart of the Ocean (GEBCO) Guiding Committee (GGC) which was then submitted to the Intergovernmental Oceanographic Commission (IOC) for its approval.

The IHO performance monitoring system was reviewed and the impacts for RHC and Member States were assessed. IRCC agreed on the best practices for reporting the performance indicators and the Chairs of the RHCs were encouraged to provide the IRCC Chair and the IHB with updated reports.

The Committee discussed the use of a risk assessment methodology developed by New Zealand as a tool for Capacity Building assessment. RHC Chairs were invited to encourage Member States in their respective regions to use the risk assessment methodology to prioritize hydrographic survey requirements. A proposal on the best practices for and benefits of maximizing the use of hydrographic data proposed by MACHC was also reviewed and acknowledged by the Committee.

In reviewing the work of the Working Group on Maritime Spatial Data Infrastructures (MSDIWG), the Committee supported a proposal to transfer the governance of the MSDIWG from HSSC to IRCC.

The Committee elected Dr Parry S.L. Oei, the Hydrographer of Singapore, to fill the vacancy of Vice Chair.

## **1.2. Regional Hydrographic Commissions (Tasks 3.1.1 to 3.1.15)**

Meeting reports and lists of conclusions and actions are available on the relevant sections of the IHO web site.

### **Task 3.1.1 Arctic Region Hydrographic Commission**

The 4<sup>th</sup> Meeting of the Arctic Regional Hydrographic Commission (ARHC) was held in Portsmouth, New Hampshire, USA on 29 and 30 January. The Commission discussed the development of a strategic directions document for the ARHC together with initiatives to raise awareness of the shortcomings of hydrography and charting in the region. It also exchanged views on best practices and new technologies for surveying in the Arctic and

preparation of input to the Arctic Council Working Group on the Protection of the Marine Environment (PAME).

### **Task 3.1.2 Baltic Sea Hydrographic Commission**

The 19<sup>th</sup> Conference of the Baltic Sea Hydrographic Commission BSHC was held in Riga, Latvia, from 10 to 12 June. The commission discussed developments in each of the Member States, the latest status of hydrographic surveying and nautical charting including INT Charts, ENC production and BSHC cooperative projects and reviewed on-going regional initiatives and projects including the BSHC Working Group for Monitoring the Implementation of the Harmonized Re-survey Scheme (MWG), the Baltic Sea Bathymetric Database Working Group and the Chart Datum Working Group.

### **Task 3.1.3 East Asia Hydrographic Commission**

The 1<sup>st</sup> Meeting of the newly-established Steering Committee of the East Asia Hydrographic Commission (EAHC) was held in Kuala Lumpur, Malaysia on 26 and 27 February. The steering committee was preceded by meetings on 23 February of the Board of Directors to review the development of an East Asia Training, Research and Development Centre (TRDC) and a meeting on 24 and 25 February of the Charting and Hydrography Committee (CHC) to review and coordinate INT chart and ENC coverage across the region. The Steering Committee considered the results of the TRDC and the CHC meetings and was then provided with a brief on S-100 and S-101 by the Chair of TSMAD. The most notable outcomes of the meeting were the approval of the TRDC Rules of Procedure and Terms of Reference, presentation of the TRDC's five-year work plan, approval of the CHC Terms of Reference, the Member States' interest in monitoring the development of the potential use of Satellite Derived Bathymetry (SDB), demonstration of an *S-57 Use of the Object Catalogue* software tool by ROK, updates on the development of e-MIO (Marine Information Overlays) by ROK, sharing of experience with regards to response to disasters by the Philippines (Typhoon Haiyan in 2013) and Japan (eruption of Nishinoshima volcano) and finally preparations for the EAHC's 50th year celebrations.

### **Task 3.1.4 Eastern Atlantic Hydrographic Commission**

The 13<sup>th</sup> Conference of the Eastern Atlantic Hydrographic Commission (EAHC) was hosted from 16 to 18 September at the Royal Naval Academy in Casablanca, Morocco. All the coastal States represented reported on their activities, progress, achievements and difficulties. A few coastal States expressed concerns about the delays between the completion of surveys covering important maritime traffic areas and the publication of new editions of the relevant nautical charts; others indicated some difficulty in coordinating surveys in their waters. The status of regional INT and ENC charting schemes were reviewed by the regional coordinator. It was decided to consider the holding of a future stakeholder workshop on the risks of maritime disasters in the region. Capacity Building (CB) issues were given particular attention and the implementation of a design study for a sub-regional CB project, included in the IHO CB Work Programme and led by the CB regional co-ordinator, was reviewed. Noting the positive outcomes of the IMO-IHO-IALA Seminars conducted in Mauritania (Nouakchott, Sept. 2013) and in Ghana (Accra, April 2014), the IALA representative confirmed IALA's support in joint capacity building initiatives with IHO and MOWCA in the African sub-region (technical visits, seminars, training, etc).

### **Task 3.1.5 Meso-American and Caribbean Hydrographic Commission**

The 15<sup>th</sup> Meeting of the Meso American - Caribbean Sea Hydrographic Commission (MACHC) was held in Manzanillo, Mexico from 10 to 13 December 2014. The meeting was informed of significant progress in ENC coverage in the region. MACHC Integrated Chart Committee (MICC) introduced plans for an ENC On-Line cloud-based data store house available for planning purposes, hosted by NOAA. This concept was accepted by the MEIP as the solution to the MDSI dissemination project. The MICC also performed a revised assessment of gaps in coverage of Ports using AIS data for major passenger ship Ports of Call, and determining if Bands 4, 5, or 6 coverage was available. The result yielded significant assessment that 27 Ports do not have Bands 4, 5, or 6 coverage. This methodology has been accepted by the MACHC to identify gaps in adequate ENC coverage, and will be expanded to include multiple ship types. The new INT Chart Scheme submitted by Mexico along the conversion of two UK Charts to INT Charts completes coverage on the Pacific side of Region B. During the meeting the MICC Chair was presented with the new suite of Mexican INT Charts, the Cuban completed INT 4158, and seven Venezuelan INT Charts, covering the entire Venezuelan coast.

The meeting discussed the development of risk based tools for the region, the progresses made by the Organization of Eastern Caribbean States and the uncertainties and accuracy of current methods on satellite derived bathymetry.

### **Task 3.1.6 Mediterranean and Black Seas Hydrographic Commission**

No meeting of the Mediterranean and Black Seas Hydrographic Commission (MBSHC) was conducted in 2014.

#### **Black and Azov Seas Working Group (BASWG12)**

The 12th meeting of the Black and Azov Seas Working Group (BASWG), which is a Working Group of the MBSHC, was held in Batumi, Georgia, on 3 and 4 June. The WG examined the INT chart and ENC schemes of the Black and Azov Seas. New INT chart proposals and a draft ENC scheme proposed by Turkey. The status of coverage of Maritime Safety Information services in the Black Sea was also discussed at the meeting. Georgia announced that it was considering the establishment of a new NAVTEX station in the region.

### **Task 3.1.7 Nordic Hydrographic Commission**

The 58<sup>th</sup> Meeting of the Nordic Hydrographic Commission (NHC) was hosted by Finland from 18 to 20 August in Helsinki. The commission reported on national activities since the 57<sup>th</sup> Meeting and reviewed on-going initiatives and projects of common interest related to surveys, nautical charting, nautical publications and supported unanimously the view that the WEND should be composed of the ENCs available via RENCs.

### **Task 3.1.8 North Indian Ocean Hydrographic Commission**

The 14<sup>th</sup> Meeting of the North Indian Ocean Hydrographic Commission (NIOHC) was held in Bangkok, Thailand, from 26 to 28 February. The commission discussed various technical issues of interest to all parties including WEND and RENC issues, the work of the MSDIWG and brief overviews on crowd-sourced bathymetry (CSB) and relevant IMO activities. preparations for the EIHC-5 were also considered. Regional INT Chart and ENC coverage were briefly covered. Considerable time was devoted to Capacity Building and regional requirements.

### **Task 3.1.9 North Sea Hydrographic Commission**

The 31<sup>st</sup> Conference of the North Sea Hydrographic Commission (NSHC) was held in Amsterdam, The Netherlands, from 25 to 27 June 2014. The Conference reviewed the latest developments and perspectives with regard to the European Union (EU) and tasked the Chair of the NSHC Working Group on EU Marine and Maritime Policies to transfer the on-going activities of the Working Group to the IHO-EU Network Working Group formed under the Inter-Regional Coordination Committee. The Chair was tasked with proposing to the Chair of the Baltic Sea Hydrographic Commission (BSHC) to extend the BSHC MSDI Working Group to the North Sea Region. Discussions focused on the implementation of the principles for the WEND and invited the Chairs of the Primar Advisory Committee and the IC-ENC Steering Committee to submit a joint progress report to the EIHC-5 on harmonizing the two Regional ENC Coordinating Centres. The Conference also reviewed the status of INT charts in the region, the development of ENC schemes, C-55, the activities of the NSHC Tidal Working Group, the Dover Strait Survey Strategy Working Group and the Re-survey Working Group. The Commission decided to establish a web site similar to the BSHC web site, with Germany as the administrator.

### **Task 3.1.10 ROPME Sea Area Hydrographic Commission**

The 1<sup>st</sup> Extraordinary meeting of the ROPME Sea Area Hydrographic Commission (RSAHC) was held in Abu Dhabi, United Arab Emirates (UAE), from 9 to 11 February. Details of regional INT Chart and ENC coverage were discussed, however in the absence of the Regional Coordinator it was decided to refer the issues to a meeting of the INT Chart Coordination Working Group the day before the next RSAHC meeting. A up-date on issues relating to the Worldwide Navigation Warning Service (WWNWS) and outcomes from the related IMO meeting was provided.

**Task 3.1.11 Southern Africa and Islands Hydrographic Commission** The 11<sup>th</sup> Meeting of the Southern Africa and Islands Hydrographic Commission (SAIHC) was held in Maputo, Mozambique, from 11 to 13 August. The meeting reviewed progress on INT chart and ENC coverage. There were reports, presentations and discussions on the collection of Crowd Sourced Bathymetry, Satellite Derived Bathymetry, GEBCO and North Indian Ocean Mapping projects, the IHO capacity building plan for the region, Marine Spatial Data Infrastructures (MSDI), the status of C-55.

### **Task 3.1.12 South East Pacific Regional Hydrographic Commission**

No meeting of the South-East Pacific Regional Hydrographic Commission (SEPRHC) was conducted in 2014.

### **Task 3.1.13 South West Atlantic Hydrographic Commission**

The 8<sup>th</sup> Conference of the South-West Atlantic Hydrographic Commission (SWAtHC) took place in Arraial do Cabo, State of Rio de Janeiro, Brazil. Progress of the work of the SWAtHC Planning committee was reported, addressing notably the maintenance and implementation of the regional INT and ENC schemes. The Commission approved the work plan of the Committee for the next intersessional period. This includes the development of a prioritized capacity building plan, and the provision of an annual update of C-55. The Chair of the Committee reported also on the work of the IRCC, CBSC, WENDWG and HSSC. A technical presentation on inland ENCs was provided by Brazil, as one of the co-chairs of the Inland ENC Harmonization Group.

### **Task 3.1.14 South West Pacific Hydrographic Commission**

No meeting of the South-West Pacific Hydrographic Commission (SWPHC) was conducted in 2014.

### **Task 3.1.15 USA-Canada Hydrographic Commission**

The 37<sup>th</sup> Meeting of the US-Canada Hydrographic Commission (USCHC) was held in St. John's, Canada on 16 April. The meeting reviewed the report of the Charting Advisors Committee which is the technical committee of the USCHC. The USCHC discussed and agreed various positions on issues, particularly relating to the WEND concept as well as ARHC issues relevant to the USCHC and preparations and proposals for the EIHC-5. Presentations on informational items and status reports including: ship survey plans for 2014-15, e-navigation update, NOAA paper chart production update, developments in bathymetric radar/satellite-derived bathymetry and LIDAR, strategic plans for paper chart production in light of the requirements for ECDIS as a carriage requirement in an increasing number of ships were also considered.

### **1.3. Hydrographic Commission on Antarctica (Task 3.1.16)**

No meeting of the IHO Hydrographic Commission on Antarctica (HCA) was conducted in 2014.

### **1.4. WEND Working Group (Task 3.1.17)**

The 4<sup>th</sup> meeting of the WENDWG was held at the Directorate of Hydrography and Navigation in Niterói, Brazil, on 18 and 19 March, under the chairmanship of Captain Jamie McMichael-Phillips (UK). Twenty-six representatives from 15 Member States (Argentina, Brazil, Chile, Colombia, Ecuador, Finland, France, Japan, Mexico, Norway, Singapore, Russian Federation, Suriname, UK, Uruguay), seven Regional Hydrographic Commissions (NHC, BSHC, NSHC, MBSHC, EAHC, EAthC, SWAtHC), and the Regional ENC Coordinating Centers (IC-ENC, PRIMAR) attended the meeting. Three members of the WG (Canada, China-Hong Kong and USA) joined the meeting via teleconference.

The meeting acknowledged the status of approval of the revised guidelines for the implementation of the WEND Principles and of the definition of *cartographic boundary* to help the production of ENCs in areas where conflicting territorial claims exist. The meeting analyzed the potential impact of ENC overlaps and how to resolve the conflicts in Electronic Chart Display and Information System (ECDIS) when overlaps occur. The meeting agreed to develop a proposal for a pilot project to use ECDIS software tools to resolve overlapping data issues. The Working Group reviewed progress on the development of an IHO WENC concept and the aspects related to the WEND Principles and governance. The meeting tasked its RENC Harmonization Sub-Group (RHSG) to develop intersessionally the minimum standards for RENC operation and to produce a paper amplifying the benefits for ENC producer nations to join a RENC.

WENDWG4 reviewed the status of global ENC coverage. The meeting invited the RENCs to report global ENC coverage and ENC distribution statistics, including for non-RENC members, to all WENDWG meetings in future. The IHB reported on the development of its ENC coverage catalogue and the expected benefits for the WENDWG to achieve its main objective (*Monitor and advise IRCC on the development of adequate ENC coverage to meet*



*the SOLAS V/19 carriage requirements for ECDIS*). It was agreed that the next WENDWG meeting would take place in Singapore from 3 to 5 March 2015.

### **1.5. Industry Participation in RHC meeting (Task 3.1.18)**

In addition to being represented at IHO meetings through various Non-Governmental International Organizations (NGIO) an increasing number of representatives from industry participated in most RHC meetings as invited Expert Contributors, and provided valuable contributions to regional capacity building initiatives.

### **2. Increase Participation by Non-Member States (Element 3.2)**

IHB Directors visited and briefed high level governmental officials directly and through their diplomatic representatives as part of the IHO awareness-raising campaign. Non-Member States of the IHO were encouraged and invited to participate in the RHC meetings, Capacity Building initiatives and relevant IHO meetings. IHB made high level capacity building visits to Jordan and Panama during November and December 2014.

### **2.2. RHC's to encourage the approval of pending applications for IHO membership (Task 3.2.11)**

The applications for IHO membership from Brunei Darussalam, Georgia and Viet Nam all obtained the required two-thirds approval of the IHO Member States in late 2014. These countries were subsequently contacted by the Government of Monaco to formally inform them of their approval status and to invite them to proceed with the deposit of their Instrument of Accession.

### **3. Capacity Building Management (Element 3.3)**

The 12<sup>th</sup> meeting of the Capacity Building Sub-Committee (CBSC) was held in Brest, France from 14 to 16 May 2014. The CBSC approved the draft revised IHO Capacity Building (CB) Strategy that was also subsequently acknowledged by the IRCC and approved by the EIHC-5. The CBSC also formed a drafting group to develop suitable public relations material to publicize the revised IHO CB Strategy.

The CBSC recognized the increasing importance of the CB Coordinators in all the Regional Hydrographic Commissions. The CBSC considered that the improvement of C-55 is essential in order to provide a comprehensive basis for the assessment of CB requirements in each country. The CBSC welcomed the related work done by the IHB to develop a Geospatial Information System that will support assessing the need for CB support in coastal States in accordance with the IHO CB Strategy.

The meeting approved the revised CB Procedure 3 - *Reviewing process and the preparation of the Management Plan* and 8 - *Finance Management*. A working group was formed to develop a new Procedure 9 covering Technical Visits. This new procedure was intended to replace some parts of Procedure 5 and the former Annex to the CB Strategy.

The CBSC acknowledged the significant contributions made by the Republic of Korea and Japan, through the Nippon Foundation, to the IHO Capacity Building Programme. CBSC also recognized the contribution made by industry to capacity building and the need to achieve even greater involvement with industry partners.

The meeting acknowledged the significant contribution of the IMO in supporting the development of hydrographic services in Developing States through its Integrated Technical

Co-operation Programme. The meeting commended the risk assessment methodology developed by New Zealand as a significant and beneficial tool for establishing priorities for surveys and charting, which in turn supports the identification and justification for CB activities and projects. The CB Management Plan (CBMP) was reviewed and approved by the meeting. The meeting also updated the 2014 CB Work Programme (CBWP) and agreed on the 2015 CBWP based on the approved CBMP. The next meeting of the CBSC was scheduled in Mexico from 27 to 29 May 2015. **Task 3.3.2 Capacity Building Fund Management**

The Capacity Building Fund (CB Fund) is fed from IHO budget allocations, from donations received in support of IHO Capacity Building initiatives and from external contributions. The external contributions may be earmarked for specific capacity building initiatives. The Republic of Korea and the Nippon Foundation of Japan made a significant contribution to the CB Fund during the period of this report.

Many other IHO Member States contributed significant resources in-kind to the CBWP, by providing the venue, instructors, local support, or other items to ensure the effective implementation of CB activities.

### **Task 3.3.3 Meeting with other organizations, funding agencies, private sector and academia**

The 8th Joint IHO/IMO/WMO/IOC/IALA/IAEA/FIG Capacity Building Coordination Meeting was held on 27 and 28 November 2014, at the FIG Headquarters in Copenhagen (Denmark). The annual meeting brought together ten representatives from the IHO, IMO, WMO, IOC, IALA and FIG. . The IHO was represented by Mr. Thomas Dehling (Germany), Chair of the CBSC, and Director Mustafa Iptes and Assistant Director Alberto Costa Neves from the IHB.

Participants presented the CB strategies for their organizations, gave an update on their CB activities in the last year and shared lessons learned, best practices, standardization procedures and experience in dealing with funding agencies.

Each organization also presented its CB programme for 2014 followed by a panel session to assess the priorities and joint policies that could reinforce each CB programme.

The meeting agreed that information should be shared on the establishment of regional training hubs and advances in distance/e-learning. Furthermore, the meeting saw benefits in information exchange between member organizations including: a calendar of activities; country maritime profile information; joint high level visits to common target States and regional organizations; CB impact assessments and gender and youth programmes.

Representatives agreed to present a joint paper to the next session of the IMO Technical Co-operation Committee covering the above items.

### ***Meeting with Nippon Foundation and new fund for CHART Project***

The programme known as The IHO-Nippon Foundation CHART (Cartography, Hydrography and Related Training) Project began in 2014 and was funded by the Nippon Foundation. A coordination meeting between the IHB and Nippon Foundation was held in Tokyo, Japan on 16 January to review and discuss the details of the next courses to be conducted under the CHART Project. Director Iptes represented the IHB.

The first three students (from Bangladesh, Jamaica and Mauritius) sponsored by the Republic of Korea through the IHO Capacity Building Programme successfully completed a Master's Degree in hydrographic science at the University of Southern Mississippi, USA, in July.

### **Task 3.3.4 IHO Capacity Building Strategy**

The XVIIIth International Hydrographic Conference had tasked the CBSC to present a revised Capacity Building Strategy to the EIHC-5. The revision of the CB Strategy was finalized and adopted by the CBSC at its 12th meeting in May 2014.

Mr Thomas Dehling, Chair of the CBSC presented the revised IHO Capacity Building Strategy to the EIHC-5. The Conference unanimously adopted the revised IHO Capacity Building Strategy.

### **Task 3.3.5 Capacity Building Work Programme**

The Capacity Building Work Programme is developed by the CBSC and subsequently endorsed by the IRCC. More details about the activities in the CBWP are described under Elements 3.4 and 3.5.

### **Task 3.3.6 Follow-up of CB activities and initiatives**

The IHB, on behalf of the CBSC, continuously monitored CB activities and initiatives. One IHB Director and one Assistant Director were engaged in this work. Additionally, the President, both Directors and the Assistant Directors continuously monitor CB activities undertaken in the RHC areas for which they provide an overview and advisory function.

### **Task 3.3.7 FIG/IHO/ICA International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC)**

The 37th Meeting of the IBSC was held in Tokyo at the Japan Hydrographic and Oceanographic Department of the Japan Coast Guard from 11 to 17 April. The meeting was attended by eight members of the Board. Assistant Director Alberto Costa Neves (Secretary - IBSC) represented the IHB. The Board assessed fifteen programmes for Hydrographic Surveyors at its annual meeting: five Category B (S-5) submissions, including three new programmes, six Category A (S-5) submissions, including one new programme, three Category B (S-8) submissions, including two new programmes. In addition to its annual meeting, the IBSC had been working on the development of revisions to the standards, specifically the significant revision of the S-5 and S-8 standards.

## **4. Capacity Building Assessment (Element 3.4)**

### **4.1. Technical and advisory visits (Tasks 3.4.1 3.4.3)**

Execution of the technical and advisory visits planned for 2014 are summarized in the following table:

<b>N°</b>	<b>Events</b>	<b>RHC</b>	<b>Implementation</b>
1	Technical visit to Brunei Darussalam	EAHC	Led by EAHC 2 - 4 December
2	Technical visit to Viet Nam	EAHC	Led by EAHC 5 - 7 November
3	Technical Assessment & Advice Visit – Nicaragua	MACHC	Led by UKHO 3 - 5 November
4	Technical visit to Israel	MBSHC	Led by Turkey with Greece and IHB 1 - 3 July
5	Technical visit to Georgia	MBSHC	Led by Turkey and Ukraine 22 - 24 April

6	Technical Visit to Government high authorities - Jordan	NIOHC	Led by IHB 10 - 13 November
7	Technical Visit to Paraguay	SWAtHC	Led by Brazil with IHB 13 - 16 January
8	Technical Assessment & Advice – Samoa	SWPHC	Led by LINZ POSTPONED TO 2015
9	MOWCA (all western Africa coastal and island states from Mauritania to Angola) high level visit	EAtHC	Led by France POSTPONED TO 2015
10	Technical visit to Lebanon	MBSHC	Led by Turkey with France and IHB 4 - 6 February
11	Technical Visit to Liberia	EAtHC	Led by IHB POSTPONED TO 2015

### **Task 3.4.2 Review existing CB procedures and develop new ones**

The CBSC continued to develop procedures to improve the effectiveness of CB activities. During the year, the revised CB Procedure 3 - *Reviewing process and the preparation of the Management Plan* and new Procedure 8 - *Finance Management* were approved. A working group was formed to develop a new Procedure 9 covering Technical Visits.

Norway and the IHB continued to work on specifications for a Capacity Building Management System, in order to incorporate the development of the procedures, the databases and the publications. The management system will be a comprehensive tool to support the CB programme, to monitor the follow-up activities and to support the decision-making process.

## **5. Capacity Building Provision (Element 3.5)**

### **5.1. Raise awareness on the Importance of Hydrography (Task 3.5.1)**

The IHB Directing Committee continued to work on a schedule of visits to improve global awareness, engage external stakeholders such as the United Nations, IMO, IALA, European Commission, funding agencies, academia and industry in general. This included visits to high level authorities in several countries, participation in Regional Hydrographic Commission meetings, participation in various seminars and conferences, and the active promotion of IHO activities in specialized magazines and journals.

### **5.2. Technical Workshop Seminars (Task 3.5.2)**

Execution of the following seminars, workshops and short courses planned in 2014 are summarized in the following table:

No.	Events	RHC	Implementation
1	MSI (training on establishment of MSI structure and basic MSI procedures), for NIOHC Members	NIOHC	Led by UKHO, Muscat, Oman 15 - 17 December
2	MSI (training on establishment of MSI structure and basic MSI procedures), for RSAHC Members	RSAHC	Merged with the NIOHC Event No. 1
3	MSI Regional Workshop, for Solomon Is, Tuvalu, Cook Is, Fiji, Samoa, Tonga, Kiribati,	SWPHC	Led by LINZ, Wellington, NZ 25 - 27 August

	PNG, Tokelau, New Caledonia, Niue, Vanuatu, French Polynesia		
4	Phase 1 Skills: MSI course (3 days) + Introduction to the assessment and promulgation of navigationally significant data (2 days), for EAHC Members	EAHC	Led by EAHC POSTPONED TO 2015
5	MSI Regional Workshop, for EAHC Members	EAtHC	Led by France, Abidjan, Ivory C. 16 - 18 December
6	Tides and water level for hydrographic survey, for EAHC Members	EAHC	Led by Malaysia, Kuala Lumpur 8 - 12 December
7	Sub-regional course on Hydrography (for Spanish speakers), for Guatemala (lead) Belize, El Salvador, Honduras, Nicaragua, Costa Rica and Dominican Republic	MACHC	Merged with the IMO Training Event No. 20
8	Tidal and Water Levels Workshop, for RSAHC Members	RSAHC	Led by UKHO POSTPONED TO 2015
9	Introduction to Hydrographic Surveying, for SAIHC Members	SAIHC	Merged with the IMO Training Event No. 21
10	Tidal and Water Levels Workshop, for SAIHC Members	SAIHC	Led by SAIHC POSTPONED TO 2015
11	Technical Workshop on Hydro/Cartography River Survey, for SEPHC (8) SWAtHC (3) MACHC (3)	SEPHC	Led by Peru, Lima, Peru 22 - 24 October
12	Solomon Is. National Hydrographic Capability Development	SWPHC	Led by Australia, Wollongong, Aust. 11 - 22 August
13	Advanced ENC Production, for Myanmar	NIOHC	Led by UKHO, Yangon, Myanmar 3 - 7 Mar
14	Advanced ENC Production, for Bangladesh	NIOHC	Led by UKHO, Chittagong, Bangladesh. 4 - 8 May
15	Seminar on Raising Awareness of Hydrography (for MACHC Associate and Non Members)	MACHC	Led by UKHO, Manzanillo, Mexico 9 - 10 December
16	Development of a Regional Marine Spatial Data Infrastructure (MSDI) Workshop, for NIOHC Members	NIOHC	CANCELLED
17	Development of a Regional Marine Spatial Data Infrastructure (MSDI) Workshop, for RSAHC Members	RSAHC	CANCELLED
18	Technical aspects of maritime boundaries, baselines and extended continental shelf, for EAHC Members	EAHC	Led by Indonesia, Jakarta 10 - 14 November

19	CB Management Assistant	IHB	Led by the IHB
20	IMO funded course - Meso America and Caribbean Sea	IHB	Led by COCATRAM, Managua, Nicaragua 22 September-3 October
21	IMO funded course - Africa	IHB	Led by UKHO, Maputo, Mozambique 29 September - 10 October 2014 DONE
22	IMO funded course - Southwest Pacific	IHB	Led by LINZ, Suva, Fiji 16-27 June
23	Cat A Hydrography Programme (USM)	IHB	Led by IHB, Hattiesburg, USA Aug 2014-Aug 2015
24	Participation of CB training recipients to the CB Stakeholders Seminar at the IHB (Kenya, Ukraine)	IHB	Monaco, 5-6 Mar Led by the IHB
25	6th Course in Marine Cartography and Data Assessment	IHB	Led by UKHO, Taunton, UK 1 September - 5 December
26	GEBCO Training Project (UNH)	UNH	Led by UNH, Durham, USA August 2014 - August 2015
27	On-board training for Comoros and Madagascar	SAIHC	Led by France, Beautemps-Beaupré June - August 2014 DONE
28	Workshop on Port & Shallow Water Surveys	RSAHC	Led by UKHO, Abu Dhabi 22 - 26 September
29	IMO funded course - Eastern Europe and CIS	IHB	Led by IHB, Constanza, Romania 3-14 November
30	Category B Marine Geospatial Information Program	IHB	Led by IHB, Busan, Korea POSTPONED TO 2015
31	Training for Trainer (TFT) Program of Foundation Course	EAHC	Led by KHOA, Busan, Korea 27 October - 7 November

### 5.3. Hydrographic and Nautical Cartography Courses (Task 3.5.3)

The courses and training delivered in 2014 are shown in the table associated with Task 3.5.2.

The selection of trainees and oversight of the Category A hydrographic training programme at the University of Southern Mississippi sponsored by the Republic of Korea was undertaken by an IHO/ ROK Programme Management Board.

The selection of trainees and oversight of the Category B CHART cartographic training programme at the UKHO sponsored by the Nippon Foundation (Japan) was undertaken by an IHO/ UKHO/ JHOD Programme Coordination Board.

### 5.4. On the job training (Task 3.5.4)

See Task 3.5.2 - Event number 27

### 5.5. Marine/Maritime Projects (Task 3.5.5)

The Directing Committee assisted in the development of several regional projects including in the South-West Pacific (liaison with LINZ - Land Information New Zealand), the Caribbean region (liaison with OESC - The Organisation of Eastern Caribbean States) and the West African region.

### 5.6. Bilateral Agreements (Task 3.5.6)

Technical visits (see Task 3.4.1) continued to be the principal way of identifying areas where bilateral agreements may help to further develop the provision of hydrographic services.

## **6. Coordination of Global Surveying and Charting (Element 3.6)**

### **6.1. C-55 Status of Hydrographic Surveying and Nautical Charting World Wide (Tasks 3.6.1 to 3.6.1.3)**

The following table lists the countries for which updates to existing C-55 entries were received in 2014:

<b>IHO Member States</b>	<b>Non IHO Member States</b>
Argentina	Benin (via France)
Brazil	Comoros (via France)
Cameroon (via France)	Congo (via France)
Denmark	Côte d'Ivoire (via France)
Monaco (via France)	Djibouti (via France)
Morocco	Equatorial Guinea (via France)
New Zealand	Gabon (via France)
Portugal	Guinea (via France)
Russian Federation	Madagascar (via France)
South Africa	Mauritania (via France)
	Senegal (via France)
	Togo (via France)
	Cook Is.
	Kenya
	Lebanon
	Samoa
	Tanzania
	Tonga

The IHB produced an advanced draft of a GIS data model to support C-55 and associated regional information requirements and developed a demonstration user interface covering the Antarctic region (see task 3.1.16).

### **6.2. WEND Working Group (Tasks 3.6.2 to 3.6.2.3)**

The principal objective of the WENDWG is to monitor and advise IRCC on the achievement of adequate ENC coverage that meets the SOLAS V/19 carriage requirements for ECDIS. WENDWG reported to IRCC a number of proposals as reported under Task 3.1.17.

### 6.3. Coordination of ENC Schemes, Consistency and Quality (Tasks 3.6.3)

Guided by IHO Publication S-11, RHC's are expected to coordinate the development and maintenance of small/medium scale ENC schemes and to ensure that consistent parameters are used for consistency and quality. RHCs are also invited to monitor and report on gaps and overlaps in ENC coverage on a regularly basis. This is achieved at every meeting of the IHO Working Group on the World-wide ENC Database (WENDWG). The importance of the WENDWG activities has been acknowledged formally at the 5th Extraordinary International Hydrographic Conference (EIHC-5) by Decision No 10 which states that "*the two continuing priorities of the IRCC will continue to be Capacity Building and ENC coverage together with related WENDWG issues*". The EIHC-5 also tasked the IHO Inter-Regional Coordination Committee (IRCC), by Decision No 12, "*to assess the long term consequences of not achieving the full implementation of the WEND Principles*".

As far as ENC coverage was concerned, reporting from individual RHCs to the IHB or the WENDWG remains inconsistent but is improving with the use of the IHO ENC on-line Catalogue. The examination of the IHO ENC Catalogue, compiled primarily from data provided by the two established RENC organizations and the UKHO, showed that ENC small/medium scale coverage was generally satisfactory, though there were a number of instances of overlapping or duplicated data in the same usage band, as well as some gaps in coverage. At larger scales, there were still a number of ports, harbours and approaches for which there was not an ENC to correspond to a published paper chart of the same area.

The following table shows the statistics reported annually by the IHO to the IMO concerning global ENC coverage. By the end of 2014, the figures had not changed significantly from those reported in May 2013.

	May 2013	December 2014
Small-scale ENCs (planning charts)	~100%	~100%
Medium-scale ENCs (coastal charts)	90%	91%
Large-scale ENCs (top 800 ports)	96%	97%

The relevant Regional Hydrographic Commissions have been invited to report on their analysis of any remaining gaps in ENC coverage and to identify possible actions to the next meeting of the WENDWG.

A working group led by Singapore on behalf of the East Asia Hydrographic Commission (EAHC) has been formed to carry out a pilot project to explore technical solutions to resolve the unpredictable performance of ECDIS caused by overlapping ENC coverage, notably in areas where the limits of waters of national jurisdiction between two neighbouring countries are not established. ECDIS manufacturers have been invited to take part in the project.

### 6.4. Maintenance of INT Chart Schemes and Improvement of Availability of the INT Chart Service (Tasks 3.6.4 to 3.6.5)

The purpose of the IHO INT chart series is to create a compact set of medium and large-scale charts that are specifically designed for planning, landfall and coastal navigation and access



to ports used by ships engaged in international trade. The designation of the limits and scale for each INT chart and the designation of which country will be the primary producer of each INT chart are managed by the relevant RHC.

The following table summarizes the status of the INT chart scheme at the end of 2014:

Region	Coordinator	Commission	Scheduled	New publications reported in 2014	Published Total
A	USA/NOS	USCHC	15	0	15
B	USA/NOS	MACHC	79	8	38
C1	Brazil	SWAtHC	51	3	33
C2	Chile	SEPRHC	44	0	7
D	UK	NSHC	214	0	213
E	Finland	BSHC	292	1	280
F	France	MBSHC	246	1	163
G	France	EAtHC	172	0	132
H	South Africa	SAIHC	116	0	85
I	Iran (I.R of)	RSAHC	116	0	65
J	India	NIOHC	166	6	125
K	Japan	EAHC	293	1	240
L	Australia	SWPHC	62	0	56
M	UK	HCA	114	1	74
N	Norway	ARHC	8	0	8
1 :10 Million	IHB	--	25	0	24

Total of INT charts planned in 2014 : **2013**

Total of INT chart produced in 2014 : **1558 (77.4%)**

## **7. Maritime Safety Information (Element 3.7)**

### **Task 3.7.1 Sub-Committee on the World-Wide Navigational Warning Service**

The Sub-Committee on the World-Wide Navigational Warning Service (WWNWS-SC) monitors and guides the IHO/IMO World Wide Navigational Warning Service which includes NAVAREA and coastal warnings. The Sub-Committee is responsible for studying and proposing new methods to enhance the provision of navigational warnings to mariners at sea, facilitating the implementation of the major changes in procedures for dissemination of navigational warnings and providing appropriate guidance to concerned IHO Member State representatives to further the evolution of the WWNWS. The Sub-Committee also maintains a close liaison and cooperation with the WMO for its Worldwide Met-Ocean Information and Warning Service (WWMIWS).

The sixth meeting of the WWNWS-SC was held in Wellington, New Zealand, from 18 to 22 August under the chairmanship of Mr Peter Doherty (USA). The meeting was attended by 27 delegates from 14 IHO Member States, the IHB, the Secretariat of the IMO, the Secretariat of

the WMO, the IMO NAVTEX Panel, the IMO SafetyNET Panel, Inmarsat and Iridium. The delegates included representatives of 11 NAVAREA Coordinators, one Sub-area Coordinator and four National Coordinators. The WMO held its 2<sup>nd</sup> Maritime Safety Services Enhancement Workshop concurrently. The IHB was represented by Assistant Director David Wyatt.

The WWNWS-SC and the WMO Maritime Safety Services Enhancement Workshop met in joint session for one and a half days during the meeting period. This allowed NAVAREA and METAREA Coordinators to discuss topics of mutual interest and to receive briefings and background presentations on the IHO, WMO and IMO structures.

The current state of the documentation related to MSI was discussed at the joint meeting. The next publications to be reviewed were highlighted. These included the IMO NAVTEX Manual and IMO Resolution A.1051(27) on the IMO/WMO Worldwide Met-Ocean Information and Warning Service. The joint session received progress reports on the development of the following Product Specifications: S-124 - *Navigational warnings*, S-411 - *Sea ice* and S-412 - *Met-ocean forecasts*, all of which are relevant to worldwide navigational warning services.

The IMO Secretariat provided background presentations on the projects related to the modernization of the Global Maritime Distress and Safety System (GMDSS) and e-Navigation, noting that engagement and input from both the NAVAREA and METAREA Coordinators is vital to the eventual successful conclusions of both projects. The IMO Secretariat encouraged closer cooperation and interaction between the IMO, IHO and WMO.

The Sub-Committee reviewed the WWNWS documentation, including the proposed amendments to the SafetyNET Manual prepared at the 12<sup>th</sup> meeting of the Document Review Working Group (DRWG), received MSI self-assessment reports (see task 3.7.3) assessed the content and success of the MSI Capacity Building training courses delivered during the year and prepared a report on the outcome of the meeting for submission to the 2<sup>nd</sup> session of the IMO Sub-Committee on Navigation, Communications and Search and Rescue (NCSR) in 2015.

The Sub Committee received reports from the Chair of the IMO NAVTEX Panel, the IMO SafetyNET Panel and WMO. Inmarsat Global Ltd provided a report, which included a comprehensive brief on Inmarsat Fleet Broadband and Maritime Safety Data Service (MSDS) services. The Sub-Committee also received a comprehensive brief on the present state and future development of the Iridium Satellite system.

### **Task 3.7.2 WWNWS Document Review Working Group and Task 3.7.3 Maintain and extend the following IHO standards, specifications and publications**

The WWNWS relies on various IMO/IHO documents to provide guidance for the promulgation of internationally coordinated NAVAREA and Coastal warnings. Further, the WWNWS systems used for dissemination of the maritime safety information, SafetyNET and NAVTEX respectively, each have their own guidance document. The WWNWS ensures that there is 100% consistency between these documents.

The proposed revisions to the Joint IMO/IHO/WMO Manual on MSI were presented at the first session of NCSR and were subsequently approved and adopted at the 94<sup>th</sup> session of the IMO Maritime Safety Committee.

The Document Review Working Group (DRWG) met in the week after the first session of NCSR and prepared editorial amendments to the IMO SafetyNET Manual and sections of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual, which had been requested for review by the IMO Secretariat. The amendments to the IAMSAR Manual were submitted to the IMO Secretariat for discussion at a number of joint meetings prior to submission to the second session of NCSR held in March 2015, for approval. The editorial review of the IMO SafetyNET Manual was completed at the 6<sup>th</sup> meeting of the WNWNS-SC. After approval by IHO Member States and the WMO, the draft revision will be presented to the third session of the IMO NCSR in early March 2016 for endorsement and subsequent presentation at the 97<sup>th</sup> session of the IMO Maritime Safety Committee meeting later in 2016 for final approval and adoption.

It was decided at the WNWNS 6 meeting that the 13<sup>th</sup> meeting of the Document Review WG (DRWG 13) would undertake a review of the IMO NAVTEX Manual and prepare proposed amendments for consideration at the 7<sup>th</sup> meeting of WNWNS-SC in 2015 and, after approval by Member States and the WMO, they will be submitted to the 3<sup>rd</sup> session of IMO NCSR in 2016. In addition work was to commence on IMO Resolution A.1051(27), in preparation for submission to the IMO NCSR.

#### **Task 3.7.4 Liaise with IMO and WMO on the delivery of MSI within the GMDSS**

The WNWNS-SC, with support from the IHO Capacity Building Programme, continued to deliver its comprehensive training course that provides practical guidance to relevant authorities in countries that are drafting navigational warnings or broadcasting MSI for the high seas under the GMDSS. The objective of the course is to increase the flow of MSI to NAVAREA Coordinators for promulgation, and ultimately to emphasize the importance of establishing expertise in the countries within these NAVAREAs, to fulfill their role of National Coordinators.

The first of three MSI courses was held from 25 to 27 August in Wellington, New Zealand, in support of the South West Pacific Hydrographic Commission. 15 students attended from 13 different countries. The second MSI course was conducted in Muscat, Oman, from 15 to 17 December, in support of the ROPME Sea Area and North Indian Ocean Hydrographic Commissions. Twenty-five students attended from 15 different countries. The third MSI course was conducted in Abidjan, Côte d'Ivoire, from 16 to 18 December in support of the Eastern Atlantic Hydrographic Commission.

Two MSI courses planned for the East Asia Hydrographic Commission and the Mediterranean and Black Seas Hydrographic Commission were postponed and rescheduled for 2015.

#### **Task 3.7.5 Contribute to the IMO work items on the modernization of GMDSS**

The WNWNS-SC reviewed the relevant matters considered and decisions taken during the 94<sup>th</sup> session of the IMO Maritime Safety Committee (MSC 94) and the 1<sup>st</sup> session of IMO NCSR. The WNWNS-SC, through the IHO, again raised its concerns at IMO NCSR that the company Iridium had provided limited details on how it might fulfill the requirements outlined in IMO Resolution A.1001(25) - *Criteria for the Provision of Mobile Satellite Communication Systems in the GMDSS*. Iridium is the first commercial satellite provider other than Inmarsat, to attempt to gain approval based on the relevant IMO Resolution (A.1001(25)).

The IMO Secretariat provided a comprehensive brief on the GMDSS modernization and the GMDSS Master Plan. A revised process for updating Annexes 7 and 8 of the Master Plan was explained. Noting that the responsibility for inserting new data would be passed directly to the Member States, it was confirmed that a validation check would be undertaken by the IMO Secretariat. The representative of the IMO Secretariat urged direct engagement by all Area Coordinators with the GMDSS modernization Correspondence Group.

Subsequently the contents of the relevant Annexes of the GMDSS Master Plan were reviewed. As a result, METAREA Coordinators were requested to liaise with their respective NAVAREA Coordinators to ensure the information being submitted to the IMO was correct.

### **Task 3.7.6 Improve the delivery and exploitation of MSI to global shipping by taking full advantage of technological developments**

At the 6<sup>th</sup> meeting of the WNWNS-SC, the representatives of 11 NAVAREAs and one Sub-Area presented their MSI Self Assessments. The MSI Self-Assessment document requires NAVAREA Coordinators to complete an MSI Quality Management Survey. There was a pleasing high level of consistency of service described in all of the reports that were submitted.

The results of the year-long WNWNS customer survey questionnaire were reviewed and various issues identified for individual NAVAREAs to address. The Inmarsat company gave a general brief on issues identified for the SafetyNET service relevant to both NAVAREA and METAREA Coordinators. It was noted that many of the comments and problems submitted by users were identified as system and equipment related and reflected a lack of understanding on the part of the users. The IMO Secretariat was asked to consider if this situation could be brought to the attention of the appropriate IMO bodies to explore ways to improve GMDSS training.

## **8. Ocean Mapping Programme (Element 3.8)**

The GEBCO Project is a joint programme that is executed under the governance of the IHO and the IOC. GEBCO is directed by a Guiding Committee made up of representatives from both IHO and IOC and is supported by a Technical Sub-Committee on Ocean Mapping (TSCOM), a Sub-Committee on Undersea Feature Names (SCUFN), a Sub-Committee on Regional Undersea Mapping (SCRUM), and a Nippon Foundation/GEBCO Training Project Management Committee. Additional ad hoc working groups are convened as necessary. Through the work of its organs, GEBCO produces and makes available a range of bathymetric data sets and products, including gridded bathymetric data sets, the GEBCO Digital Atlas, the GEBCO world map and the GEBCO Gazetteer of Undersea Feature Names.

### **Task 3.8.1 Conduct meetings of relevant GEBCO bodies:**

#### **Task 3.8.1.1 GEBCO Guiding Committee**

The 31<sup>st</sup> meeting of the GGC was held at the IHB in Monaco from 13 to 15 June. The President, Director Mustafa Iptes and Assistant Director David Wyatt represented the IHO secretariat.

The GGC received brief reports from its Sub-Committees and endorsed the work which they

had undertaken. The GGC also received reports from key personnel performing functions on behalf of GEBCO as well as reports from its parent bodies - IHO and IOC, on activities since the previous meeting.

The GGC reviewed its Work Programme for the quinquennial period 2013 to 2017 which had been approved by the IRCC and commenced development of its Work Plan for 2014 to 2015. The Committee also developed proposed adjustments to its Terms of Reference and Rules of Procedure for submission to IHO and IOC Member States for approval.

The Chair and the President set the scene for the remainder of the meeting, asking members to focus on three key areas – (1) Awareness and profile of the GEBCO Project, (2) Data gathering for ocean mapping (3) Financial support of the project– so as to take the GEBCO Project forward and to maintain its role as the authoritative source and first place of search for ocean bathymetry. The growth in demand for data to support the ever expanding development of the *Blue Economy* in the ocean domain was a repeated theme throughout the meeting. There was a clear understanding that data quality and coverage was the underpinning foundation on which the many uses and products would be developed and that the GEBCO Project should be focused on obtaining and making bathymetric data available, and that it was for others to develop products and services from that data.

The GGC received brief reports from its Sub-Committees and endorsed the work which they had undertaken. The GGC also received reports from key personnel performing functions on behalf of GEBCO as well as reports from its parent bodies, IHO and IOC, on activities since the previous meeting. A detailed report was received covering education and outreach activities, the results of a year-long focused study.

The GGC devoted significant time to considering its future direction and associated ten-year plan. It was agreed that the goals and vision should be guided by four main underpinning themes: human capacity, science and technology, outreach and education, and resources (human and financial), which in turn supported the three key areas of focus highlighted by the Chair and the President at the beginning of the meeting.

It was agreed that the 32<sup>nd</sup> meeting of the Committee would take place, together with meetings of TSCOM, SCRUM and the GEBCO Science Day, in Kuala Lumpur, Malaysia, during the week 5 to 9 October 2015.