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INTERGOVERNMENTAL OCEANOGRAPHIC  
COMMISSION  
(of UNESCO)

INTERNATIONAL HYDROGRAPHIC  
ORGANIZATION



## **General Bathymetric Chart of the Oceans (GEBCO)**

**Twenty-seventh Meeting of the GEBCO Guiding Committee**

**18<sup>th</sup> September 2010**

**at**

**Direccion de Hidrografia y Navegacion (DHN), Lima, Peru**

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## 1. OPENING OF THE MEETING AND WELCOME

1. The Guiding Committee met at the Naval Club in Lima, Peru on 18 September 2011. The Agenda is at Annex 1.
2. Those present for all or part of the time were members Etienne Cailliau, Robin Falconer (Chairman), Chris Fox, Martin Jakobsson, Paolo Lusiani, Hans-Werner Schenke, Walter Smith, Hyo Hyun Sung, Lisa Taylor, Nataliya Turko, Bob Whitmarsh (Secretary) and Kunio Yashima and invited attendees Bob Anderson, Juan Brown, Dave Clark, Hugo Gorziglia, Colin Jacobs, Dave Monahan, Hugo Montoro, Inyoung Park, Steve Shipman, Shin Tani, Paola Travaglini and Pauline Weatherall. The meeting was assisted by a team led by Hugo Montoro and Luz Cano of the DHN.
3. Robin Falconer opened the meeting. He welcomed everyone and stressed that the meeting had to avoid repetition of what had already been said earlier and had to concentrate on decisions and actions.

## 2. SECRETARIAL ARRANGEMENTS

4. Robin Falconer welcomed David Clark, based in Boulder, Colorado, USA, who would be the new Secretary of GEBCO from 1 January 2011.
5. Hugo Gorziglia said he would inform IHO Member States of the change. Bob Whitmarsh said he would inform IOC that he was standing down as Secretary of GEBCO [Actions: Hugo Gorziglia, Bob Whitmarsh].

## 3. THE GEBCO GLOBE

6. Bob Anderson apologised for not having a globe with him. The Isle of Wight, UK company had sent a globe a week ago but it was stuck in a FedEx warehouse in Lima and hadn't cleared customs because of the bureaucracy of the Ministry of Boundaries.
7. He continued that in the past year he and Martin Jakobsson had worked with the Chinese and UK companies to update the global map in the Black Sea and Caspian Sea areas. Now both companies were ready to make new prototype globes. As a year ago, the Chinese globe is too large to re-make for free. It also needs a brass plate on its base.
8. Bob Anderson proposed that GEBCO establish a Globe Project to put the project on a more formal basis. He sought volunteers to help manage the project and would like Martin Jakobsson to be one of them. The project would need a budget in FY2010-2011 to cover the cost of the prototype globes. A GEBCO person was needed to order the globes and liaise with the distributors. He said he hopes to order a second prototype from China and the Isle of Wight company may make one too. The Chinese company would like to meet to discuss the manufacture of some smaller globes in large quantities, maybe 1000 or even 3000 at a time. He concluded by saying that Prof. Lin is helping to get prototypes of the smaller globes made.
9. In discussion, it was agreed that any distribution and advertising of the globes should be done by the companies. Kunio Yashima noted that the project would benefit GEBCO in terms of outreach but he wondered about the costs. Would GEBCO make a profit or a loss? Who would be responsible for the finances?

10. Bob Anderson replied that the Chinese company wanted ca. USD2000-3000 for shipping a large globe. He had asked the company whether they have representatives or distributors in the USA, Asia etc. to handle orders.
11. Colin Jacobs offered to be the intermediary with the Isle of Wight company.
12. Robin Falconer suggested that a budget of USD9,500 should be given to the project based on estimates of, manufacture Chinese prototype \$1700, trip to Chinese company to approve large prototype \$3500, shipping globe to the USA \$1000, taking globe to the Fall AGU and attending \$2500, manufacture small globes in China/USA \$500, shipping small globe prototype \$300.
13. **A budget of US\$9,500 was approved for the GEBCO globe project which would be led by Bob Anderson. It was also agreed that the project will investigate, in the next 12 months, who will produce and distribute the globes. GEBCO itself would not distribute globes.**

#### 4. WORLD MAP

14. Ms Inyoung Park thanked the Committee for the opportunity to make her presentation. She said that the Republic of Korea wanted to make an offer to support GEBCO. The offer was of 100 million Won (ca. USD84,400) to assist with printing the next version of GEBCO's World Map. She added that a condition of the offer would be that the name 'Sea of Japan' should not appear on the map. Alternatively she suggested that either 'Sea of Japan' and 'East Sea' could be used together or that neither name would be used.
15. She continued that Korea was keen to get involved with GEBCO. For example, the Korean Hydrographic Administration would like to develop a smart phone App displaying bathymetry with named undersea features.
16. Robin Falconer thanked Inyoung Park. He queried why it was necessary to name seas on charts as well as undersea features.
17. Hugo Gorziglia advised that the IHO had a Working Group dealing with the 4<sup>th</sup> Edition of S-23 'Limits of the Oceans & Seas' and he proposed that GEBCO should wait for the WG to report. The WG was considering not just the problem mentioned above but other similar problems world-wide. The WG was expected to report at the IHO Conference in 2012. He proposed that the matter should not be discussed further by the Guiding Committee.
18. Kunio Yashima responded that he welcomed any contribution to GEBCO but he had to point out that the name 'Japan Sea' had appeared in all editions of the GEBCO series of charts from the first edition to the current edition. He stressed that GEBCO exists and is respected due to its scientific and neutral character and it should therefore avoid getting involved in naming problems that have diplomatic and political overtones.
19. Martin Jakobsson said that adding or subtracting a name from a chart was a trivial technical matter. It would be easy to remove the names of all seas from the World Chart. Etienne Cailliau concurred and asked whether a temporary solution might be to remove all sea names from the disputed area. Paolo Lusiani suggested that this might be a pragmatic solution while the S-23 'Limits of the Oceans & Seas' WG was still at work. He noted that older editions of GEBCO charts still existed so perhaps the name on those charts, whatever it was, could be continued. In answer to a question Robin Falconer stated that GEBCO could act alone in this matter.
20. Hyo Hyun Sung said that she and Inyoung Park did not want to make problems and offered to withdraw the proposal.

21. Robin Falconer asked for more information about the idea of creating a smart phone App. Hyo Hyun Sung said that the bathymetry would contain the names of undersea features, their boundaries etc. A proposal had been submitted to the Korean government but so far there had been no reply. Robin Falconer asked whether supporting the App would be a valid outreach activity. Hans-Werner Schenke replied that he liked the idea of undersea feature names being included in the App but pointed out that not all names in the GEBCO Gazetteer were currently associated with a boundary. Answering a question, Hyo Hyun Sung said that the App would not cover the whole world initially but this was certainly possible later. Lisa Taylor noted that the geospatially enabled GEBCO Gazetteer would be available from the GEBCO web site in 2011 and it would be useful for Hyo Hyun Sung to keep in touch.
22. **In summary it was agreed that new printings of the World Map should go ahead with minor updates.** A budget was needed for this. Martin Jakobsson reported that for the last edition printing had cost USD11,600 with significant additional costs for distribution. He suggested that in future hubs should be used for printing and distribution such as Lima, Stockholm, somewhere in the USA etc. He proposed that each hub should be given USD3,500 for printing and distribution. He also proposed that a smaller version of the map should be produced.
23. **It was agreed that USD3,500 should be provided for each hub, to be chosen by Martin Jakobsson, to cover printing and distribution costs. Robin Falconer confirmed that it had been decided to print all names just as they appear in the current version of the World Map.**
24. Martin Jakobsson concluded that some editing of the map was still required but that it would be ready for distribution at the Fall AGU meeting in December 2010. He added that the map would state explicitly that terms had been used that were in the current version of S-23.

## 5. IHO REPORT

25. Hugo Gorziglia presented a report from IHO. He reminded the Committee that the IHO Work Programme and Budget runs for five years from 2007-2012 and the Committee is able to re-allocate resources within its approved budget. The Committee would soon need to consider its budget beyond 2012 for the subsequent quinquennium.
26. Hugo Gorziglia noted the following,
  27. the consistency and quality of ENC's constitute a high priority for IHO as a whole.
  28. the new S-100 document, 'The new IHO hydrographic geospatial standard for marine data and information' became effective in January 2010.
  29. as already mentioned, an S-23 Working Group had been established in 2007 on which 20 countries/Member States were represented.
  30. World Hydrography Day had been held in 21 June 2010 and will be an annual event.
  31. IHO wants to focus in 2011 on the people involved in hydrography.
  32. almost all IHO publications are free from the IHO web site. He remarked that a note should be added to mention the GEBCO World Map.
  33. International Hydrographic Review is a peer-reviewed journal which could be a vehicle to publish GEBCO-related papers. It is already used by CCOM/UNH.
  34. The IHO web site has pages of information mostly available to all.

35. IHO is focused on capacity building and working closely with IOC, IMO, IALA-AISM, the Marine Environmental Studies Laboratory of the International Atomic Energy Agency and others. IHO has had strong support from the IMO to fund courses.

## 6. IHO/IRCC REPORT

36. Hugo Gorziglia, who is Secretary of the IRCC, noted that the aims of this new committee included general bathymetry and ocean mapping. The IRCC holds open meetings around June each year in line with the annual cycle of IHO meetings. The Chairman of GEBCO is ex-officio a member of the committee and Hugo Gorziglia hoped that GEBCO would take advantage of this opportunity to present regular brief reports to the committee on GEBCO's activities and to network.
37. He continued that the committee first met in Monaco on 5 June 2009 when Paolo Lusiani represented GEBCO and the relative weakness of the link between the IHO and GEBCO was noted. The second meeting took place in June 2010 in New Orleans, USA. Unfortunately, because Chris Fox had to cancel his trip at the last moment, there was no GEBCO representative at this meeting. The recommendations from this meeting were that the GEBCO Guiding Committee should liaise with the Regional Hydrographic Commissions, prepare a work programme for the next quinquennium, report to all IOC events (Assemblies and Council) and comply with the work programme already identified for 2008-2012.
38. Hugo Gorziglia announced that the third IRCC meeting would be held in Niteroi, Brazil on 26-27 May 2011. The committee would prepare the work programme and budget for 2013-2017 to be presented to the XVIIth General Assembly in 2012.
39. Robin Falconer asked when GEBCO should prepare its programme and budget. Hugo Gorziglia replied it would be good to have a first draft in time for the 2011 meeting.
40. Hans-Werner Schenke responded that support from the IRCC of the IBCs would be appreciated since no support was forthcoming from IOC. Unfortunately this message had not been given to IRCC-2 because of the unavoidable lack of Guiding Committee representation. Chris Fox suggested that, as appropriate, GEBCO people might also attend regional meetings. Hugo Gorziglia responded that details of RHC meetings were available on the IHO web site. He would arrange for the IHB to inform the Secretary [Action: Hugo Gorziglia].
41. Robin Falconer identified other actions that were required.
42. The budget for the next quinquennium should be drafted [Action: Secretary, Paolo Lusiani, Hans-Werner Schenke, Lisa Taylor].
43. Links with the RHCs should be strengthened; it was only necessary to inform the Chairman if someone wanted to attend [Action: All]. He noted that Martin Jakobsson had already mentioned inviting RHC members to the Arctic/Antarctic meeting to be held in Stockholm in May 2011.
44. Steve Shipman added that it was important for GEBCO to demonstrate to the RHCs that good use was being made of the data provided and to highlight those Member States that have not yet contributed data to specific programmes. Lisa Taylor and Pauline Weatherall responded that they could work to show areas where ENC data had been used by GEBCO and show the limits of IBC and RHC boundaries on the GEBCO and IHO DCDB websites.
45. Finally, Robin Falconer asked how the RHC that included Peru operated. Hugo Montoro replied that more technical advice was needed from GEBCO perhaps provided in the form of a 1-2 day workshop. Martin Jakobsson suggested that RHC members should be invited to participate in some

of the new GEBCO mapping projects that were being planned. Hugo Gorziglia asked that GEBCO would flag these ideas at the next IRCC meeting.

## 7. IHO DCDB REPORT

46. Lisa Taylor outlined her concerns about a number of policy issues.
47. She began by stating that the path followed by data being sent either to or from the DCDB to support the GEBCO grid needed to be defined. For example, data might flow to GEBCO to upgrade the grid or be sent to the DCDB or BODC for archiving. Web sites could be improved to make them more friendly to data providers. She suggested that data flow could be better coordinated by involving LDEO, Google, DCDB, BODC and GEBCO.
48. Chris Fox suggested that one approach might be that soundings would be handled by NGDC and grids by BODC. Hans-Werner Schenke offered to involve the German Pangaea database as well. Bruce Goleby added that he was comfortable with offering access to the Geoscience Australia database, including copies of the metadata, through a web service.
49. Lisa Taylor continued by describing a data sharing agreement that had been set up between the Canadian Hydrographic Service and NOAA (NGDC and PMEL). Both institutions were involved in operating tsunami warning systems and the aim was to improve forecasts of tsunami inundation. For example, high resolution multibeam data had been acquired off the coast of British Columbia but this was to be used only for tsunami forecasts and warnings issued by the WCATWC.
50. Another problem that she had encountered was how to reinvigorate data submissions. Some Member States had concerns about sharing data to do with security, protecting revenue and the time and resources required. In the case of restricted or partially restricted data, providers could be asked to provide the geospatial extent and discovery metadata with a link to the provider/source information. Alternatively, member states could be encouraged to make available a lower resolution grid either hosted by the IHO DCDB or made available via a link to the source organization. One possible approach to reinvigorate data submissions from IHO member states was to work with the IHB by partnering or reaching out to RHCs and the IRCC. For example, 1) the IHO could send out a Circular Letter after the data accepting web sites had been completed, 2) GEBCO representatives could attend RHC meetings and 3) scholars of the NF/GEBCO Training Project could work in partnership with the RHCs. Another aspect was whether access for data submittal should be password protected or not. Controlled access, with minimal contact information to register, would allow data and metadata to be entered directly into databases.
51. Lisa Taylor also referred to proposals for new undersea feature names. She suggested that proposers should provide the digital bathymetry, a lower resolution grid of the data and, at a minimum, the spatial footprint and discovery metadata to IHO DCDB. This could be an option on the on-line submission form. Walter Smith responded that this might raise a potential policy conflict between TSCOM and SCUFN; SCUFN should be able to accept proposed names for features that were not visible on the 30 arcsec grid while encouraging the submission of better data.
52. Finally, Lisa Taylor said that she wanted to see the DCDB have an improved on-line presence in the sense that it was easier to search for, download and submit data and metadata. Maybe a NF/GEBCO scholar could help with the IHO DCDB web search/submittal website? Part of the aim was to allow for easy tracking and reporting (help to encourage data and metadata submissions). However she noted that resources were needed to complete this effort. Robin Falconer suggested that NF/GEBCO scholars might be able to contribute.

## 8. IOC REPORT

53. Robin Falconer said that he had been advised a few days before the meeting that Luciano Fonseca was unable to come to Lima because of funding constraints. He noted that the IOC Executive Council had indicated in June 2010 that IOC was under tight financial constraints and the new Executive Secretary was unable to change the situation with regard to GEBCO. He noted that IOC could ask Member States for more funds but this hadn't been done so far.
54. He continued that the new IOC contact, Luciano Fonseca, was based in the Science Group at IOC (whereas GEBCO was nominally in the Tsunami Group). He is from Brazil and holds a PhD from UNH. He is already known to several GEBCO people but needs help to build his connections. He already has links to the International Seabed Authority. He had told Robin Falconer that the IBCs were largely defunct and that CGOM is also defunct and no longer recognised by IOC.
55. Consequently it was suggested that GEBCO might become the parent organisation of the IBCs which now felt 'orphaned'. Hugo Gorziglia reminded the Committee that the IBCs are also IHO projects. IHO had been informed by Günter Giermann that CGOM was defunct. Robin Falconer suggested therefore that GEBCO, in parallel with IHO, should write to IOC suggesting that it should share responsibility for the IBCs with the IHO. Hans-Werner Schenke added that the Chairs/Vice-Chairs of the IBCs should be informed as well. Hugo Gorziglia warned that the letter would need to be cautious and diplomatic without upsetting any particular group but as far as he knew the sentiments raised were in line with what the IHO and IOC wanted. Martin Jakobsson said he was strongly in favour after his experience with trying to re-establish the IBCAO. Robin Falconer concluded that GEBCO should talk further to Luciano Fonseca and Hugo Gorziglia to decide how to proceed [Action: Chairman, Secretary].
56. Robin Falconer suggested that Luciano Fonseca should be invited to visit NOCS and BODC [Action: Juan Brown].

## 9. DIGITAL ATLAS MANAGER'S REPORT

57. Pauline Weatherall explained her work plan for the next 12 months. This included the release of a new version of the GEBCO-08 grid, release of CF-net CDF versions of the grids, release of the GEBCO-08 Web Map Service, updating the 2008 grid with new data and new grids from GA Australia, Amundsen Sea, the Great Lakes etc., working with LDEO on tagging and delivering metadata for the SID grid, work on the GEBCO web site and involvement with the Outreach Working Group.
58. In discussion it was noted that data are now available from Lake Superior and from Lake Titicaca.
59. Finally Juan Brown noted that POL had been re-structured in the sense that it was now part of the National Oceanography Centre although this made no difference to the status of BODC. He warned of looming cuts in the UK.

## 10. BATHYMETRIC EDITOR'S REPORT

60. Colin Jacobs stated that he had no policy issues to raise. He was happy with the new work plan being developed at the meeting.

## 11. SCUFN REPORT

61. Hans-Werner Schenke reported that SCUFN had had a very successful 4-day meeting from 11-14 September but even so they would have liked to have had more time. SCUFN's Agenda and associated documents are available on the IHB web site. He thanked the IHB and the SCUFN Secretary in particular for their support.
62. He continued that nine out of twelve members had been present. Cdr Avtar was unable to attend and may have to resign, Norman Cherkis had a domestic problem that kept him at home and José-Luis Frias had not attended for two consecutive years and was deemed to have resigned leaving a vacancy for an IOC member. Candidates for the vacancy should apply via their national IOC organisation. Jimmy Nerantzis has replaced Trent Palmer as the Secretary of ACUF. In addition 17 observers had attended.
63. Sixty-two items had been worked on during the intersessional period. In addition the Gazetteer (B-8) had been continuously updated and now contains an on-line form for submitting feature names. The B-6 document ('Standardisation of Undersea Feature Names') had been updated in both English and Spanish. Publications now include graphical examples of undersea features and this has led to the formation of a new graphics group. The Gazetteer had been continuously improved.
64. He said that the Sub-Committee is willing to consider new generic terms on a case by case basis. The Committee had approved the terms 'mud volcano' and 'rift'; the terms 'sand ridge(s)' and 'salt dome' were not approved.
65. Hans-Werner Schenke continued that after the Brest meeting there had been 46 action items; 20 had now been completed and 26 were pending. Since then various proposals had been received from, among others, Brazil, Japan, Peru, Russia and the UK. Sixty-four proposals had been discussed in Lima of which 11 were pending and one had been rejected.
66. In future, proposals would have to be received 60 days pre-meeting if supported by analogue data and 30 days pre-meeting if supported by digital data. The People's Republic of China had offered to host the 2011 meeting which was envisaged to last 5 days.
67. Steve Shipman, as Secretary of the IHO Dictionary Working Group, pointed out that the WG's Terms of Reference say that IHO subsidiary bodies can submit suggestions directly to the WG; thus this is an option for GEBCO and SCUFN.
68. Shin Tani said he was concerned that 'mud volcanoes' were relatively small features and that a lot of other small features might be added to the generic terms. In addition he asked whether, to define a 'rift', geophysical and geological data were required. Hans-Werner Schenke replied that in both cases geophysical data were required. He added that new specific terms for mud volcanoes would only be considered for topographically significant or frequently cited features. SCUFN recognises the issue of scale and has decided to consider adopting new generic terms only in cases where the new terms would minimize confusion within the scientific community and add clarity for the public.
69. **Finally it was agreed to approve and endorse SCUFN's request to be able to approve new generic terms on a case by case basis.**
70. Thanks were expressed to the Vice-Chair, Lisa Taylor, to the SCUFN Secretary, Michel Huet, and to Vaughan Stagpoole as rapporteur for their work during SCUFN-23. The final report will be available at [www.iho-ohi.net/english/committees-wg/ircc/gebco/scufn.html](http://www.iho-ohi.net/english/committees-wg/ircc/gebco/scufn.html) and [www.gebco.net/about\\_us/meetings\\_and\\_minutes/](http://www.gebco.net/about_us/meetings_and_minutes/).

## 12. TSCOM REPORT

71. Walter Smith said that the Fifth TSCOM Science Day had been a great success. There were 9 oral and 13 poster contributions (and two talks were given on other days). We saw world-class work being done by the DHN during a tour of their facilities. The DHN press office interviewed some of the science day contributors for release to the news media. Hugo Gorziglia kindly offered to inform HOs by circular letter that the Science Day will be an annual feature so that contributions and travel resources can be built into work plans in a timely way.
72. Walter Smith reported that much excellent work was being done under the auspices of TSCOM and details could be found in the reports of the Bathymetric Editor, Gebco Digital Atlas Manager and IHO DCDB Director. In addition great progress has been made on updating the GEBCO grid (see Pauline Weatherall's report and Science Day poster).
73. Walter Smith continued that the Working Group on Metadata, led by Tony Pharaoh, has also made great progress. The WG's goal is to enable GEBCO to discover data, other users to discover GEBCO's products, web-services to be enabled, data attribution to be enabled, etc. A draft document has been circulated and issues identified and worked on. A break-out group met in Lima. The work is on-going.
74. Another Working Group on creating a Cookbook, led by Karen Marks, has the goal of enabling individuals and regional groups to learn how to build new contributions to GEBCO's products. About six talks and posters at the Science Day were stimulated by TSCOM flagging this issue in 2009. A draft 'cookbook' document exists that will be posted shortly. It will be expanded, revised and updated as on-going investigations and experiments to determine best practices continue. It is planned that some test data sets and example scripts, to allow others to join the experiments or follow the examples in the cookbook, will be made available through the GEBCO web site.
75. Walter Smith said he was again delighted that Jenifer Foulkes, head of Google Ocean, was able to join the GEBCO meeting. She invited GEBCO to use Google Earth for public education and outreach and to tell stories and exhibit features of general interest. Apparently 700 million users worldwide have downloaded Google Earth. It is now on Droid phones and will soon be on the iPhone. Google Earth is ingesting new localized high-resolution grids from a variety of providers. They will be able to update the worldwide 30 arcsec grid as their and GEBCO's resources allow. Google Earth is being sent a 100m sparse grid by LDEO which will be made available soon. This shows deepwater multibeam surveys, mainly from U.S. academic vessels but with some other contributions as well.
76. Walter Smith expressed his thanks to Vicki Ferrini and LDEO colleagues for offering access to their 100 m grid. He considered that two aspects needed to be considered. 1) LDEO's offer to GEBCO of a 100m sparse grid and 2) GEBCO's proposal for a 100m grid.
77. Regarding item one, he noted that LDEO processes and cleans multibeam data and creates a synthesis at 100 m horizontal resolution where "tiles" are covered by survey data. LDEO serves that grid through their web site; they have sent it to Google Earth. They are offering it to GEBCO to use in updating its grids. Assuming restrictions on terms of use are not a problem, GEBCO plans to ingest the data and update its 30 arcsec grid in 2011.
78. Regarding item two, LDEO is offering their 100 m world grid to GEBCO to form the basis of a GEBCO 100 m product. TSCOM had a break-out discussion with Vicki Ferrini to better understand the proposal and to begin to think about its implications. TSCOM wishes to ask the Guiding Committee to endorse, or not, the idea that it embark on a pilot demonstration project to see what a GEBCO 100 m grid would look like, how it would work, etc. The details will be worked out in due course but the concept is to take the LDEO 100 m world grid and see what is required to turn it into the GEBCO 100 m world grid.

79. In conclusion, Walter Smith referred to the conduct of the technical meetings just held. He suggested that there should be some assessment of how well combining the TSCOM and iSCRUM topics, with blocks of time allotted to first one subject and then another, had worked. He noted that the people who wanted to progress grid updates felt that they needed another, smaller and more focused meeting to establish a work plan and have additional technical exchanges.
80. Finally, Walter Smith noted that he had been Chair of TSCOM since 2004 and he felt that, without more support, it was almost too big a job for one person.
81. Robin Falconer thanked Walter Smith for his report and opened the discussion of the 100 m grid. After some discussion about the area to be covered by the pilot project (it would not be global in coverage but would be tested in an area or areas where data were already available) Walter Smith said that TSCOM would aim to deliver a prototype 100 m grid at the next GEBCO meeting.
82. **The Committee agreed to endorse TSCOM's proposal to run a pilot project to develop a 100 m grid in one or more areas with the aim of delivering a prototype in 2011.**
83. Some discussion followed about finding secretarial and other support for the Chairman of TSCOM. It was suggested that the Guiding Committee should help in some way and help was also offered from the IHB. Lisa Taylor pointed out that SCUFN had a Vice-Chair and a Secretary and this worked well. Robin Falconer closed the discussion but noted that a solution would have to be found later (see agreed actions reported at end of Section 13).

### 13. iSCRUM REPORT

84. Martin Jakobsson recalled that iSCRUM had been set up in Brest in 2009 with himself as Chairman and Colin Jacobs as Vice-Chairman. He noted that the roots of iSCRUM lay in the fact that it had been difficult to communicate and interact with the IBCs. He felt it was important to work face to face and he said he had found this meeting to be very successful. The Bathymetric Editor was key to the success of iSCRUM. Martin Jakobsson stated that it was iSCRUM's role to coordinate and encourage the incorporation of compilations into GEBCO. Four main data sets had been ingested. He found that once a group had been set up people started to work together. From now on there were going to be two new projects in 1) the SE Pacific Ocean and 2) the northern Indian Ocean. He noted too that an Antarctic/Arctic meeting was planned in Stockholm in May 2011.
85. Finally he asked the Guiding Committee whether it wanted to establish iSCRUM as a formal Sub-Committee or not. He recognised that to do so Terms of Reference and Rules of Procedure would need to be put to, and endorsed by, the IOC and the IHO. He added that such documents should include a Vice-Chairman for a fixed term.
86. Robin Falconer responded that he favoured setting up SCRUM. Any ToR/RoP could be based on those of the other Sub-Committees. Chris Fox concurred noting that it was also timely to create SCRUM with the demise of CGOM and the possible incorporation of the IBCs into GEBCO. Lisa Taylor agreed. Martin Jakobsson noted that there was a need to link with the RHCs as well. Juan Brown cautioned that there was some overlap between iSCRUM and TSCOM and care would be needed in drafting SCRUM's ToR.
87. In conclusion it was agreed that,
88. **There was a need for SCRUM to be set up as a formal Sub-Committee of GEBCO.**

89. **The Chairmen of iSCRUM and TSCOM, with others, should prepare draft Terms of Reference and Rules of Procedure for SCRUM, including clarification of its relationship with TSCOM, and present them to the Guiding Committee for approval [Action: Walter Smith, Martin Jakobsson, Chris Fox].**
90. **A Vice-Chairman of TSCOM should be sought and the issue resolved of how a successor to the Chairman is found.**

#### **14. REVISION OF IHO DOCUMENT B-7 ‘GEBCO GUIDELINES’**

91. Steve Shipman began the discussion by pointing out that B-7 was really the Guiding Committee’s document although it was published for them by the IHO and sent out to Member States for their approval. Robin Falconer queried whether it was necessary to have such a paper document when all the information it would contain could be presented, and easily updated, on a web site. Walter Smith also queried the need for a publication although he said he thought that the purpose of B-7 was to help new organisations get involved with GEBCO. Steve Shipman replied that he had no problem with using web pages in this way provided that they are all linked together. He continued that he would coordinate the assembly of the new text but needed the names of GEBCO people to work with while he did so. **It was agreed that Steve Shipman should lead the revision of B-7 and that he should approach those members of GEBCO whose assistance he required.**

#### **15. OUTREACH WORKING GROUP REPORT**

92. Paola Travaglini reported that the group had been busy. Hyo Hyun Sung and Pauline Weatherall had joined the group in the last year. Specifically the group will,
93. Investigate the feasibility of creating an educational package for Korean teenagers as a pilot project involving teachers. The package would contain information on hydrography, undersea features, oceanography and geology. The group planned to produce a report on each aspect and a budget by the end of 2010.
94. Subscribe to Google Ocean’s ‘Explore the ocean’ site and submit GEBCO-related information to it. Paola will be the editor of the submitted text.
95. Harvest existing fly-throughs and generate new ones to submit to Google.
96. Add Frequently Asked Questions to the GEBCO web site. At the same time develop GEBCO Facebook and Twitter sites. They will include John von Rosenberg who had first suggested the idea. Pauline Weatherall will be in charge of this project.
97. Set up an aquarium pilot project (as already described in the Technical Discussions Report). Investigate the interest of the Genoa Aquarium in using GEBCO products such as 3-D models and fly-throughs. Paolo Lusiani will be in charge of this project.
98. Chris Fox confirmed that Google was looking for fly-throughs but GEBCO scientists would need to narrate what was being seen during the fly-through. Martin Jakobsson noted that making the fly-through was easy but writing the narrative was tougher. Walter Smith noted that Google was offered in 35 languages. Paolo Lusiani stated that the general idea was to create some examples of fly throughs to catch people’s attention and to get across the idea that there was ‘another world’ beneath the waves. For example, it was hard to find fly-throughs on YouTube and providing clips there would be a good first step to demonstrate what GEBCO did. More examples could be added as time was available.

99. Paolo Lusiani confirmed that the main action by year end would be to decide whether a budget was required and, if so, how much it should be. Robin Falconer asked whether the IHO funds allocated to GEBCO could be used for such outreach activities. Hugo Gorziglia replied in the affirmative; once the funds had been approved they could be applied to new priorities.
100. **In summary, the above five projects were formally accepted as outreach projects. It was agreed that a detailed budget would be provided to the Guiding Committee by the end of 2010 [Action: Outreach Working Group]. It was confirmed that, as well as GEBCO funds, €18,000 were available from IHO for outreach and education.**

## **16. NF/GEBCO TRAINING PROJECT MANAGEMENT COMMITTEE REPORT**

101. Robin Falconer, as Chairman of the NF/GEBCO Project Management Committee, reported that the project continued to be very successful. It depended a lot on the efforts of Dave Monahan who put in a huge amount of time arranging courses, trips on research ships and lab visits for the students. He concluded by saying that in the new structure of the project, which was being worked out, a comparable committee would continue to exist.

## **17. NIPPON/GEBCO NEW MANAGEMENT STRUCTURE AND NEW PROJECTS**

102. Robin Falconer informed the Committee that GEBCO had been awarded USD415,000 by the Nippon Foundation to cover projects, other than the Training Project, for the next two years. Which projects to develop had been discussed by the NF/GEBCO Training Project Management Committee in the last few days. He recognised too Shin Tani's critical role in interfacing with the Nippon Foundation on behalf of GEBCO.
103. A new management structure for all the NF funded projects is required and this necessitates the Guiding Committee establishing a new board. A NF/GEBCO Board would be in overall charge and it would consist of at least Chairman GEBCO, two scholars, one independent person and three people appointed by the Guiding Committee. **The GC approved the formation of a NF/GEBCO Board to manage all the NF funded projects. It was agreed that Shin Tani and Martin Jakobsson should be two of the three Board members appointed by the Guiding Committee.**
104. Robin Falconer continued that, like other projects funded by the Nippon Foundation, the Board will have a Sub-Committee to run each individual project.
105. Thus it was proposed that Dave Monahan will Chair a Sub-Committee on training and teaching. In addition there will be two projects concerned with regional mapping designed to enhance capacity building.
106. The first mapping project, mapping of the Southeast Pacific Ocean, will be led by Hugo Montoro aided by Colin Jacobs. The first meeting of the Sub-Committee was planned to be from 15-18 November 2010 in Cartagena, Columbia subject to invitations being received by those planning to take part. Robin Falconer suggested that an interim budget of USD10,000 be set up.
107. In the northern Indian Ocean, he continued, there is at the moment no existing group with which GEBCO can interact and he needed to write letters to key people in the region. Draft letters were being prepared by GEBCO people in Pakistan and Indonesia. He expected that Colin Jacobs would play a major role in setting up this project. Hugo Montoro would be asked to explain to potential participants how the SE Pacific mapping group operated. Robin Falconer suggested that an interim budget of USD10,000 be set up.

108. Robin Falconer continued that a further project being considered is funding postgraduates to work on a PhD. The key thing is to find candidates who are also scholars and then to find supervisors with a passion for bathymetry. No funding was required at the moment.
109. Another project is to upskill scholars. Dave Monahan had agreed to look into what exactly the scholars most need. The courses could travel to the scholars or *vice versa*. They would be open not only to scholars but to others too.
110. Finally, he concluded, there were a number of less concrete proposals to 1) use scholars to man booths at major scientific meetings and offer papers at conferences, 2) set up a marine GIS after conducting a pilot study and 3) organise a world meeting on bathymetry, a bold and probably too difficult undertaking.
111. Hans-Werner Schenke responded that he would like to see funds being made available to help graduate students from research institutes, not just from UNH, to take part in research cruises with a bathymetric opportunities. He proposed that the students would undergo some pre-cruise training and would be allowed to work on cruise data post-cruise. The students would be paid only the travel and subsistence costs required to participate in the cruise. He compared this suggestion with a similar scheme run on the *Polarstern* and *Sonne* in which students learn a tremendous amount in a 4-6 week cruise. He suggested that GEBCO people could search for suitable cruises on the web and use their contacts to find empty berths. Robin Falconer responded that this was a great idea for a GEBCO project under the Nippon Foundation umbrella. Hans-Werner replied that he would be happy to lead the project and make use of his contacts to help others participate.

## 18. FUTURE TREASURER ARRANGEMENTS

112. Robin Falconer reported that the Nippon Foundation wants GEBCO to have ‘a robust financial management system’ in place to handle the money that it awards to GEBCO. He reminded the Committee that at present NF funds are transferred to the University of Southampton in US dollars where they are administered by the Secretary. Earlier this year GEBCO was awarded USD415,000 to cover projects, in addition to the Training Course at UNH, for the next two years. There is no plan at present to find a GEBCO Treasurer but it would be advantageous to have someone acting as Treasurer separately from Secretary. Who this might be will depend on where the funds are kept in future. He concluded by saying it is up to the Nippon Foundation/GEBCO Board to find a solution.
113. In discussion, Shin Tani revealed that the NF favoured having the Training Project and new project funds in separate accounts.
114. **In conclusion, the Guiding Committee noted that the Nippon Foundation/GEBCO Board will take action to find a Treasurer and the Guiding Committee will be asked to approve the proposed appointment.**

## 19. REVIEW OF COMMITTEE/SUB-COMMITTEE/WORKING GROUP STRUCTURES AND MEMBERSHIP

115. Robin Falconer introduced the item by explaining that José-Luis Frias, an IOC member, had in effect resigned from the Guiding Committee because he had not attended for two years in succession without any reasonable explanation. It was known that José-Luis Frias had changed jobs but only two emails had been received from him in the last twelve months. The Committee thanked José-Luis Frias for his valuable past contributions to GEBCO, not only to the Guiding Committee but also to SCUFN and the NF/GEBCO Project Management Committee. Lisa Taylor specifically noted the large contribution he had made to the International Bathymetric Chart of the Caribbean Sea and the Gulf of Mexico project.

116. Robin Falconer continued that when choosing a successor it was important to maintain a balance of representation from around the world as well as a range of skills. IOC has no formal process to appoint new Guiding Committee members and it was reasonable for GEBCO to want to suggest the names of possible appointees. The names of candidates from France and Australia were suggested. It was also noted that in effect there was a further vacancy since Hans-Werner Schenke was a member in both his personal capacity but also as Chairman of SCUFN. **It was agreed that the Committee should wait two months for any further suggestions to be put forward before formally informing IOC of its suggested candidates [Action: All].**
117. The Committee confirmed that the formal GEBCO Working Groups were presently,
118. the Education/Outreach Working Group
119. the Metadata Working Group
120. the Cookbook Working Group
121. the GEBCO Guidelines (B-7) Working Group
122. the Southeast Pacific Working Group
123. the northern Indian Ocean Working Group
124. It was noted that it was up to iSCRUM to appoint members of the last two Working Groups.
125. In discussion, it was confirmed that the Education/Outreach Working Group would also interface with Google Ocean, which provided a lot of outreach content, via Lisa Taylor and Pauline Weatherall.

## 20. ANY OTHER BUSINESS

126. The Secretary was delighted to report that he had been informed that Desmond Scott, who had been GEBCO Permanent Secretary from 1974 to 1995, had been awarded the status of Doctor of Science *honoris causa* by the Russian Academy of Sciences. This had come about thanks to the interventions of Gleb Udintsev and John Hall. The status was conferred by documents from the Presidium of the Russian Academy of Sciences. In May 2010, in a ceremony at the Russian Embassy, London in the presence of Gleb Udintsev, and accompanied by his daughter and some other members of his family, Desmond Scott was presented with the official Diploma by the Russian Ambassador who made a 'very good and warm speech'.

## 21. DATES AND PLACES OF MEETINGS IN 2011 AND 1012

127. 21.1 2011 meetings. It was accepted that SCUFN would meet separately in 2011 but that it would be better for the Guiding Committee, TSCOM and iSCRUM to meet together.
128. Offers to host the 2011 meetings had been received from the USA, PRC and IHB, Monaco (possibly jointly with IOC in Paris).
129. In discussion the following points were made.
130. It was better to meet in a place(s) where there were already a wide range of disciplines interested in ocean mapping, partly so as to have a successful Science Day.

131. It is better to meet over a single extended week to limit travel.
132. Maybe stronger links need to be forged with Chinese scientists before GEBCO meets in the PRC. It also emerged that the PRC was reluctant to host more than around 25 visitors. It was likely that SCUFN would meet in the PRC in 2011.
133. In conclusion, Robin Falconer said that, having considered all the options, it was clear that the most suitable location for the Guiding Committee, TSCOM and iSCRUM to meet was somewhere in the USA at a lab where there was an active ocean mapping group. The dates would have to be decided after finding a host institution. **It was agreed that it would be better to meet at a single venue, that May 2011 was too early and that a decision ought to be made by the end of December 2010 [Action: Lisa Taylor, Chris Fox].**
134. 21.2 2012 meetings. Offers to host the 2012 meetings were received from the PRC and Stockholm, Sweden. It was noted that the Hydrographic Conference would take place in May-June 2012.
135. Before closing the meeting Robin Falconer thanked the DHN hosts for their excellent hospitality. He also thanked the GEBCO Permanent Secretary, Bob Whitmarsh, who was standing down after ten years in the post.

## **ANNEX 1**

### **Twenty-seventh Meeting of the GEBSCO Guiding Committee at Centro Naval del Peru (Navy Club) in San Borja, Lima, Peru**

**9.00 am, Saturday 18<sup>th</sup> September, 2010**

## **AGENDA**

1. **WELCOME**
2. **SECRETARIAL ARRANGEMENTS (FROM JANUARY 2011) (Falconer)**
3. **GEBSCO GLOBE - policy issues only (Anderson)**
4. **WORLD MAP (Park)**
5. **IHO REPORT (Gorziglia)**
6. **IHO/IRCC-1 MEETING (Gorziglia)**
7. **IHO DCDB REPORT – policy issues only (Taylor)**
8. **IOC REPORT (Fonseca)**
9. **DIGITAL ATLAS MANAGER REPORT - policy issues only (Weatherall)**
10. **BATHYMETRIC EDITOR REPORT - policy issues only (Jacobs)**
11. **SCUFN REPORT (Schenke)**
12. **TSCOM REPORT (W Smith)**
13. **iSCRUM REPORT (Jakobsson)**
14. **REVISION OF GUIDELINES DOCUMENT B-7 (Shipman)**
15. **OUTREACH WORKING GROUP REPORT (Lusiani)**
16. **NF/GEBSCO TRAINING PROJECT MANAGEMENT COMMITTEE  
REPORT (Falconer)**
17. **NIPPON NEW MANAGEMENT STRUCTURE AND NEW NIPPON  
PROJECTS (Falconer)**
18. **FUTURE TREASURER ARRANGEMENTS (Falconer)**
19. **REVIEW OF COMMITTEE/SUB-COMMITTEE/WORKING GROUP  
STRUCTURES (Falconer)**
20. **ANY OTHER BUSINESS**

**21. DATES AND PLACES OF MEETINGS IN 2011 AND 2012 (Secretary)**

**ANNEX 2****GEBCO PERSONALITY LIST***(Last Revised 30 September 2010)***JOINT IOC-IHO GUIDING COMMITTEE FOR GEBCO****IOC**

Dr Robin K.H. Falconer (Chairman)  
(Vacancy)  
Dr Martin Jakobsson  
Dr Hans-Werner Schenke (Chairman SCUFN)  
Dr Nataliya Turko

**IHO**

Ingénieur général Etienne Cailliau  
Dr Chris Fox (Vice-Chairman)  
Commander Paolo Lusiani  
Dr Kunio Yashima  
Ms Hyo-Hyun SUNG

Dr Walter Smith (Chairman TSCOM)

Ms Lisa Taylor (Director, IHO Data Center for Digital Bathymetry)

**TECHNICAL SUB-COMMITTEE ON OCEAN MAPPING  
(TSCOM)**

Dr Walter H. F. Smith (Chairman)  
Mr Norman Z. Cherkis  
Dr John K. Hall  
Dr Hans-Werner Schenke  
Mr Shin Tani  
Ms Paola Travaglini

**SUB-COMMITTEE ON UNDERSEA FEATURE NAMES (SCUFN)**

Dr Hans-Werner Schenke (Chairman)  
Ms Ana Angelica ALBERONI  
L Cdr Harvinder Avtar  
Cdr Muhammad BASHIR  
Mr Norman Cherkis  
Dr. Ksenia Dobrolyubova  
Dr Hyun-Chul HAN  
Ing.en Chef Michel Huet (Secretary)  
Dr Yasuhiko Ohara  
Lic. W. Reynoso  
Dr Vaughan Stagpoole  
Mrs Lisa Taylor

*Adviser/Observer:*

Mr. Trent Palmer  
Dr L. Fonseca

**OUTREACH WORKING GROUP**

Cdr Paolo Lusiani  
Ms Hyo Hyun SUNG  
Ms Paola Travaglini  
Ms Pauline Weatherall

**NIPPON FOUNDATION/GEBCO TRAINING PROJECT  
MANAGEMENT COMMITTEE**

Dr Robin K.H. Falconer (Chairman)  
Mr Robert Anderson  
Dr Martin Jakobsson  
Prof David Monahan (Project Manager)  
Cdr Hugo Montoro  
Mr Tsaisei Morishita  
Mr Shin Tani  
Dr Rochelle Wigley  
Prof. Bob Whitmarsh (Secretary)

**INTERIM SUB-COMMITTEE ON REGIONAL UNDERSEA  
MAPPING (ISCRUM)**

Dr Martin Jakobsson (Chairman)  
Mr Colin Jacobs (Vice-Chairman)  
Cdr Hugo Montoro  
Other members to be appointed

**NIPPON FOUNDATION/GEBCO TRAINING PROJECT SCHOLARS**

Mr Clive Angwenyi (2005)  
Cdr Hugo Montoro (2005)  
Mr Taisei Morishita (2005)  
Lt Cdr Abubakar Mustapha (2005)  
Lic. Walter Reynoso (2005)  
Ms Shereen Sharma (2005)  
Dr Karlapati Srinivas (2005)  
Cdr Muhammad BASHIR (2006)  
Lt Jorge Luis Heredia BUSTAMANTE (2006)  
Mr Djoko HARTOYO (2006)  
Lt Apolonio M. Lagonsin (2006)  
Dr Tsuyoshi YOSHIDA (2006)  
Mr Jose GIANELLA (2007)  
Mr Vasudev MAHALE (2007)  
Mr Nguyen Duy THANH (2007)  
Lt Leonardo TUN Humbert (2007)  
Mr Katagiri YASUTAKA (2007)  
Mr Muhammad YAZID (2007)  
Ms Daniela Maria Silva Gonçalves (2008)

Dr Koji Ito (2008)  
Mr Priyantha Jinadasa (2008)  
Mr Neil Tinmouth (2008)  
Lt Cdr Mohammad Jashim Uddin (2008)  
Dr Rochelle Wigley (2008)  
Dr Kentaro KANEDA (2009)  
Ms Christina Franco de LACERDA (2009)  
Mr Felipe Rafael BARRIOS Burnett (2009)  
Ms Anastasia Abramova (2009)  
Mr Guillermo Humberto DIAZ PEÑA (2009)  
Lieutenant Rachot OSIRI (2009)  
Mr James Daniell (2010)  
Mr Francis Fletcher Freire (2010)  
Mr Athur Yordan Herwindya (2010)  
Ms Bernice Geraldine Mahabier (2010)  
Mr Naoto Ujihara (2010)  
Ms Yulia Zarayskaya (2010)

### **GEBCO PERMANENT SECRETARY**

Prof. Bob Whitmarsh (until 31 December 2010)

Mr David Clark (from 1 January 2011)

### **GEBCO BATHYMETRIC EDITOR**

Mr Colin Jacobs

### **GEBCO DIGITAL ATLAS MANAGER**

Ms. Pauline Weatherall

### **REPRESENTATIVES OF THE IOC SECRETARIAT AND THE I.H. BUREAU**

Dr Luciano Fonseca, Intergovernmental Oceanographic Commission  
Captain Hugo Gorziglia, Director, International Hydrographic Organization  
Commander Steve Shipman, International Hydrographic Bureau

### **SCIENTIFIC ADVISORS**

RADM Christian Andreasen  
Dr. David L. Divins  
Ing. prin. Laurent Louvart  
Dr Larry A. Mayer  
Dr German Naryshkin  
Capt George B Newton  
Dr Gleb Udintsev

**CORRESPONDING MEMBERS**

Dr Galina Agapova  
Mr James Braud  
Dr Juan Brown  
Dr Suzanne Carbotte  
Dr Sungjae CHOO  
Dr Marie-Helène Cormier  
Dr Ray Cramer  
M C Luis A DELGADO Argote  
Mr Daniel P. Donnell  
Dr Margo Edwards  
Lt Cmd Luis Antonio Félix  
Dr R.L. Fisher  
Dr. Valeriy Fomchenko  
Dr Sarah Gille  
Dr Bruce Goleby  
Cmdr Lars Hansen  
Mr Benjamin Hell  
Dr Troy L. Holcombe  
Dr. Russell Howorth  
Mr Peter Hunter  
Dr Don Hussong  
Prof. JIN Ji Ye  
Sir Anthony Laughton  
Prof. LIN Shao Hua  
Dr. Karen M. Marks  
Dr Carlos Mortera  
Dr Eric Moussat  
Dr Christian de Moustier  
Mr Tony Pharaoh  
Lt Cdr Rafael PONCE Urbina  
Dr. William B. F. Ryan  
Mrs Lois C. Varnado  
Mr John W. von Rosenberg  
Dr David Wells  
Prof. Ian Wright  
Prof. Harry Yeh  
Mr Alexei A. Zinchenko

**CHAIRMEN/CHIEF EDITORS: IOC'S REGIONAL OCEAN MAPPING PROJECTS**

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Captain Esteban Uribe (Vice-Chairman IBCCA)  
Ing. Mario A. REYES Ibarra (Chief Editor IBCCA)  
Vacant (Chairman IBCEA)  
Vacant (Chairman IBCM)  
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Commander Mario Proaño (Chairman IBCSEP)

Dr Hans-Werner Schenke (Chairman IBCSO)  
Vacant (Chairman & Chief Editor IBCWIO)  
Prof. Shao Hua Lin (Chairman IBCWP)  
Vacant (Chief Editor IBCWP)

**The mailing addresses and other contact details of all the people listed above, plus those currently active in GEBCO, can be found on the GEBCO web site. An Alphabetical contact list of names, which is regularly updated, can be found at,**

**[http://www.gebco.net/about\\_us/contact\\_us/](http://www.gebco.net/about_us/contact_us/)**

## ANNEX 3

### Acronyms

ACUF	Advisory Committee on Undersea Features
AGU	American Geophysical Union
BODC	British Oceanographic Data Centre
CCOM	Centre for Coastal and Ocean Mapping
CGOM	Consultative Group on Ocean Mapping
DCDB	Data Center for Digital Bathymetry
DHN	Dirección de Hidrografía y Navegación
ENC	Electronic Navigational Chart
GA	Geoscience Australia
GIS	Geographical information system
HO	Hydrographic Office
IALA/AISM	International Association of Marine Aids to Navigation and Lighthouse Authorities/ Association Internationale de Signalisation Maritime
IBC	International Bathymetric Chart
IBCAO	International Bathymetric Chart of the Arctic Ocean
IHB	International Hydrographic Bureau
IHO	International Hydrographic Organization
IMO	International Maritime Organization
IOC	Intergovernmental Oceanographic Commission
IRCC	Interregional Coordination Committee
iSCRUM	Interim Sub-Committee for Regional Undersea Mapping
LDEO	Lamont-Doherty Earth Observatory
netCDF	Network Common Data Form
NF	Nippon Foundation
NGDC	National Geophysical Data Center, Boulder (USA)
NOCS	National Oceanography Centre - Southampton
PMEL	Pacific Marine Environmental Laboratory
POL	Proudman Oceanographic Laboratory (Liverpool, UK)
PRC	People's Republic of China
RHC	Regional Hydrographic Commission
SCUFN	Sub-Committee on Undersea Feature Names (GEBCO)
SID	Source Identifier
ToR/RoP	Terms of Reference/ Rules of Procedure
TSCOM	Technical Sub-Committee on Ocean Mapping (GEBCO)
UNH	University of New Hampshire
WCATWC	West Coast and Alaska Tsunami Warning Center
WG	Working group