

Report of the GEBCO Guiding Committee

Submitted by: Chair

Related Documents: IHO CL 17/2018 dated 14 February 2018
 IHO CL 18/2018 dated 14 February 2018
 IHO CL 27/2018 dated 18 April 2018
 IHO CL 28/2018 dated 18 April 2018
 IHO CL 29/2018 dated 18 April 2018
 IHO CL 59/2018 dated 13 December 2018
 IHO CL 11/2019 dated 25 January 2019
 IHO CL 12/2019 dated 11 February 2019

See Annex C for IHO Publications and Resolutions

Related Projects: NF-GEBCO Seabed 2030

Chair:	Shin Tani, Japan
Vice-Chair:	Martin Jakobsson, Sweden
Secretary:	David Wyatt, IHO
Member States:	Australia, Italy, Japan, Norway, Poland, Republic of Korea, Russian Federation, Sweden, UK, USA
Expert: Contributors:	Fugro

See Annex A for full details

1. Meetings Held During Reporting Period

The 35th meeting of the GEBCO Guiding Committee (GGC) was held in Canberra, Australia, from 12 to 16 November 2018; the meeting was chaired Mr Shin Tani (Japan). The GEBCO Technical Sub-Committee on Ocean Mapping (TSCOM), the Sub-Committee on Regional Undersea Mapping (SCRUM) and Outreach Working Group held a joint meeting from 12 to 13 November 2018; the meeting was co-chaired by Dr. Karen Marks (USA), (Chair of the TSCOM), and Dr Vicki Ferrini (USA) (Chair of the SCRUM). These meetings were followed by the GEBCO Symposium Day, which was held on 14 November 2018. 102 delegates from 22 Member States participated across the five days. The Sub-Committee for Undersea Feature Names (SCUFN) held its meeting in Wellington, New Zealand, 23 to 27 October 2018; the meeting was chaired by Dr Hans-Werner Schenke (Germany).

2. Work Programme

The joint meeting of TSCOM-SCRUM was co-chaired by Dr Karen Marks (USA), Chair of TSCOM, and Dr Vicki Ferrini (USA), Chair of SCRUM.

Update reports were provided on the following regional mapping projects: Indian Ocean Bathymetric Compilation (IOBC), North Atlantic Seabed Mapping Project, International Bathymetric Chart of the Arctic Ocean (IBCAO), International Bathymetric Chart of the Southern Ocean (IBCSO), Canadian Hydrographic Service (CHS) activities, European Marine Observation and Data Network (EMODnet) Bathymetry Digital Terrain Model (DTM) 09/2018 developments, Istituto Idrografico Della Marina (IIM) of Italy in the Arctic region and contributions to the GEBCO and Seabed 2030 projects and the Open Geospatial Consortium (OGC) and its relevance to GEBCO and Seabed 2030 project.

Reports were received from the Seabed 2030 Regional Data Assembly and Co-ordination Centres (RDACC) and the Global Data Assembly and Co-ordination Centres (GDACC). A comprehensive brief were provided on the developments in the IHO Data Centre for Digital Bathymetry (DCDB) and future proposed enhancements. Details were also provided on the Crowdsourced Bathymetry (CSB) initiative and the collaboration with Rosepoint Navigation to gather position and depth data via ECS from small vessels. The work to enhance the data collected via the Voluntary Observing Ships (VOS) programme to include bathymetry was highlighted.

Professor Hyo Hyun Sung, Chair of the OWG, presented a detailed update on activities, the proposed GEBCO outreach and capacity building strategies and suggested a way forward in consideration of the decision at GGC34 to create a new Sub-Committee out of the existing Outreach Working Group (OWG) with responsibility for Outreach, Communications and Engagement, to be called the Sub-Committee on Communications, Outreach, Public Engagement (SCOPE).

Thierry Schmitt (France) and Caitlyn Raines (ESRI) were elected as Chair and Vice-Chair of TSCOM respectively for the period 2019 to 2022.

For the twelfth consecutive year, the GEBCO project organized a symposium on the theme of 'Map the Gaps'. The symposium was opened by Dr James Johnson, Chief Executive Officer, Geoscience Australia. The symposium, which included digital poster sessions and contributions from a broad spectrum of institutions involved in all aspects of ocean mapping, featured 25 presentations on a diverse range of topics.

At its 35th meeting, the GGC 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 Chair of the Sub-Committee on Undersea Feature Names (SCUFN) reported on the changes of membership and the election of a new Chair (Hyun-Chul Han –Republic of Korea) and Vice-Chair (Yasuhiko Ohara - Japan). He noted that there remained one IOC vacancy to be filled. He highlighted some changes proposed to B-6 (Standardization of undersea features names) to make the supporting bathymetric data available to the IHO DCDB as part of a submission. The GGC endorsed an amendment to the ToRs article 2.8 of the SCUFN to increase the submission deadline from 30 days to 60 days for all formats of submissions. He reported on the activities of the Undersea Feature Names Project Team (UFNPT) and the proposed future activities related to the development of a S-100 based Product Specification and the registration of terms in the IHO GI Registry.

The GGC considered outreach and ways to raise the profile of the GEBCO project among the different stakeholder and user communities, including the IHO and the IOC Member States, the maritime and scientific community and the general public. The GGC approved the creation of the new Sub-Committee on Communications, Outreach and Public Engagement (SCOPE) and directed the Chair of the OWG to develop appropriate ToRs. In addition, the GGC requested the Chairs of all Sub-Committees to review their ToRs with a view to achieve better harmonization and consistency. The GGC also requested the Chair OWG to generate a draft communications strategy for consideration at GGC36. The GGC devoted considerable time to discussions on the Seabed 2030 Project. The interim Seabed 2030 Project Director provided a comprehensive presentation on the establishment and activities of the Seabed 2030 Project Team and the regional centres. He highlighted the key personnel involved in the Project Team and the Sponsors. He also presented the initial goals and work packages included in the initial establishment documentation and the overall goal of the project being to complete the GEBCO Grid started in 1903. The GGC reviewed the Year 1 Seabed 2030 Project report and the proposed Year 2 Project Work Plan and both were endorsed after inclusion of a number of amendments and recommendations.

The GGC also reviewed its current financial situation in relation to proposed planned projects. The Committee addressed the budget submissions from its subordinate bodies and approved revised allocations to ensure a contingency balance of 15,000€ was maintained for 2019 to cover emergent items. The draft consolidated GEBCO Work Plan and budget will be reported to the 11th meeting of the IHO Inter-Regional Coordination Committee (IRCC) and the 30th meeting of the IOC Assembly, for consideration and endorsement of the parent organizations., see Annex B.

The GGC reviewed the state of membership and it was noted that one IHO appointed vacancy needed to be filled immediately and a further vacancy would need to be filled on completion of GGC36 in November 2019. Also it was noted that the current Chair and vice-Chair had completed their five-year terms in these roles. In accordance with Terms of Reference, article 2.1, the GGC re-elected Shin Tani and Martin Jakobsson as Chair and vice-Chair respectively for a period of up to two years. In addition it was agreed that a minor amendment to the ToRs article 2.1, reducing the terms of office from 5 to 3 years renewable for one additional term, should be proposed to the IHO and IOC, as it was felt that the current five-year term was too great a burden and commitment to attract suitable volunteers in the future (Track Change version attached as Annex E).

It was agreed that the 36th meeting of the Committee would take place, together with meetings of TSCOM, SCRUM and the GEBCO Symposium, in Portsmouth, New Hampshire, USA, during the week 4 to 8 November 2019. It was noted that France (Shom) and the IOC were investigating hosting the annual meeting in 2020.

3. Progress on IRCC Action Items

Decision 1: to approve the GEBCO Work Plan 2018-2019 (Annex B of doc. IRCC10-07I).

Recommendations to RHC:

1. Continue to encourage RHCs to organize contribution of bathymetric data in shallower coastal areas from their member states to GEBCO in order to support the production of higher resolution gridded data products of GEBCO;

2. Encourage RHCs to invite and communicate with GEBCO members to their meetings

Decision 2: to note the reports under agenda item 7 (docs. IRCC10-07A to I).

There were no specific actions on the GGC from IRCC10.

4. Problems Encountered

The on-going caution of some coastal states on the provision of bathymetric data in waters shoaler than 200 metres, the area critical for much tsunami and coastal inundation modelling. IRCC is requested to encourage member states to gather and contribute shallow water data, from all available sources.

5. Any Other Items of Note

None.

6. Conclusions and Recommendations

None.

7. Justification and Impacts

None.

8. Actions Required of IRCC

The IRCC is invited to:

- a. Note the contents of this report;
- b. Continue to encourage RHCs to organize contribution of bathymetric data in shallower coastal areas from their member states to GEBCO in order to support the production of higher resolution gridded data products of GEBCO;
- c. Encourage RHCs to invite and communicate with GEBCO members to their meetings as appropriate;
- d. Approve the proposed amendment to the GGC ToRs highlighted in Annex E; and
- e. Take any actions deemed necessary.

**IHO-IOC GEBCO GUIDING COMMITTEE
(GGC)**

List of GGC members - 1 May 2018

- | 1. IHO Appointed Members: | Term Period: |
|--|---------------------|
| Mr Shin Tani (Japan) (<i>Chair</i>) | (2018-2023) |
| Dr Hyo Hyun Sung* (Republic of Korea) | (2014-2019) |
| Dr Graham Allen (United Kingdom) | (2015-2020) |
| Mr David Millar (USA) | (2018-2023) |
| Mr Evert Flier (Norway) | (2019-2024) |
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| 2. IOC Appointed Members: | |
| Dr Marzia Rovere (Italy) | (2014-2019) |
| Dr Johnathan Kool (Australia) | (2016-2021) |
| Captain Leonid Shalnov (Russian Federation) | (2016-2021) |
| Dr Martin Jakobsson (Sweden) (<i>Vice-chair</i>) | (2018-2023) |
| Lieutenant Dr Karolina Zwolak (Poland) | (2018-2023) |
|
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| 3. Ex-officio Members: | |
| Dr Vicki Ferrini (USA) (<i>Chair of SCRUM</i>) | |
| Mr Thierry Schmitt (France) (<i>Chair of TSCOM</i>) | |
| Mr Hyun-Chul Han (Republic of Korea) (<i>Chair of SCUFN</i>) | |
| Ms Jennifer Jencks (USA) (<i>Director of IHO-DCDB</i>) | |
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| * Members serving a second 5-year term. | |
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| 4. Secretary: | |
| Mr David Wyatt (IHO) | (2015-2019) |

1.1. IHO-IOC GEBCO Guiding Committee (GGC) Work Plan 2019-2020

1.1 GGC Tasks

- A Organise and conduct GGC XXXV meeting in 2019(IHO Task 3.6.1)
- B Ensure conduct of TSCOM, SCRUM and SCUFN meetings in 2019 (IHO Tasks 3.6.1)
- C Ensure effective operation of IHO DCDB (IHO Task 3.6.2)
- D Encourage the contribution of bathymetric data to the IHO DCDB (IHO Task 3.6.3), identify priority areas for regional mapping (IHO Task 3.6.3) and promote data contribution through GEBCO participation in RHCs meetings (IHO Task 3.6.3)
- E Maintain IHO bathymetric publications (IHO Task 3.6.6) including: B-4, B-6, B-8, B-9, B-10 and B-11
- F Develop the on-line function of B-4 (Information concerning recent bathymetric data) (IHO Task 3.6.2)
- G Contribute to outreach and education about ocean mapping (IHO Task 3.6.7) by development of outreach and educational materials (IHO Task 3.6.7) and printing of IHO-IOC GEBCO World Map (IHO Task 3.6.7)
- H Ensuring IHO-IOC GEBCO Web site is kept current and updated regularly (IHO Task 3.6.8)
- I Develop short course and course material on compiling digital bathymetric models (DBMs) to be included in GEBCO from a heterogeneous bathymetric source database (IHO Task 3.6.9)
- J Update and enhance the GEBCO Gazetteer (B-8) for internet access (IHO Task 3.6.10) including providing the GEBCO Gazetteer as a web service via a geospatially enabled database (IHO Task 3.6.10), develop and make available public and management on-line interfaces to the Gazetteer (IHO Task 3.6.10) and develop the integration of undersea feature concepts in the S-100 framework
- K Liaise with and provide support to Seabed2030 project (IHO Task 3.6.5)

Task	Work item	Priority H-high M-medium L-low	Milestones	Start Date	End Date	Status P-planned O-ongoing C-completed	Contact Person(s) * indicates leader	Related Pubs/Standard	Funding Bid (€)	Approved Funding (€)
A	Organise and conduct GGC XXXVI meeting	H		2019	2019	P	Chair GGC Sec			0
B1	Ensure conduct of TSCOM, SCRUM and SCUFN meetings	H		2019	2019	P	Chair GGC, Chair, TSCOM, Chair SCRUM and Chair SCUFN			0

Task	Work item	Priority H-high M-medium L-low	Milestones	Start Date	End Date	Status P-planned O-ongoing C-completed	Contact Person(s) * indicates leader	Related Pubs/Standard	Funding Bid (€)	Approved Funding (€)
B2	Oversee work of subordinate bodies – TSCOM, SCRUM, SCUFN and Outreach WG – for completion of directed tasks	H		Continuous	Continuous	O	Chair GGC			0
C	Ensure effective operation of IHO DCDB	H		Continuous		O	Director DCDB			0
D1	Encourage the contribution of bathymetric data to the IHO DCDB	H		Continuous		O	All members of GEBCO GC through the Chair			0
D2	Identify priority areas for regional mapping and support the organization of regional mapping projects.	H		Continuous		O	Chair SCRUM			0
D3	Promote data contribution through GEBCO participation in RHCs and IOC regional meetings	H	Identify GEBCO people who are able to attend for meetings in 2019 – 2020	Continuous		O	All members of GEBCO GC through the Chair		0	10,000

Task	Work item	Priority H-high M-medium L-low	Milestones	Start Date	End Date	Status P-planned O-ongoing C-completed	Contact Person(s) * indicates leader	Related Pubs/Standard	Funding Bid (€)	Approved Funding (€)
D4	Organize regional mapping meetings/workshops	H		Continuous		O	Chair SCRUM			0
	Support participation at regional mapping meetings	H	Provide partial support, as necessary, for individuals to participate in regional mapping meetings	Continuous		P	Chair SCRUM			0
D5	Develop material to highlight activities and initiatives	H		Continuous		P	Chair SCRUM	Coordinated with Chair OWG	0	10,000
E	Maintain IHO bathymetric publications	M	Update GEBCO global 30 arc-second grid with new compilations	Continuous	Continuous	O	All members of GEBCO GC through the Chair	B-4 - Information concerning recent bathymetric data	0	0
		M		2016	2017 2019	O	Chair SCRUM	B-9 - GEBCO digital atlas		0
		M	Update GEBCO World Map to include updated versions of GEBCO grid and adopted undersea feature names from SCUFN.	2017	2018 2019	O	Chairs SCRUM/SCUFN	B-6 – Standardization of undersea feature names B-8 - Gazetteer B-9 - GEBCO digital atlas		0
		L M						B-10 - The history of GEBCO B-11 - GEBCO Cookbook		0 0

Task	Work item	Priority H-high M-medium L-low	Milestones	Start Date	End Date	Status P-planned O-ongoing C-completed	Contact Person(s) * indicates leader	Related Pubs/Standard	Funding Bid (€)	Approved Funding (€)
F	Develop the on-line function of B-4	M		2015	On going		Director DCDB		0	0
G1	Contribute to outreach and education about ocean mapping	H		Continuous		O	Chairs TSCOM, SCRUM and Outreach WG		0	2,000
G2	Development of outreach and educational materials (jigsaw puzzle for World Map and presentation files)	H		2015	2019	P	All members of GEBCO GC through the Chair Outreach WG		2,500	
G4	Development of webpage (for secondary school student etc.)	M		2015	2018/2020	O	All members of GEBCO GC through the Chair Outreach WG		2,000	2,000
G5	Developing a communication strategy and resources in GEBCO outreach (ex- Poster or video for each target)	H		2018	2020	O	All members of GEBCO GC through the Chair Outreach WG	See OWG WP 2019-2020	2,000	20,000
H	Ensuring IHO-IOC GEBCO Web site is kept current and updated regularly	M		Continuous		O	BODC		5,000	5,000
I1	Add instructive chapters in IHO-IOC GEBCO Cook Book related to Seabed 2030 as needed	M	Provide technical support	2019	2030	P	Chair TSCOM	B-11 - GEBCO Cookbook	0	0

Task	Work item	Priority H-high M-medium L-low	Milestones	Start Date	End Date	Status P-planned O-ongoing C-completed	Contact Person(s) * indicates leader	Related Pubs/Standard	Funding Bid (€)	Approved Funding (€)
I2	Develop short course and supporting material on compiling digital bathymetric models	H		2019	2021	P	All members of GEBCO GC through the Chair Outreach WG		0	0
J1	Update and enhance the GEBCO Gazetteer (B-8) for internet access	H		Annual	Annual	O	Chair SCUFN	B-8 – Gazetteer	15,000 /year	Funded out of IHO Operational funds
J2	Maintain the GEBCO Gazetteer as a web service via a geospatially enabled database	H		2016	Permanent	O	Chair SCUFN Director DCDB	B-8 – Gazetteer	(See Doc. SCUFN31-07.1B). Funding for correcting and basic maintenance agreed by US. Need to keep it maintained for about 4 years.	
J3	Develop and make available public and management on-line interfaces to the Gazetteer	M		2014	2018 2022	O	Chair SCUFN KHOA	B-8 - Gazetteer	0	0
J4	Develop a S-100-based product specification for Undersea Feature Names	M / L		2015	2019	O	Chair Project Team (Rowena Orok)	S-100, B-6 Harmonized definitions of generic terms across B-6, S-32, IHO GI Registry	0	0

Task	Work item	Priority H-high M-medium L-low	Milestones	Start Date	End Date	Status P-planned O-ongoing C-completed	Contact Person(s) * indicates leader	Related Pubs/Standard	Funding Bid (€)	Approved Funding (€)
J5	Upgrade the quality of the geometry of major existing undersea features in the Gazetteer which are known as being inaccurate and ambiguous	M	10 features/ SCUFN member per year	2017	Permanent	P	SCUFN Members	B-8 Gazetteer	0	0
K	Support Seabed2030	H	Provide scientific expertise, regional connections and outreach	2018	2030	P	Chairs TSCOM, SCRUM, OutreachWG, SCUFN	See TSCOM and SCRUM WPs 2019-2020	0	45,000

1.2 GGC Meetings (IHO Task 3.8.1.1 refers)

Date	Location	Activity
1-4 October 2012	IHB, Monaco	XXIX th Meeting
7-11 October 2013	Venice, Italy	XXX th Meeting
13-15 June 2014	IHB, Monaco	XXXI th Meeting
5-9 October 2015	Kuala Lumpur, Malaysia	XXXII th Meeting
10-14 October 2016	Valparaíso, Chile	XXXIII th Meeting
13-17 November 2017	Busan, Korea	XXXIV th Meeting
12-16 November 2018	Canberra, Australia	XXXV th Meeting
4-8 November 2019	Portsmouth, New Hampshire, USA	XXXVI th Meeting

Chair: Shin Tani Email: soarhigh@mac.com
 Vice-Chair: Martin Jakobsson Email: Martin.Jakobsson@geo.su.se
 Secretary: David Wyatt Email: adso@iho.int

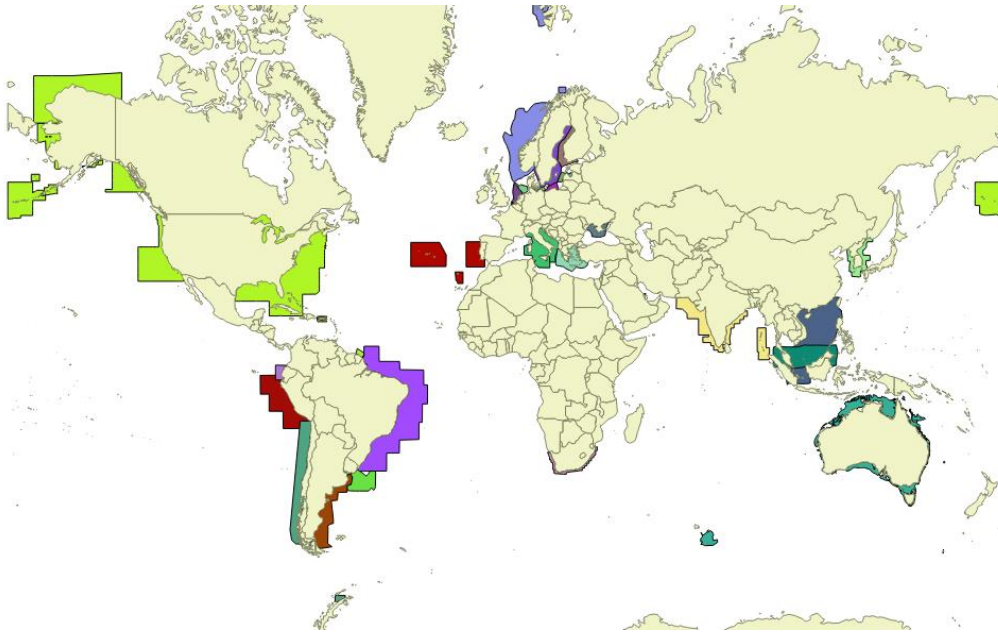
IHO PUBLICATIONS AND RESOLUTIONS

Publications and Resolutions for which GEBCO is the lead or subject matter expert:

Title	IHO Number	IOC Number	Edition/date
<i>Standardization of undersea feature names</i>	B - 6	-	Edition 4.1.0 September 2013; new Edition 4.2.0 in preparation
<i>Gazetteer</i>	B - 8	-	V1.1.1
<i>GEBCO Digital Atlas</i>	B - 9	-	30" Grid March 2015
<i>The History of GEBCO</i>	B-10	-	April 2003
<i>GEBCO Cookbook</i>	B-11	Manuals and Guides 63	September 2018

Resolution3/1929 as amended (*Centralization of oceanic soundings*);
 Resolution3/1932 as amended (*Collecting oceanic soundings*);
 Resolution4/1932 as amended (*Metadata for oceanic soundings*);
 Resolution2/1962 as amended (*Oceanographic observations*); and
 Resolution8/1962 as amended (*Oceanographic information*).

AREAS WHERE ENC SOUNDING DATA HAVE BEEN PROVIDED TO GEBCO



**GENERAL BATHYMETRIC CHART OF THE OCEAN (GEBCO) PROJECT –
TERMS OF REFERENCE AND RULES OF PROCEDURE FOR
THE JOINT IHO-IOC GEBCO GUIDING COMMITTEE**

(Adopted by the IOC on 22 June 2015 and the IHO on 11 September 2015)

PREAMBLE

GEBCO was proposed in 1899 and became a reality in April 1903 when HSH Prince Albert I of Monaco offered to organize and finance the production of a new chart series designated: “The General Bathymetric Chart of the Oceans” (GEBCO), under the Prince’s Scientific Cabinet. In 1922 the responsibility for GEBCO was passed to the Director of the Oceanographic Museum of Monaco and in 1929 was transferred to the International Hydrographic Bureau (today the IHO). Since 1973, GEBCO has been a joint Project of the International Hydrographic Organization (IHO) and the Intergovernmental Oceanographic Commission (IOC) of UNESCO.

The goals of the IHO-IOC GEBCO Project are to:

1. Develop and constantly improve the portrayal of global ocean depths;
2. Act as the designated international authority for undersea feature names;
3. Advance the development and application of sea floor mapping technology;
4. Encourage and facilitate ocean mapping cooperation leading to the exchange and preservation of bathymetric data and associated metadata;
5. Foster collaboration among individuals and organizations with established and developing expertise so as to assist local and regional mapping efforts to attain a global standard of quality;
6. Identify oceanic areas that are insufficiently mapped and recommend to appropriate ocean-going organizations and institutions that such areas are surveyed;
7. Promote education and training in ocean mapping through high level courses in Ocean Bathymetry acknowledged by the IHO and IOC;
8. Bring together the ocean mapping community and users of bathymetry thereby leading to products that are more widely used.

GEBCO is an IHO and IOC Project that is open to all those interested in mapping the ocean floor. It relies largely on the voluntary efforts of an international collaborating community of scientists and hydrographers with the support of the IHO and the IOC.

GEBCO is led by the Joint IHO-IOC GEBCO Guiding Committee.

Terms of Reference

The GEBCO Guiding Committee shall:

- 1.1 Guide the IHO-IOC GEBCO Project, under the general governance of IHO and IOC while recognising and following IHO and IOC policies.
- 1.2 Prepare and disseminate maps, grids, data files and other appropriate depictions of the ocean floor.
- 1.3 Identify the needs of the various user communities of the bathymetry of the world’s oceans; study the ways and means whereby these needs can be met.
- 1.4 Identify the necessary resources, both human and financial, for its undertakings and make appropriate recommendations to its parent organizations.
- 1.5 Stimulate the flow of data relevant to the GEBCO Project by actively identifying sources of new data and encouraging and promoting the release of data to appropriate data banks, with the objective of ensuring that maximum available data are provided to the IHO Data Centre for Digital Bathymetry (DCDB).

- 1.6 Supervise the development, maintenance and routine updating of GEBCO products. Activities are to include but are not restricted to:
 - (1) Study and set out procedures for new compilations of bathymetry.
 - (2) Develop standards and methodologies for the production of bathymetric maps and grids and recommend their adoption to the IHO and IOC and to the seafloor mapping community.
 - (3) Supervise the development, production and updating of a worldwide grid of digital bathymetric data.
 - (4) Supervise the preparation and maintenance, in association with national and international bodies, of an authoritative IHO/IOC GEBCO Gazetteer of Undersea Feature Names.
 - (5) Study and implement the best distribution mechanism for the effective use of GEBCO products by all users.
- 1.7 Investigate and develop appropriate logistical and financial arrangements necessary for the furtherance of the GEBCO Project, recognising and taking into account the relevant IHO and IOC policies, and seeking the assistance of the Secretariats of the IHO and IOC as appropriate.
- 1.8 Integrate into its products the geographical names of undersea features that appear in the IHO-IOC GEBCO Gazetteer of Undersea Feature Names.
- 1.9 As required, establish subordinate bodies (sub-committees and working groups) to fulfil the Committee Work Programme and approve the Terms of Reference and Rules of Procedure of those bodies, reviewing annually the continuing need for each subordinate body. The GEBCO Guiding Committee will report annually and intersessionally if necessary, to the IHO and IOC for endorsement on the status of subordinate bodies and encompass their comments before establishing, reviewing, modifying, and/or terminating subordinate bodies; actions which must be included as GGC agenda items to allow sufficient prior consideration by the IHO and IOC secretariats and member states.
- 1.10 Direct and monitor the work of its subordinate bodies.
- 1.11 Engage with regional mapping projects to encourage their compatibility with, and eventual inclusion in, GEBCO products.
- 1.12 Build capacity by encouraging and enabling the training and scientific education of new generations of ocean mapping operational experts worldwide.
- 1.13 Pursue, in dialogue with the IHO and IOC, policies that facilitate the suitability of GEBCO products not only for scientific users but also, where appropriate, for educational and socio-economic purposes in the broadest sense.
- 1.14 Take all practical opportunities to advocate the scientific and societal benefits of mapping the seafloor.
- 1.15 Report annually to the IHO and to the IOC, through their respective governing bodies and should also propose activities to be considered in the IHO's and IOC's work programmes, identifying and requesting, where necessary, the required funding support.
- 1.16 Prepare an annual GEBCO Work Plan and budget and propose it to each meeting of the IHO and IOC, through their respective governing bodies. The Guiding Committee should consider and submit to the IHO and IOC governing bodies proposals for new work items under the GEBCO Work Plan, taking into account the financial, administrative and wider stakeholder consequences.
- 1.17 Monitor the execution of the GEBCO Work Plan and receive reports from its Subordinate Bodies, including an evaluation of performance and progress achieved against agreed objectives.

Rules of Procedure

1. Membership

- 1.1 The Committee shall consist of five Members appointed by the IHO, and five Members appointed by the IOC. The Secretariats of the IHO and IOC, in close consultation with the Committee Chair, will

seek to strive that all appointed Members are, as far as possible, from different regions so as to achieve a balanced and diverse representation.

- 1.2 Appointed Members shall serve for a term of five years, renewable by a majority recommendation of the Committee for one additional five-year term and with the approval of the corresponding parent organization. The Chair shall inform the relevant parent organization of any foreseeable vacancy in a timely manner.
- 1.3 The Chairs of GEBCO Sub-Committees established under Article 9 of the Terms of Reference and the Director of the IHO Data Centre for Digital Bathymetry (DCDB), shall also be voting Members of the Committee. If a Member of the Committee mentioned under paragraphs 1.1 and 1.2 above is also the Chair of a subordinate body, that Member shall have only one vote on the Committee.
- 1.4 Representatives of the Secretariats of the IHO and IOC shall be permanent Observers in the Committee. The Secretariats of the IHO and IOC will also be recognised as permanent Observers in all subordinate bodies established by the Committee.
- 1.5 The Committee may invite other suitably qualified individuals to take part in specific meetings as Expert Contributors.
- 1.6 Members of the Guiding Committee serve as experts¹ in their personal capacity rather than as representatives of their organization and/or country.
- 1.7 Members are expected to attend every meeting of the Committee. Members who are absent for two consecutive meetings will normally be considered to have resigned and new nominations shall be sought. No substitution shall be allowed at meetings.
- 1.8 Business may be conducted between meetings by appropriate communication systems.
- 1.9 All documents related to meetings and decisions of the Committee and Sub-Committees and other relevant documents will be posted on the GEBCO web site linked to the IHO and IOC web sites.

2. Office Bearers

- 2.1 The Chair and Vice-Chair shall be elected by the Committee from the voting Members of the Committee and normally should be from different parent organizations. The Chair and Vice-Chair are each elected for ~~up to a five~~^{three}-year term, but not exceeding their current membership of the Committee. They can be re-elected for ~~one~~^{a maximum of one} additional term by the Committee. The Chair shall conduct the business of the Committee. If the Chair is unable to carry out the duties of the office, the Vice-Chair shall assume the Chair with the same powers and duties.
- 2.2 The Committee shall appoint a Secretary for a five-year term which can be renewed by the Committee. If resources permit and at the Committee's request, a secretary may be provided by either the Secretariat of the IHO or the IOC. The function of the Secretary shall be defined by the Guiding Committee.

3. Meetings

- 3.1 Representatives from Member States of IHO and IOC may participate as observers in Committee meetings.
- 3.2 Meetings shall be held at least every two years. The venue and date of the next meeting will normally be decided at the previous meeting, in order to facilitate participants' travel arrangements.
- 3.3 The quorum to hold a meeting shall be two more than half of the voting Members of the Committee.
- 3.4 An extraordinary meeting can be called by the Chair or any Committee Member, with the agreement of the simple majority of all voting members of the Committee.
- 3.5 The working language of the Committee shall be English.

¹ So far as IOC is concerned, the Guiding Committee is classed as a Joint Group of Experts under the IOC guidelines for subsidiary bodies.

3.6 The Committee shall strive to make decisions by consensus. If consensus cannot be reached, decisions shall be taken by simple majority vote of the Members entitled to vote. The Chair shall have the casting vote if there is a tie.

4. Amendment and Revision

4.1 These Terms of Reference and Rules of Procedure shall be endorsed and approved by the IHO and IOC according to their current procedures. The Committee may propose to IHO and IOC changes to these Terms of Reference and Rules of Procedure with the approval of two thirds of the Committee. Any changes shall enter in force after being endorsed and approved by both IHO and IOC.