

Distribution: limited

IOC-IHO/GEBCO Guiding Committee XXIV,
Sub-Committee on Digital Bathymetry XXIII,
Sub-Committee on Undersea Feature Names XIX, XX
English only
7 January 2008

INTERGOVERNMENTAL OCEANOGRAPHIC
COMMISSION
(of UNESCO)

INTERNATIONAL HYDROGRAPHIC
ORGANIZATION



General Bathymetric Chart of the Oceans (GEBCO)

Twenty-fourth Meeting of the GEBCO Guiding Committee
7-8 November 2008

at

Intergovernmental Oceanographic Commission of UNESCO,
Paris, France

with Summary Reports of the

**Twenty-third Meeting of the Sub-Committee on Digital
Bathymetry**
11-13 September , 2007

and the

**Nineteenth and Twentieth meetings of the Sub-Committee on
Undersea Feature Names**
21-23 June, 2006 and 9-12 July, 2007

TABLE OF CONTENTS

	<i>Page</i>
1. OPENING OF THE MEETING _____	1
2. CONDUCT OF THE MEETING _____	2
3. WHAT HAVE WE BEEN DOING? _____	2
3.1 ONGOING PROJECTS _____	2
3.1.1 Sub-Committee on Digital Bathymetry, including reports from the Bathymetric Editor and the Digital Atlas Manager _____	2
3.1.1.1 Soundings from Electronic Navigation Charts and response from France. _____	4
3.1.2 Sub-Committee on Undersea Feature Names _____	4
3.1.3 Nippon Foundation/GEBCO Training Project _____	4
3.1.4 Regional Issues WG _____	6
3.1.5 Outreach WG _____	6
3.1.6 GEBCO publications on the web site _____	6
3.1.7 GEBCO accounts _____	6
3.1.8 Finance WG _____	6
3.1.9 Permanent Secretary's Honorarium for 2007 _____	7
3.2 MAPPING PROJECTS _____	7
3.2.1 GEBCO World Map, charges and its distribution _____	7
3.2.2 Regional mapping projects _____	7
3.2.2.1 IBCAO _____	7
3.2.2.2 IBCSO _____	7
3.2.2.3 IBCSEP _____	7
3.2.2.4 IBCCA _____	7
3.2.2.5 IBCM _____	7
3.2.2.6 IBCs in general _____	7
3.2.3 Nippon Foundation students' maps _____	8
3.2.4 International Steering Committee for Global Mapping _____	8
3.2.5 OneGeology of International Year of Planet Earth _____	8
3.3 RECENT PROJECTS _____	8
3.3.1 Tsunamis and GEBCO _____	8
3.3.2 GEOSS/GEO _____	8
3.3.3 National Geographic Maps _____	8
3.3.4 Google and web mapping _____	8
3.3.5 GeomapApp Lamont Project _____	9
3.3.6 New World Grid _____	9
3.4 OTHER ACTIVITIES _____	9

3.4.1 Updating IHO M-3 document	9
3.4.2 Meeting on bathymetry in Korea	9
4. PEOPLE WHO HAVE BEEN DOING IT	9
4.1 Guiding Committee membership	9
4.1.1 How to 'start the clock' with anticipated new Rules of Procedure	9
4.2 Other appointments	10
4.2.1 Personality List	10
5. WHERE ARE WE GOING?	10
5.1 Organizational Drivers: IHO and IOC	10
5.1.1.3 Financial support of GEBCO by the IHB	11
5.1.2.1 IOC 'Heads of Subsidiary Bodies' and 'Executive Council' meetings June 2006	11
5.1.2.2 24th General Assembly of the IOC	11
6. WHAT DO WE NEED TO DO TO GET US WHERE WE ARE GOING?	12
6.1 New Mission Statement if needed	12
6.2 New Strategic Plan if needed	12
6.3 Review of existing Working Groups	12
6.4 New Working Groups if needed	12
7. HOW DO WE TELL THE WORLD AND EACH OTHER THAT WE ARE GETTING SOMEWHERE?	12
7.1 GEBCO URL web site statistics	12
7.2 Transfer of GEBCO web site to BODC	12
7.3 Outreach	14
7.4 EOS article about GEBCO and the grid	14
8. ANY OTHER BUSINESS	14
8.1 IOC Support	14
8.2 Tsunami inundation maps	14
8.3 GEBCO in Training courses	14
8.4 Harmonisation of Antarctic undersea feature names	14
9. DATES AND PLACES OF MEETINGS IN 2008 AND 2009	14
9.1 Meetings in 2008	14
9.2 Meetings in 2009	15

ANNEXES

1. Agenda
2. Sub-Committee on Digital Bathymetry (SCDB) Report
3. Sub-Committee on Undersea Feature Names (SCUFN) Report
4. GEBCO Accounts at Southampton University
5. Finance Working Group
6. Personality List
7. Acronyms

1. OPENING OF THE MEETING

1. The Twenty-fourth meeting of the joint IOC-IHO General Bathymetric Chart of the Oceans Guiding Committee (GC XXIV) was held at the Intergovernmental Oceanographic Commission of UNESCO, rue Miollis, Paris, France on 7th and 8th November 2007. Those present were Dave Monahan (Chairman), Bob Anderson, Juan Brown, Etienne Cailliau, Robin Falconer, Chris Fox, Jose Frias, Hugo Gorziglia, Martin Jakobsson, Paolo Lusiani, Hans-Werner Schenke, Steve Shipman, Shin Tani, Dmitri Travin, Natalya Turko, Kunio Yashima and Bob Whitmarsh (Secretary).
2. Mr Travin welcomed the Guiding Committee to IOC. He regretted that Dr Bernal was away but said he would formally welcome the Committee the following day. The Chairman thanked Mr Travin for his welcome and extended a special welcome to Dr Martin Jakobsson who was attending the Guiding Committee for the first time.
3. There were no apologies for absence.
4. Dr Patricio Bernal addressed the Committee on the second day. He stated that the IOC was maintaining its long-standing support of GEBCO and that he wanted to be supportive as far as the priorities of Member States allowed. He explained that IOC was working under three main streams.
5. The first, co-ordination in ocean science, included some climate-related programmes, coastal management and the GLOBEC and SOLAS projects.
6. The second, ocean observatories, included support of surface floats and ARGO buoys as well as the use of ships of opportunity.
7. The third stream is capacity building particularly in Africa. Problems of re-integration arose when trained personnel returned home but IOC was working on this and slowly getting good results.
8. Dr Bernal continued that IOC had struggled to keep ocean mapping going but linking it to the post-December 2004 tsunami-warning activities, which had led to a doubling of the IOC budget, had helped. However, he noted that most of a tsunami's run-up depended on coastal topography and on the immediate offshore area where depths were less than 50m deep.
9. The Chairman pointed out that deep-water bathymetry also had a role to play because it affected the travel-times of tsunamis. He added that GEBCO in its own way was building capacity through the NF-GEBCO Training Project. He acknowledged that GEBCO could be better at telling the world what it did.
10. Dr Bernal noted that the lack of centres that collected bathymetric data was a problem and estimated that perhaps only 30-40% of bathymetric data found its way to a data centre. Dr Fox responded that in his experience there was an 'avalanche' of digital data.
11. Dr Falconer said that two years ago GEBCO had learnt of the biannual review cycle for GEBCO support and asked about the current situation. Dr Bernal replied that GEBCO's support had been absorbed into the tsunami budget and that in the last four years funding had been very unstable. As a result of the December 2004 tsunami the IOC budget had been increased by USD500,000 but even so the IOC budget represented only 1.2% of the total UNESCO budget.
12. Dr Jakobsson noted that he worked with physical oceanographers who wanted to model right down to the deep-sea bed to which Dr Bernal responded that he recognised the importance of benthic studies.

13. Dr Schenke noted the important conclusions of SCOR WG107 and the activities of groups such as SOOS and GOOS and wondered whether IOC could encourage cooperation between GEBCO and such groups.

2. CONDUCT OF THE MEETING

14. The Agenda in Annex 1 was accepted.

3. WHAT HAVE WE BEEN DOING?

3.1 ONGOING PROJECTS

3.1.1 Sub-Committee on Digital Bathymetry, including reports from the Bathymetric Editor and the Digital Atlas Manager

15. A full report is presented in Annex 2. In the absence of Dr Smith, who had been unable to travel to Paris, Mr Tani presented the report on the activities of the SCDB since the last Guiding Committee meeting. In particular he mentioned the meeting that SCDB had held at Lamont-Doherty Earth Observatory (LDEO) from 11-13 September 2007. About 33 people had attended, mostly from GEBCO and LDEO itself.
16. Capt Gorziglia asked the Committee to declare its policy on acquiring 'shallow-water' data in the context of a letter from SHOM, France addressed to the IHB Directors on this subject. The Committee discussed this item later in Section 3.1.1.1.
17. In a telephone conversation with the Committee, Dr Smith elaborated on the definition of the so-called Memorandum of Agreement (MOA) grid which was based on a legal agreement between US Government Agencies. He said that it includes data from between 81°N and 81°S from re-processed satellite altimetry, data provided by various US Agencies and data provided by Ms Weatherall and Mr Jacobs which had been extracted from ENCs. The MOA grid was not solely a US product but truly international; it depended on contributions from BODC, AWI, Australia and Japan among others. He concluded that the SCDB viewed the MOA as a major contribution to the next GEBCO grid. The MAO could be extended northwards using the IBCAO; south of 81°S it would be necessary to add Antarctic topography. Dr Smith added that the MOA group envisaged two products 1) a restricted and secret version and 2) a publicly available version, which could be distributed by NGDC, which was weighted by the most recent or GEBCO-sourced data. He noted the importance of good metadata to underpin grid updates.
18. In answer to questions, Dr Smith said that the accuracy of satellite 'depths' near coasts was dependent on the size of the satellite gravity grid and on local geology. He continued that once some 'ugly looking areas' had been fixed the grid should be useable maybe by late 2007 or early 2008. It should be possible for anyone to update the grid, for example with their own data, using shared software. Quality control of the data should be necessary only once. However to ensure confidence in the new grid GEBCO should first set up some sort of reviewing process.
19. Finally the Chairman asked what recommendations the SCDB had for the Committee. Dr Smith replied that he would submit these overnight by email; one example was the Guiding Committee deciding to adopt the MOA as the basis of the next GDA.
20. The Committee discussed three recommendations submitted informally by email by the Chairman of SCDB. The recommendations were as follows,

21. **A: “SCDB recommends that GEBCO will adopt the MOA [grid] as the starting point for the next global model with mechanisms for continual updates handled under GEBCO’s framework with process for peer review. The framework implies that a GEBCO data centre captures and maintains the data quality control/cleaning efforts. “**
22. Dr Brown began by saying that the recommendation was unclear and that it made no mention of the resources required. It was also unclear what review process was envisaged. Dr Jakobsson said that he endorsed using the MOA grid as a starting point but that SCDB needed to work out a strategy of how to work at a regional scale and whether to include IBCs as well. Dr Fox was in favour of endorsement, he could see no other way forward, but he was concerned about how the review process would work. It was too much to expect the Digital Atlas Manager or Bathymetric Editor to do it and the Guiding Committee should define the process. Drs Turko and Schenke agreed that regional grids should be reviewed locally by some sort of ‘Editorial Board’.
23. Dr Falconer opined that it was not the role of SCDB to carry out the review and a separate body was needed. He added that geologists were better suited than the grid ‘technicians’ to check a grid.
24. The Chairman intervened to say that there were two issues 1) the technical checking of the grid and 2) the geological reality of the result. Who should carry out each function? Dr Jakobsson concurred that a formal review structure on a regional basis was required to act between the data sources and the Digital Atlas Manager who finally had to work with the data.
25. Finally the Committee agreed to endorse Recommendation A with the proviso that an Editorial Board is established to cover the peer review of the grid.
26. Subsequently the Committee agreed that members should send the names and addresses of potential reviewers, who might already be involved in an IBC, to the Bathymetric Editor [Action AII].
27. **B: “SCDB recommends that GEBCO should solicit contributions of the highest resolution data available – with options to provide data at a lower resolution. The original data could be served [provided] by the originator or by other data centres with GEBCO providing the central link to these repositories.”**
The Committee endorsed Recommendation B.
28. **C: “SCDB recommends that GEBCO should serve [provide] its products on-line, making use of web services (protected for example by watermark and pop-up box requiring the acceptance of terms limiting its use).”**
The Committee endorsed Recommendation C.
29. The Committee was also asked how SCDB should respond to invitations offering to host a meeting. The answer was to consult the Guiding Committee first.
30. Finally SCDB wished to learn the Guiding Committee’s response to statements in the SCDB XXIII Minutes that, “GEBCO needs to facilitate data contributions, and to that end, needs a data policy that addresses concerns, for example as raised by SHOM. SCDB suggests that the policy makes clear that GEBCO products are not [to be used] for navigation. We suggest that GEBCO should develop a means of protecting proprietary data so that the generalised model can benefit from data that may be contributed under restricted terms. It is not GEBCO’s intent to redistribute raw data, unless asked to by the originator. We should learn from the efforts of other groups working on similar policies”. The Committee decided that a policy on protecting proprietary data needed more work and that it could not agree to this statement in its current form.

3.1.1.1 Soundings from Electronic Navigation Charts and response from France.

31. While noting that GEBCO was only asking for soundings and that most ENC's contained rather few soundings anyway, the Committee noted several options 1) to hold all the data derived from ENC's and not pass it on or 2) to ask HO's to decimate the data before passing it to GEBCO. Capt Gorziglia remarked that the HO's had provided data in different forms and that they were free to impose whatever constraints they wished. Ing gen Cailliau said that he had had constructive discussions with SHOM to explain GEBCO's intentions in asking for ENC soundings. SHOM had responded that, even if data were used only to populate a grid, it wished to treat requests for data from each area on a case-by-case basis. The Committee accepted that it was up to each HO to operate as it wished.

3.1.2 Sub-Committee on Undersea Feature Names

32. A full report is presented in Annex 3. Dr Schenke reported that SCUFN XIX had met in Bremerhaven from 21-23 June 2006. There had been a very good attendance with 10 out of 12 members, 10 observers and 2 in a liaison capacity plus the SCUFN Secretary. New member Dr Han from Korea had joined SCUFN. A sub-group of the Chairman, Secretary, Albert Theberge and Norman Cherkis had worked on drafting revised Terms of Reference/Rules of Procedure for SCUFN. SCUFN had also discussed improvements to IHO's document B-6 'Standardisation of Undersea Feature Names'. SCUFN was active in translating and publishing B-6 in Russian, Japanese and Spanish (and informally in Hungarian). Most of the rest of the meeting had been concerned with considering proposed feature names, either from the previous meeting or new ones. Good liaison was being built with ACUF and UNGEGN. The latter committee had decided in future not to name features after living persons. Their Chairman intended to attend future SCUFN meetings. SCUFN also discussed progress with improving the IHO B-8 document 'Gazetteer of Geographical Names of Undersea Features'. There were plans to improve the software used to enter proposed names and to build a web based interface, perhaps in conjunction with Google Earth. Finally, SCUFN was checking 72 names that had been proposed in the Central and Southern Pacific on the basis of satellite gravity anomalies.
33. Dr Schenke continued with a report of SCUFN XX which was held at the IHB in Monaco from 9-12 July 2007. Again 10 out of 12 members had been present, plus 10 observers and Guiding Committee member Dr Yashima. Dr Agapova had retired, after working for 33 years with SCUFN, as had L Cdr Rafael Ponce. Replacements for both members should be sponsored by IOC to restore the balance of the Sub-Committee [Action Mr Travin]. Following the rejection of the new Terms of Reference and Rules of Procedure by the IHC, a Working Group of 12 persons was formed to re-write in particular Clause 2.10. SCUFN again discussed document B-6, regarding changes to generic terms for undersea features, which Dr Schenke noted would need a new Editor in 2008. The Russian and Japanese translations had been approved and a new version in Korean was being created. Eighty-three feature names had been considered; less than half had been accepted. Finally Dr Schenke noted that SCUFN's next meeting would be on Jeju island, Korea in late May.

3.1.3 Nippon Foundation/GEBCO Training Project

34. Dr Falconer reported on the current status of the Nippon Foundation/GEBCO Training Project and on the meeting of the Project Management Committee which had met the previous day. He said he wanted to address four issues, the future of the project, a review of what the project had achieved, membership of the PMC and new initiatives. He paid tribute to the efforts of the Mr Monahan, Project Manager, in running the course and of Mr Tani in providing a valuable but informal interface with the Nippon Foundation.
35. The project so far. The project was now in its fourth year. Twenty-four students from 16 different countries will have been trained by late 2008. Of these 16 came from a hydrographic background. In the first three years only applicants from developing countries were accepted but in Year 4 this

had changed. The PMC had not met at UNH for almost two years but these visits were regarded as a very valuable way to get to know the students.

36. The future. After Year 4 the Nippon Foundation was looking for increased networking in line with their objective of capacity building. Although support was normally given on a year by year basis there were good signs that the project would be extended beyond the current year. Dr Falconer said that he and the Project Manager had tried to meet Mr Unno to discuss the future but without success because of scheduling problems; they also needed to make a courtesy call on the Nippon Foundation. Mr Tani had met Mr Unno briefly. In Year 6 (2009-2010) it was likely that the project would train fewer students while expanding the network. Currently networking elements included the opportunities that arose from visitors coming to UNH, the lab visits and participation in cruises. In future, regional mapping in areas such as the Indian Ocean, the East Pacific and the Southern Ocean could involve students and alumni. Another format was to run reunions with working sessions.
37. The PMC felt that it needed to plan now towards Year 6. A start could be made with a reunion next May in Japan around the time of the Guiding Committee and SCDB meetings. However, even though tactically it would be a good approach, there were possible funding problems with this scenario. However in Year 5 the project could potentially acquire funds for more networking by reducing the student intake.
38. Problem areas. Dr Falconer noted that tuition was provided for students whose mother tongue was not English. The students were encouraged to work together and to join in with the social life at CCOM but the degree to which they worked as a team depended on several factors including their cultural background. He noted that the PM had found it difficult to set up mapping projects for the students. It was also difficult to find suitable ocean-going cruises for the students in July and August. The lab visits of 2-4 weeks required good pre-planning to generate productive projects but also afforded good opportunities for networking. As far as participation in GEBSCO was concerned many students were already involved in a variety of ways.
39. Student recruitment was a challenging area because it was not possible to advertise, e.g. in EOS, until the Nippon Foundation had approved funding and usually this did not happen until February or March yet the students had to arrive at UNH by late August. Because the signs were good that Year 5 would be funded he asked that all Guiding Committee members begin now to consider how they could recruit applicants from any country through their own contacts [Action All]. Capt Gorziglia said that he had been informed of the calls for Years 1-3 but not for Year 4. Dr Falconer regretted that in Year 4 the call had come very late but he acknowledged that the IHB Circular Letters had been helpful. Mr Tani suggested that he should talk to the Nippon Foundation first before the IHB could send out a Circular Letter in advance of the formal notification of funding [Action Mr Tani]. Dr Falconer noted that any draft Circular Letter for Year 5 students should clearly mention that applicants could now come from any country, not just less developed countries. Mr Travin opined that from the IOC viewpoint there seemed to be a lack of transparency over the student selection and requested that he be sent the criteria.
40. Dr Turko referred to the IOC programme 'Ocean Teacher' which provided on-line training in oceanography. She asked whether the earlier proposal for a manual based on the UNH course could now be activated and even lead to a similar approach to Ocean Teacher. The Project Manager replied that GEBSCO could only do what it was funded to do. However, he planned to pull all his lecture notes together from the past four years into the form of a manual. Dr Turko then commented that bathymetric maps had been created within the Oceanographic Data and Information Network (ODIN) of the International Oceanographic Data and Information Exchange (IODE) within IOC. She suggested that the NF scholars could similarly work within such regional networks and commented that this seemed to be an example of poor communication within IOC.

41. Membership of the PMC. Dr Falconer noted that the Committee currently had eight members plus the Project Manager and Secretary. It operated without Nippon Foundation support and depended on GEBCO for funding. Dr Falconer said that he envisaged cutting back to 4-5 members, many of whom were already heavily involved in GEBCO, and adding 3-4 alumni in their place. He asked that the Guiding Committee should ratify the new committee by the end of the meeting [Action Chairman, Dr Falconer].

3.1.4 Regional Issues WG

42. The Permanent Secretary read an e-mail message dated 6 November 2006 that he had received from Mr Macnab asking that the Working Group be closed down. The Committee concurred.

3.1.5 Outreach WG

43. Cdr Lusiani reported that after the WG was set up at the Bremerhaven meeting in 2006 he had contacted a number of people, Ms Weatherall, Capt Theberge and two others. After he had contacted two Italian magazines with a proposal to circulate Mr Tani's fly-through video over the Northwest Pacific he had concluded such magazines were entirely driven by profit and there was no future in further discussions. He had next contacted a specialist magazine (Revista Marítima) catering for naval/marine interests. This magazine had expressed some interest in publishing a book supplement such as the History of GEBCO. Cdr Lusiani proposed to translate (part of) the 'History of GEBCO' book but he said that he would need access to some of the original figures. However, there appeared to be a potential copyright problem (the book copyright appears to rest with the publishers GITC although this might not apply to a translation) which the Secretary said he would check [Action Secretary].
44. Cdr Lusiani continued that he had also considered working with the ENEA Antarctic project of the Italian National Antarctic Research Programme (PNRA) as a way of interesting schools in bathymetry. If this approach was successful he proposed to extend it to other countries. Dr Jakobsson added that he had already make contact with numerous schools in Sweden by donating copies of the new World Map and pointed out that the 2004 tsunami had raised awareness at all levels of society of the importance of ocean mapping. Dr Turko proposed that courses run by the International Centre for Theoretical Physics in Trieste might be another way of raising awareness of the oceans among academics. Dr Brown opined that the best way to get GEBCO better known was to ensure that Google Earth contained GEBCO's bathymetry.
45. Finally Capt Gorziglia noted that 400 copies of the 'History of GEBCO' book remained in IHB. The Committee agreed that these could in future be given away free, but limited to visitors, and that some proportion of the books would also be sent to IOC to distribute in a similar fashion [Action Capt Gorziglia].

3.1.6 GEBCO publications on the web site

46. The Secretary explained the background to this item but reported that Mr Jacobs had decided he had higher priority work to do than address this project with poorly defined boundaries.

3.1.7 GEBCO accounts

47. The Secretary presented a summary of the two GEBCO accounts held in Southampton University (Annex 4). He noted that, although it was not possible to present exact figures on this occasion, because the University had recently transferred to a new financial system which was not fully implemented, both accounts appeared to have a substantial surplus even after discounting for future commitments.

3.1.8 Finance WG

48. The Secretary presented a report from Dr Hall, Chairman of the Finance Working Group (Annex 5).

3.1.9 Permanent Secretary's Honorarium for 2007

49. After prolonged discussion the Committee decided to increase the Secretary's annual honorarium to €5000 from 2007.

3.2 MAPPING PROJECTS

3.2.1 GEBCO World Map, charges and its distribution

50. The Secretary outlined the request from the Bathymetric Editor for advice on how to distribute copies of the World Map now lying in Southampton. Dr Jakobsson was in favour of distributing the maps from regional centres. Drs Fox and Brown offered to use their access to stands at the Fall 2007 AGU and OI 2008 meetings to give out the maps [Action Bathymetric Editor]. The Chairman offered to send the addresses of UNH alumni to the Bathymetric Editor [Action Chairman].

3.2.2 Regional mapping projects

3.2.2.1 IBCAO

51. Dr Jakobsson reported that he was preparing a new grid in time for the Fall 2007 AGU meeting. Once incorrect submarine tracks had been replaced and new data added, the grid would form Version 2.0. [<http://www.ngdc.noaa.gov/mgg/bathymetry/arctic/arctic.html>]

3.2.2.2 IBCSO

52. Dr Schenke reported that the IBCSO was well supported by SCAR, IHC, IOC, SCOR and GEBCO. He added that the IBCSO will be at the same projection and scale as the IBCAO. It is planned to include the coastline, magnetic and gravity anomalies, sediments and land topography (using the 25m resolution DEM of the Radar Antarctic Mapping Project; RAMP), as well as the latest undersea feature names, in a multilayered GIS. There will be an open science planning workshop in St Petersburg in July 2008 and a presentation will be made at a meeting in Brasilia as well. [www.ibso.com]

3.2.2.3 IBCSEP

53. Capt Gorziglia reported that the regional Hydrographic Commission of the South-East Pacific, which included the members of the IBCSEP Editorial Board, had met in 2001, 2003 and 2005 and would meet in 2008. The IBCSEP Editorial Board had also met in Chile in 2006 and in Ecuador in March 2007. Of the planned 12 sheets, five were still being compiled and two were being finalised.

3.2.2.4 IBCCA

54. There was no discussion of this item.

3.2.2.5 IBCM

55. The Secretary reported the following message that he had received from Dr Hall. "I will be making a Powerpoint presentation on IBCM-II at 0.1' at the 15th meeting of the Mediterranean Black Sea Hydrographic Commission meeting in Valletta, Malta from October 22-24. In retirement I intend to work primarily on that, once the multibeam mapping here in Israel is finished, and the Arctic hovercraft program is running smoothly."

3.2.2.6 IBCs in general

56. Mr Travin drew the Committee's attention to the fact that there was a shortage of IOC funds for ocean mapping. It was hoped that the IBCCA could be brought to completion in 2007. He regarded the IBCWIO and the IBM as projects in abeyance and noted that the IBCWP was a huge project involving over 106 sheets none of which had been published. Dr Jakobsson recalled the Mr

Macnab was attempting to create an IBCNA (North Atlantic). Mr Travin replied that IOC was trying several non-IOC sources for funds to support this initiative. Dr Jakobsson added that he had a PhD student who was using the North Atlantic to develop a new method of handling metadata so progress was already being made on the IBCNA project. In answer to a question, Mr Travin responded that, although France had completed its commitments, there had been no action on the IBCEA by Spain or Portugal for the last four years; most sheets had been printed but the project needed to be reanimated. The Secretary noted that Dr Hall had told him that he intended to work on a revised IBM in his retirement.

57. Dr Falconer asked whether IBC data gets into the GEBCO grid. Dr Brown replied that Ms Weatherall was not aware that these data were available and he would ensure that they were brought to her attention [Action Dr Brown]. Capt Gorziglia added that all the IBCSEP data has been sent to the World Data Centre. Dr Fox noted that, if the grids were suitable, it should be straightforward to include IBC data in the GEBCO grid.

3.2.3 Nippon Foundation students' maps

58. There was no discussion of this item.

3.2.4 International Steering Committee for Global Mapping

59. The Chairman stated that the Chairman of the Steering Committee had not been invited to the Paris meeting but that he, Chairman GEBCO, knew him and would contact him in Canada.

3.2.5 OneGeology of International Year of Planet Earth

60. There was no discussion of this item.

3.3 RECENT PROJECTS

3.3.1 Tsunamis and GEBCO

61. There was no discussion of this item.

3.3.2 GEOSS/GEO

62. There was no discussion of this item.

3.3.3 National Geographic Maps

63. There was no discussion of this item.

3.3.4 Google and web mapping

64. Dr Fox noted that as a US government employee he was barred from favouring any one company so it was difficult for him to act as an intermediary between GEBCO and Google. He continued that it would be easy to add the GEBCO grid as another layer within Google Earth. He remarked that Google might well provide funds to GEBCO to help with preparing the grid for this eventuality; the Chairman of GEBCO only had to ask [Action Chairman]. Dr Fox ended by offering to prepare a presentation aimed at requesting funds [Action Dr Fox]. Dr Brown offered help from BODC as well [Action Dr Brown] but cautioned that GEBCO should obtain a non-exclusive contract. Dr Schenke added that undersea feature names should be included too. Finally Capt Gorziglia noted that the IHC had approved funds for global education by GEBCO. He suggested that the IHO could liaise with Google with or without the involvement of the Chairman GEBCO.

3.3.5 GeomapApp Lamont Project

65. Dr Fox introduced the concept of GeoMapApp. GeoMapApp is an integrated mapping application written in Java™ script which has been developed at Lamont-Doherty Earth Observatory and can be freely downloaded from www.geomapapp.org. It is designed to extract maps from sources on the world-wide web. He continued that the Lamont group has funds for creating multiply-nested grids so that if GEBCO could come up with a proposal for such technology it could be supported. The Chairman concurred and said that learning about GeoMapApp was now part of the NF/GEBCO Training Project. He pointed out that the displayed data did not have to exist at Lamont since GeoMapApp relied solely on links. Dr Fox continued that he would ask Dr Carbotte to link to the GDA grid and the Gazetteer of Undersea Feature Names on the GEBCO web site [Action Dr Fox]. Mr Tani attempted to give an on-line demonstration of GeoMapApp and showed how data, metadata, profiles and maps could all be displayed at a variety of scales and colours. Dr Jakobsson explained that GeoMapApp was just one of a number of free viewers; for example, GlobalMapper (www.globalmapper.com) was also available.

3.3.6 New World Grid

66. There was no discussion of this item.

3.4 OTHER ACTIVITIES

3.4.1 Updating IHO M-3 document

67. The IHB had asked GEBCO to review and update relevant parts of the IHB document M-3 ('Resolutions of the IHO'). Capt Gorziglia explained that the IHO wanted to standardise procedures and had requested that the text of M-3 is reviewed by specialist bodies whereupon the revisions will be sent to Member States by Circular Letter for approval. Subsequently Dr Jakobsson and Cdr Lusiani had been requested by GEBCO to revise the text. Dr Jakobsson reported that he had had to re-write a lot of the text, principally on 'Oceanic Sounding Data Exchange', because the existing text was quite out of date. He showed some of the revised text. Capt Gorziglia asked that any other relevant paragraphs would be added.
68. The Chairman congratulated Dr Jakobsson and Cdr Lusiani on a job well done and requested that they involve Drs Schenke and Fox in reviewing the checking of metadata [Action Dr Jakobsson, Cdr Lusiani]. Cdr Lusiani replied that he would circulate the text to the Committee [Action Cdr Lusiani] and noted that the deadline for completion was the end of December 2007. Mr Travin asked that a sentence be added to explain that the M-3 document was of use to non-hydrographers as well.

3.4.2 Meeting on bathymetry in Korea

69. There was no discussion of this item.

4. PEOPLE WHO HAVE BEEN DOING IT

4.1 Guiding Committee membership

70. There was no discussion of this item.

4.1.1 How to 'start the clock' with anticipated new Rules of Procedure

71. Dr Falconer noted that there was nothing at present in the Terms and Rules about how the current terms of office were to be calculated i.e. about 'starting the clock' and he asked what IHO or IOC recommended. Capt Gorziglia and Mr Travin intimated that it was up to GEBCO to decide how to do this but it might be better to plan the change-over in 2009.

4.2 Other appointments

72. There was no discussion of this item.

4.2.1 Personality List

73. The Secretary presented the current Personality List (Annex 6) and asked members for comments or corrections [**Action All**].

5. WHERE ARE WE GOING?

5.1 Organizational Drivers: IHO and IOC

74. The following discussion intermingled Agenda items 5.1.1.1, 5.1.1.2, 5.1.2.1, 5.1.2.2 and 5.1.2.3 covering both the IHO and the IOC.
75. Cdr Lusiani reported on the International Hydrographic Conference in May 2007 which he had attended. On behalf of GEBCO he had presented highlights of the past 5 years and then concentrated on the proposed new Terms of Reference and Rules of Procedure. Following the objections of South Korea and France, Cdr Lusiani thought it was better to present the revised Terms and Rules to the Extraordinary Conference in 2009 rather than in the form of a Circular Letter. Ing gen Cailliau reported that he had met the French Hydrographer and he now thought that the revised text might meet the French objections about co-opting members onto TSCOM. Capt Gorziglia responded that he wanted an earlier response from GEBCO in time to allow the new IHO structure to be in place by 1st January 2009. Cdr Lusiani asked whether the new arrangements could be applied to GEBCO without the approval of the IOC. Capt Gorziglia replied that the IOC Executive Council would meet in June 2008 by which time IHO approval would have been obtained.
76. Dr Falconer then summarised GEBCO's work on the Terms and Rules. He recalled how the preliminary discussions in Bremerhaven had been followed by an extensive email consultation in autumn 2006. The IHC had rejected the proposals in May 2007 and it now appeared that the IOC had not even considered them at its Assembly in June 2007. He said that problems existed in three main areas 1) membership of TSCOM, 2) the length of terms of office and the renewal of such terms and 3) the positions of Chairmen/Vice-Chairmen. In discussion it appeared that TSCOM members being appointed by the Guiding Committee would be acceptable to the IHO. Similarly the Committee agreed that all terms of office should be for 5 years; it also agreed how to renew these terms. Finally it was agreed that Chairmen/Vice-Chairmen could be appointed by Sub-Committees with the approval of the Guiding Committee and that Chairmen/Vice-Chairmen of the Guiding Committee could be appointed by the Guiding Committee members themselves from among the IOH/IOC sponsored members.
77. Mr Travin explained the IOC position and said that the IOC Assembly had been unable to consider the Terms and Rules in June 2007 because the papers had been submitted by GEBCO to IOC too late. He recommended that the way forward now was for a Member State to initiate the process of review in time for the Executive Council in June 2008. If this happened the IOC Secretariat would have to ensure that the proposals were considered. Cdr Lusiani responded that he had no problem with approaching the Italian national representative to initiate the review but it would help if other Member States supported the initiative [**Action Cdr Lusiani**]. Capt Gorziglia suggested that once feedback had been received from IHO Member States, in late February /early March, the IHO national representatives could brief their corresponding IOC representatives. Mr Travin reminded the Committee that IOC works by consensus so that a single objection in Executive Council could halt the whole process. Finally, it was agreed that the Secretary should remind Guiding Committee members to approach their IOC national representative(s) once the IHO Member States had received the Circular Letter setting out the revised Terms and Rules [**Action Secretary**].

78. Dr Fox asked about his position on the Guiding Committee since in 2009 he could become both an IOC-appointed Guiding Committee member and an ex-officio member. Dr Falconer responded that that would have to be worked out later.
79. Dr Falconer concluded by thanking those present for their efforts in drawing up the new Terms and Rules and said that he was satisfied that GEBCO was now on the verge of entering a new era with greatly improved and more transparent procedures.

5.1.1.3 Financial support of GEBCO by the IHB

80. Capt Gorziglia recalled that the IHO had been working on a quinquennial Programme Budget for 2007-2012. This had been approved by the recent Conference. GEBCO fell in Programme 3, “Techniques and Standards Coordination and Support” which covered the meetings of committees and working groups. The new budget covers the cost of one IHB person to attend meetings of the Guiding Committee in alternate years (see Table) and one IHB person to attend the annual meetings of SCUFN and SCDB. The approved budget also made provision to cover all the Tasks that were identified by GEBCO in the 5-year budget (see Table).
81. The first reaction of members of the Committee was that the funds allotted by the IHC were in fact rather disappointing for GEBCO. Cdr Lusiani said that he had prepared the tasks for the budget and that he had not received any input from other members of the Committee for any other tasks. He recalled that in Bremerhaven the Guiding Committee had said it would meet in alternate years. Capt Gorziglia explained that GEBCO could not ask for more funds until 2011 although he added that if a new priority arose it might be possible to reallocate resources. He opined that in 2007-2012 there was more likely to be a lack of human resources to support GEBCO rather than funds and that in future there might be only one attendee from the IHB.

5.1.2.1 IOC ‘Heads of Subsidiary Bodies’ and ‘Executive Council’ meetings June 2006

82. Mr Tani reported on the ‘Heads of Subsidiary Bodies’ and ‘Executive Council’ meetings which he had attended on behalf of GEBCO in Paris in June 2006. He had given a presentation on GEBCO and showed the new World Map. The Executive Secretary of the IOC had asked what work GEBCO was doing on tsunamis and Mr Tani had explained the link between deep-water bathymetry and computed tracks of tsunamis in models.

5.1.2.2 24th General Assembly of the IOC

83. Mr Travin recalled how some Member States had attempted to close down GEBCO during the Assembly. He said that he had tried to demonstrate the usefulness of ocean bathymetry and had gained support from the IHB and a number of states. The Assembly had finally agreed to keep Ocean Mapping and GEBCO but had reduced the budget significantly. So now IOC was prioritising its support for SCUFN (because of the sensitive nature of its work) and the development of new projects such as IBCSEP and IBCSO. It had been possible to organise only two meetings, first the IBCCA met in Cartagena, Colombia and second the IBCSEP Editorial Board had met in Ecuador, and to provide support for a SCUFN meeting in Monaco and partial support for an IBCSO meeting. In conclusion Mr Travin noted that since the December 2004 tsunami more people understood the importance of bathymetry for practical oceanography.
84. Dr Jakobsson commented that in his opinion the Committee had failed to reach out to tell the world of the importance of ocean bathymetry and that more outreach was needed at all levels. Mr Travin replied that he takes all opportunities to obtain publicity and cited a recent article he had co-authored in HydroInternational. Dr Jakobsson continued that too often ships were running with their swath-bathymetry system switched-off and he proposed that GEBCO should send a letter to funding agencies and similar organisations requesting that swath bathymetry systems were operated on passage and the data should be donated to GEBCO [Action Chairman]. In discussion it was agreed that the letter should at least recommend and encourage the relevant authorities to contribute data to a global database although it was recognised that there might be real practical problems of finding resources for watch keepers and system operators at sea. It was agreed that the

letter could be sent out as part of the IODE under the auspices of IOC/UNESCO and that it should be sent to the National Oceanographic Commissions or similar bodies (such as NOAA and the NSF in the USA) in Member States. Finally it was suggested that all members should help with the process by proposing suitable addresses to which the letter could be sent to IOC [Action All].

6. WHAT DO WE NEED TO DO TO GET US WHERE WE ARE GOING?

6.1 New Mission Statement if needed

85. The Chairman read out the current Mission Statement; ‘The General Bathymetric Chart of the Oceans (GEBCO) aims to provide the most authoritative, publicly-available bathymetry data sets for the world’s oceans’. There were no suggestions for change.

6.2 New Strategic Plan if needed

86. Dr Falconer recalled that a Strategic Plan had been worked on some years ago at several Guiding Committee meetings and he suspected that 95% of it was still relevant. The Chairman suggested that the latest version, dating from around May 2002, could be circulated and revised by email bearing in mind the new Terms of Reference and Rules of Procedure [Action Secretary]. Cdr Lusiani noted that the goals of GEBCO are clearly and succinctly laid out in the Preamble to the Guiding Committee Terms of Reference and that only a few specific tasks were not mentioned. The Chairman said that he would incorporate the Preamble into some new text [Action Chairman].

6.3 Review of existing Working Groups

87. In a brief review of the Working Groups that appear in the GEBCO Personality List the Committee decided to close down the Ad Hoc Strategy Planning Committee, the Working Group on Regional Problems and the Educational GDA Working Group. It was noted that several committees or Working Groups matched the goals of GEBCO mentioned above. It was also noted that in order for GEBCO to ‘Develop and constantly improve the authoritative description of global ocean depths’ somebody had to review the data that was provided to GEBCO so that it could truly be described as ‘authoritative’. Finally Drs Fox and Falconer offered to work on matching the eight goals to the activities of GEBCO [Action Drs Fox and Falconer].

6.4 New Working Groups if needed

88. There was no discussion of this item.

7. HOW DO WE TELL THE WORLD AND EACH OTHER THAT WE ARE GETTING SOMEWHERE?

7.1 GEBCO URL web site statistics

89. The Secretary briefly presented the latest statistics pertaining to the GEBCO web site for the period 3 March 2006 - 1 October 2007. It appeared that since April 2006 the number of hits/month had levelled out at around 27,000. The absolute number of enquiries from .com (up from 11% to 20% of the total) or .net (17%) sources had increased in 2007 whereas .gov and .edu had both declined (and in percentage terms too). The number of hits from non-US countries had also declined by about 20% across the board from 2006 to 2007.

7.2 Transfer of GEBCO web site to BODC

90. Dr Brown stated that the transfer was going ahead. Initially the web site would be transferred ‘as is’ but later it would be re-designed.

Table of funding support for GEBCO from IHO Work Programme (2008-2012)

Task No.	Task	Notes	Amount (€)
3.1	Meetings of Committees and Working Groups		
3.1.13	IHB attend GEBCO Guiding Committee	Participation funded by regular IHO budget (for 2009, 2011)	
3.1.14	IHB attend GEBCO SCDB	Participation funded by regular IHO budget for each year	
3.1.15	IHB attend GEBCO SCUFN	Participation funded by regular IHO budget for each year	
3.7	Ocean Mapping Programme		
3.7.1	Shallow water bathymetry	No funds were requested	
3.7.2	Bathymetric data integration	No funds were requested	
3.7.3	Maps and digital grids	No funds were requested	
3.7.4	New products	Funds to be spent on products proposed by the GC split between 2008, 2009 and 2010	10,000
3.7.5	Global education	GC to prepare a product for insertion of the SCUFN Gazetteer in global projects which are underway or under development. Funds split between three years (2010-2012?).	10,000
3.7.6	IHO Digital Bathymetry Data Center	No funds were requested or allocated	
3.7.7	IBC Projects	No funds were requested or allocated	
3.7.8	GEBCO Publications	Funds for GC and its sub-committees, with IHB support as required, to maintain and improve B-6, B-7, B-8 and B-9 and to study the future of the following former publications B-1, B-2 and B-4.	14,000 in the IHO regular budget

7.3 Outreach

91. See section 3.1.5.

7.4 EOS article about GEBCO and the grid

92. The Secretary noted that he had been in contact with Dr Goodwillie who considered that too much time had now passed since the release of the GEBCO grid for it to be worthwhile completing the EOS article that he had begun.

8. ANY OTHER BUSINESS

8.1 IOC Support

93. Mr Travin suggested that the Chairman should write to the Executive Secretary of IOC requesting that IOC maintain its current level of support for GEBCO. He wanted to elicit a statement in writing of IOC's commitment [Action Chairman].

8.2 Tsunami inundation maps

94. Dr Fox suggested that the NF students could work on tsunami inundation maps.

8.3 GEBCO in Training courses

95. Mr Travin stated that he wanted to include a basic knowledge of GEBCO in IOC training courses in the coming year because in his experience many scientists were unaware of the effects of deep-water bathymetry on ocean models. Dr Schenke said he had had a similar experience in his own lab. and supported the idea.

8.4 Harmonisation of Antarctic undersea feature names

96. Dr Schenke stated that, as Chairman of SCUFN, he had a project to harmonize the names of undersea features in Antarctic waters that appeared in the SCUFN Gazetteer and in the SCAR Composite Gazetteer on Antarctic Geographic Names. He asked whether GEBCO would help this project by contributing towards the support of a student for 6 months. Capt Gorziglia said that the IHO is supporting the project because ambiguous feature names are to be discouraged. The Committee agreed to give Dr Schenke €2000 in support of the student [Action Secretary].

9. DATES AND PLACES OF MEETINGS IN 2008 AND 2009

97. The Chairman recalled that SCUFN had received an invitation to meet in Korea and this would happen in the second half of May 2008. Meanwhile the Coast Guard of Japan would celebrate its 60th Anniversary in 2008 and so had invited SCDB to meet there. The Chairman declared that it was logical that the Guiding Committee should meet around the same time as SCUFN and SCDB. Dr Yashima announced that the Japanese Hydrographic Office would be pleased to host the Guiding Committee and SCDB in Tokyo after 19th May. Members noted several added constraints; the Antarctic Treaty Consultative Conference in Kiev (2nd – 13th June), the IHO Strategy Planning Working Group (May) and other IHB meetings in the week beginning 26th May to which Capt Gorziglia and Cdr Shipman were committed.

9.1 Meetings in 2008

98. The Committee finally agreed the following dates for 2008,
99. SCUFN 20th – 23rd May

SCDB 26th -28th May
Guiding Committee 29th – 30th May (or possibly 31st May).

100. Dr Yashima stressed that GEBCO should not be involved in political issues even before the proposed new GEBCO ToR/RoP (especially those of the SCUFN) had been adopted and had entered into force. Capt Gorziglia, for the IHO, and Dr Travin, for the IOC, said that this was already well understood within their respective organisations.

9.2 Meetings in 2009

101. Ing gen Cailliau reminded the Committee that the invitation to them and to the Sub-Committees to visit Brest, France in 2009 still stood. SHOM would probably be the hosts with visits arranged to Ifremer. He suggested that the best time to visit would be in late summer or early autumn.
102. The Chairman noted that an earlier invitation to visit India was also 'on the table' but there had been no recent contact about it.
103. Capt Gorziglia reminded the Committee that an Extraordinary Conference of the IHO would take place from 5th-9th June 2009 and the IOC General Assembly would occur around the same time. It was generally agreed that the GC, SCUFN and SCDB would meet in Brest, France in 2009 at dates to be determined.

This page is left blank intentionally

ANNEX 1

Twenty-fourth Meeting of the GEBCO Guiding Committee Intergovernmental Oceanographic Commission, Paris, France 7th-8th November, 2007

AGENDA

- 1. OPENING OF THE MEETING**
- 2. CONDUCT OF THE MEETING**
- 3. WHAT HAVE WE BEEN DOING?**

ONGOING PROJECTS

Sub-Committee on Digital Bathymetry, including reports from the Bathymetric Editor and the Digital Atlas Manager (Smith)

3.1.1.1 Soundings from Electronic Navigation Charts and response from France (Cailliau)

Sub-Committee on Undersea Feature Names (Schenke)

Nippon Foundation/GEBCO Training Project (Falconer)

Regional Issues WG (Macnab per Perm Sec)

Outreach WG (Lusiani)

GEBCO publications on the web site (Jacobs per Chair)

GEBCO accounts (Whitmarsh)

Finance WG (Hall per Perm Sec)

Permanent Secretary's Honorarium for 2007 (All)

MAPPING PROJECTS

GEBCO World Map, charges and its distribution (Jakobsson, Jacobs)

Regional mapping projects (IBCCA, IBCSO, IBCSEP, IBCEA, IBCM, etc) (Frias, Schenke, Gorziglia, Travin, Hall,

Nippon Foundation students' maps (Monahan)

International Steering Committee for Global Mapping (IHB)

OneGeology of International Year of Planet Earth (Jacobs per Perm Sec)

Others

RECENT PROJECTS

Tsunamis and GEBCO (?)

GEOSS/GEO (Fox)

National Geographic Maps (Smith)

Google and web mapping (Fox)

GeomapApp Lamont Project (Smith, Fox)

New World Grid (Smith)

OTHER ACTIVITIES

Updating IHO M-3 document (Jakobsson, Lusiani)
Meeting on bathymetry in Korea (Schenke)

4. PEOPLE WHO HAVE BEEN DOING IT

GUIDING COMMITTEE MEMBERSHIP

How to 'start the clock' with anticipated new Rules of Procedure (All)

OTHER APPOINTMENTS

Personality List (Perm Sec)

5. WHERE ARE WE GOING?

ORGANIZATIONAL DRIVERS

IHO

The XVIIth International Hydrographic Conference, May 2007 (Lusiani)

Response to the IHC rejection of new Rules of Procedure (Falconer, Cailliau)

Financial support of GEBCO by IHB Work Programme 2008-2012 (Gorziglia)

IOC

IOC 'Heads of Subsidiary Bodies' and 'Executive Council' Meetings in Paris, June 2006
(Tani)

IOC 24th General Assembly, June 2006 (Travin)

IOC's timetable to approve new Terms of Reference/Rules of Procedure (Travin)

6. WHAT DO WE NEED TO DO TO GET US WHERE WE ARE GOING?

New Mission Statement if needed

New Strategic Plan if needed

Review of existing Working Groups (All)

New Working Groups if needed

7. HOW DO WE TELL THE WORLD AND EACH OTHER THAT WE ARE GETTING SOMEWHERE?

GEBCO URL web site statistics (Carla Moore per Perm Sec)

Transfer of GEBCO web site to BODC (Brown)

Outreach (c.f Agenda Item 3.1.5)

EOS article about GEBCO and the grid (Goodwillie per Perm Sec)

SCOR (Chair)

8. DATES AND PLACES OF MEETINGS IN 2008 AND 2009

ANNEX 2

Minutes of the Twenty-third meeting of the IOC-IHO/GEBCO Sub-Committee on Digital Bathymetry, Lamont-Doherty Geological Observatory of Columbia University, Palisades, New York, USA 11-13 September 2007

Electronic copies of reports and presentations given at the meeting may be downloaded from <http://www.ngdc.noaa.gov/mgg/gebco/scdb/index.html>

- 1.0 Opening of the meeting
 - 1.1 The meeting opened at 0900 hours Tuesday 11 September with a welcome from Dr. Michael Purdy, Director of the Lamont Observatory.
 - 1.2 Brief introductions were made. A list of the 33 participants is attached separately.
 - 1.3 The agenda and schedule of oral and poster presentations were adopted.
 - 1.4 The Chairman presented a “straw man” vision for a way ahead to a “General Bathymetric Model of the Oceans” to set the background for further discussion.

- 2.0 Action items from the 22nd meeting of the subcommittee were discussed.
 - 2.1 NGDC vs ENC SWB data comparison (Fox, SCDB XXII at para. 29) This work was carried out by Yoshi, a GEBCO/Nippon alumnus, during a visit to NGDC. [Action on Fox to see whether Yoshi’s written report can be bundled with the SCDB minutes.]
 - 2.2 GC contact to Dr. Jeffrey Sachs via Dr. Ryan re Coastal Data (SCDB XXII at para. 46). This item is tabled.
 - 2.3 Web access to data from gebco.net (Fox, Pharaoh, Ryan, SCDB XXII at para. 63). This item is covered under number 6 below.
 - 2.4 Nested or variable-meshed grids (Ryan, SCDB XXII at para. 64; Pharaoh at para. 49). This item is covered under number 6 below.
 - 2.5 Web presence. This item is covered under number 6 below.

3. Following the discussions of the action items from the 22nd SCDB meeting a review of on-going activities and the status of current product/projects was held with reports as follows:
 - 3.1 Pauline Weatherall, GDA Manager
 - 3.2 Chris Fox, IHO DCDB Director
 - 3.3 Colin Jacobs, GEBCO Bathymetric Editor
 - 3.4 Tony Pharaoh, IHB (Note action arising in item 6.4 below.)
 - 3.5 Liaisons with IBCs, regional data centers, and SCUFN (Fox)
 - 3.6 Connections to NF/GEBCO Training Project (Monahan, Hartoyo, Tani.) It was remarked that the Nippon Foundation wants the GEBCO Scholars actively involved in the activities of the SCDB and leveling the UNCLOS playing field by spreading bathymetric capability around the globe, using GEBCO to go through barriers.
 - 3.7 Other items (Margo Edwards, Michael Sexton)

4. **LAMONT HIGHLIGHTS AND TOUR**
 - 4.1 Lamont History (Doug Brusa)
 - 4.2 Core Lab (Rusti Lotti)
 - 4.3 Palisades Sill (Mark Anders)

5. BATHYMETRY/SCIENCE DAY

Oral Presentations

- 5.1 *Two Hundred Years of the US Survey of the Coast*, Skip Theberge, NOAA
- 5.2 *Lamont in the History of Global Ocean Mapping*, John Diebold, LDEO
- 5.3 *A hovercraft for geophysical investigations in the inaccessible high Arctic*, John K Hall, Geological Survey of Israel (Retired)
- 5.4 *An overview on the MGDS, automatic data exchange with NGDC and our experiences with web services*, Suzanne Carbotte, LDEO
- 5.5 *An introduction to the Global Multi-Resolution Topography synthesis - approach and lessons learned*, Bill Ryan, LDEO
- 5.6 *A sea bottom landslide identified at a foot of a volcano*, Shin Tani, Japan Secretariat for Ocean Policy
- 5.7 *Indonesian Tsunameter*, Djoko Hartoyo, Indonesia Technology Center for Marine Survey
- 5.8 *The IBCSO data compilation Southern Ocean GIS (SOGIS): data management and processing perspectives*, Norbert Ott, AWI
- 5.9 *GeoMapApp - a web service enabled tool for visualization and analysis of multi-disciplinary marine geoscience data*, Andrew Goodwillie, LDEO
- 5.10 *Experiences using Google Earth to serve marine geoscience data*, Vicki Ferrini, LDEO

Poster Presentations

- 5.11 *Sensitivity of global tide models to large-scale bathymetry and smallscale Roughness*, Brian Arbic
- 5.12 *Towards an error budget for single-and multi-beam data*, Karen Marks
- 5.13 *How much of the seafloor has ever been ensonified?* Dave Monahan
- 5.14 *Sea bottom landslide maps*, Shin Tani
- 5.15 *Historic charts of the US Coast Survey*, Skip Theberge

6. A business session was held to agree on a way forward. The proposal and persons identified for actions are identified in the following:

6.1 GEBCO will adopt the Navy-NGA-NOAA Gridded Bathymetry MOA as starting point for the next global model [Fox wants comparison of this vs. existing model shown to GC, e.g. Rankin's analysis] The SCDB will create mechanisms for continual updates handled under GEBCO framework with a process for peer review. This framework implies that a GEBCO data center captures and maintains the data and required QC/cleaning efforts. [Smith, BODC, Carron, NAVOCEANO, NGA, Weatherall, Jacobs, NGDC, students & scholars]

6.2 GEBCO shall solicit contributions of the highest resolution data available - with options to provide data at lower resolution (e.g. on a 1/10th minute grid.) Original data could be served by the originator or other data centers with GEBCO providing a central link to these repositories. [Pharaoh, Jacobs, Hall, Cherkis, Edwards, Tani, Sexton]

6.3 GEBCO should serve its products on line, making use of web services. (protected, for example by watermark and pop-up box requiring acceptance of limitations on terms of use)

[Ryan & Carbotte, BODC, Smith will web enable the GEBCO 1-minute grid and the MOA grid.] The on-line service will provide:

- 6.3.1 A generalized model (global, fully populated, as produced under item 6.1 above)
- 6.3.2 Higher resolution grids (may be regional and/or sparsely populated) as available
- 6.3.3 A map based inventory of location of existing bathymetric soundings that keeps track of contributor to ensure attribution and recognition of contributions.
- 6.3.5 Historical or legacy versions of grids and/or contours
- 6.3.6 The SCUFN Gazetteer.

6.4 GEBCO needs to facilitate data contributions, and to that end, needs a data policy that addresses concerns, for example as raised by SHOM (see comment by Tony Pharaoh and note that SHOM should receive a specific reply). SCDB suggests that the policy make clear that GEBCO products are clearly identified as “Not for Navigation”, and that it is not GEBCO’s intent to redistribute raw data, unless asked to by the originator. SCDB suggests that GEBCO should develop a means of protecting proprietary data so that the generalized model can benefit from data that may be contributed under restricted terms. GEBCO should learn from efforts of other groups working on similar policies (e.g., SCOR has a sample of data policies from nations and institutions). [Carbotte can point us to SCOR’s examples of policies.]

7. Shin Tani invited the SCDB to meet in 2008 in Tokyo. There was general agreement by the SCDB to recommend to the Guiding Committee that this invitation be accepted.

8. The meeting was adjourned at 1500 Thursday September 13. The SCDB wishes to express its thanks to the hosts for an outstanding meeting. Scientific stimulation, logistical support, and hospitality were all excellent.

Attendees:

- 1. Mark Anders, LDEO
- 2. Julie Bonczkowski, LDEO
- 3. James Braud, US Naval Oceanographic Office
- 4. Doug Brusa, LDEO
- 5. Suzanne Carbotte, LDEO
- 6. Mike Carron, Northern Gulf Institute, Stennis Space Center, Mississippi
- 7. John Diebold, LDEO
- 8. Margo Edwards, University of Hawaii
- 9. Vicki Ferrini, LDEO
- 10. Christopher Fox IHO DCDB / NOAA NGDC / WDC-A, Boulder, Colorado
- 11. Andrew Goodwillie, LDEO
- 12. John Hall, Geological Survey of Israel
- 13. Djoko Hartoyo, Indonesia Technology Center for Marine Surveys
- 14. Denny Hayes, LDEO
- 15. Colin Jacobs, UK National Oceanography Center, Southampton
- 16. Dave Monahan, University of New Hampshire
- 17. Anthony Pharaoh, International Hydrographic Bureau, Monaco
- 18. Norbert Ott, Alfred Wegner Institute, Bremerhaven
- 19. Regina Peragine, LDEO

20. Bill Rankin, US Naval Oceanographic Office
21. Bill Ryan, LDEO
22. Michael Sexton, Geoscience Australia
23. Walter Smith, NOAA (Chairman, GEBCO SCDB)
24. Shin Tani, Cabinet Counselor, Japan Headquarters Secretariat for Ocean Policy
25. Skip Theberge, US Coast Survey
26. John vonRosenburg, US National Geospatial-intelligence Agency
27. Pauline Weatherall, British Oceanographic Data Centre
28. Rose Anne Weissel, LDEO

Participating by teleconference or contributing a poster only:

29. Brian Arbic, University of Texas
30. Breanna Binder, Scripps Institution of Oceanography
31. Seung-Hee Kim, Scripps Institution of Oceanography
32. Karen Marks, NOAA
33. Bob Whitmarsh, National Oceanography Centre, UK

ANNEX 3

Report of IOC-IHO/GEBCO SCUFN XIX

The nineteenth meeting of the GEBCO Sub-Committee on Undersea Feature Names (SCUFN) was organized by the Alfred Wegener Institute for Polar and Marine Research (AWI) and was held from 21st to 23rd June 2006 at the German Maritime Museum in Bremerhaven. Dr. Hyun-Chul HAN of the Korea Institute of Geology, Mining and Materials (KIGAM), was introduced and welcomed by the chairman as a new member of the Sub-Committee.

The meeting was attended by 10 (out of 12) SCUFN Members and the SCUFN Secretary Ing.en chef Michel Huet, IHB. Justified absence of SCUFN members was noted for Dr. Galina Agapova and Cpt. Vadim Sobolev. Mr. Trent Palmer attended as representative of ACUF/USBGN (Secretary). A total of 15 observers from Japan, Korea, Russia, India, Canada, China, and members of the GGC and IOC attended the Meeting.

Ms. Lisa A. Taylor agreed to serve as rapporteur for the Meeting.

The Meeting discussed in length the SCUFN Terms of Reference (ToR) and Rules of Procedure (RoP) which were revised before and during the meeting by a small ad-hoc group.

Several changes and improvements to Publication B-6 were discussed during the meeting, especially how to better define the area for which SCUFN should name undersea features, and the publication of B-6 in additional languages.

A number 35 action items, dealing with general activities for SCUFN and over 40 pending name proposals from SCUFN 17 (Monaco, April 2003) and SCUFN 18 (St. Petersburg, June 2004) were discussed.

In total, 69 undersea feature names were discussed for various reasons, including pending proposals like change of coordinates, modification of the generic term, etc. 21 name proposals were received during the intersessional period, of which 16 new names were accepted. 7 proposals were received after the deadline, which is 30 days before the meeting.

SCUFN Terms of Reference/Rules of Procedure

It was agreed that SCUFN members would present suggested changes to the ToR and RoP to the GEBCO Guiding Committee for final approval. An ad hoc group, formed at the SCUFN/18 Meeting (*HW. Schenke, N. Cherkis, A. Theberge and M. Huet*), addressed this issue and suggested a number of additions and changes (see Final Report SCUFN XIX).

Major items for the ToR and RoP were:

- ToR item 1.3 (x): Where feasible provide historical information regarding the origin of pre-existing names and, where necessary, alternate names.
- ToR: include reference to B-6
- appropriate number of voting SCUFN members to be limited to 12 people, preferably 6 appointed by IOC and 6 by IHO
- member appointment for four years, may be extended for two years, and if no request by other countries additional two years.

- Chairman appointed for four years, option for another period of four years
- Attendance of observers limited to one per state
- etc.

Standardization of Undersea Feature Names (B-6)

Improvements to B-6

- Clarifications to paragraphs I.A and I.D on page 2-1 of B-6: Better definition of the area for which SCUFN should name undersea features. After discussions the consensus of the Sub-Committee was to replace all references in B-6 to 'territorial waters' or 'waters under national jurisdiction' with 'territorial sea'.
 - Paragraph I.A - International concern for naming undersea features is limited to those features entirely or mainly (more than 50%) outside the territorial sea, not exceeding 12 nautical miles from the baselines, in agreement with the United Nations Convention on the Law of the Sea.
 - Paragraph I.D - Names approved by national names authorities in waters beyond the territorial sea should be accepted by other States if the names have been applied in conformance with internationally accepted principles. Names applied within the territorial sea of a State should be recognized by other States.
- Clarifications Paragraph II.A.5 of B-6 – Specific Names

The Sub-Committee discussed naming features after people who have not made a substantial contribution to ocean science and who are living. T. Palmer cited a 2002 United Nations resolution encouraging U.N. naming authorities to limit names to people who have been deceased for more than five years. The Sub-Committee agreed that the UN resolution should be cited in B-6, and with the following words for this paragraph:

 - Names of living persons will normally not be accepted, in accordance with the recommendation in UNCISG Resolution VIII/2. In the rare cases where names of living persons are used (surnames are preferable), they will be limited to those who have made an outstanding or fundamental contribution to ocean sciences.

Publication of B-6 in Additional Languages

- The English/Russian version prepared by Dr. Galina Agapova is to 99% finished, it was stressed that the Russian text must be identical to the English text.
- The English/Japanese version needs only official review by Japanese government will be available before next SCUFN Meeting
- The English/Spanish version prepared by José Frias is complete and ready for review by other Spanish speaking SCUFN members.
- An English/Hungarian version of B-6 was found on the internet. Hungary is not an IHO Member State, SCUFN has no expertise to investigate the accuracy of the translation.

Action Items from Previous Meetings

A large number of 35 action items remaining from SCUFN XVIII 2005 in Monaco were discussed. They included specific work on the Gazetteer, like change of coordinates, requests for name proposals, communication with parent organizations, modification of generic terms or specific names, etc.

26 items were finalized, however 9 action items were pending and included in the new list of action items. Details could be taken from the final report of SCUFN XIX.

16 name proposals supplied by HDNO for consideration at SCUFN XVII and SCUFN XVIII, needed additional supporting information like track control and/or additional evidence of data. The additional information provided was taken into consideration as appropriate. However, these name proposals were not re-considered during SCUFN/19.

Proposals on Record or Submitted during the Intersessional Period

21 name proposals were received during the intersessional period: 6 proposals by Yuzhmoregeologiya, Russia; 11 proposals by Germany (AWI); 4 proposals were received from JCUFN. Five proposals were rejected for various reasons, and 16 new undersea feature names were accepted:

Russia: **Govorov Guyot**
Pegas Guyot
Il'ichev Guyot
Kocebu Guyot
Nazimov Guyot
Butakov Guyot

JCUFN: **Hotta Seamount**
Kazuaki Seamount
Takahiro Seamount
Suruga Seamount

AWI: **Eötvös Escarpment**
Kaula Seamount
Schrack Knoll
Wenzel Seamount
Hinz Seamount
Kertz Seamount

Liaison with ACUF of the US BGN

The harmonization of GEBCO and ACUF Gazetteers B-8 is of high interest for SCUFN. In general the Secretary of ACUF submits information about inconsistencies between the recent versions. No document was available in support of this agenda item.

The minutes of the ACUF Meetings 312 to 315 were submitted, but no new names were considered for the inclusion in the B-8

Two features included in the ACUF gazetteer at ACUF Meeting 316 were discussed, but both were considered as minor features and thus not included in B-8.

Liaison with UNGEGN

The Secretary of ACUF reported on issues regarding UNGEGN. UNGEGN meets every two years. At one of the last meetings a **resolution** was passed to **refrain from naming features after living persons**.

UNGEGN is relying on SCUFN to carry on the work of the disbanded Maritime Undersea Feature Names working group. The chairman invited the UNGEGN chairperson, Helen Kerfoot, to attend the SCUFN/19 meeting. She was unable to attend, but stressed the importance of SCUFN and UNGEGN working closely together. Randal Flynn, the official IHO liaison for UNGEGN, could also not attend.

The Gazetteer on Undersea Feature Names (IHO/IOC Publication B-8)

L. Taylor gave a demonstration on how the undersea feature names included in the GEBCO Gazetteer can be displayed and searchable using Google Earth. She also reviewed the options available for viewing, searching and proposing feature names via the ArcIMS on-line viewer, search and management interfaces developed by NGDC.

The SCUFN Secretary reported that the IHB is working on a new version of the IHO-IOC GEBCO Gazetteer Viewing Software. The implementation work had stopped recently due to problems with the software developer, a report on the matter would be provided at SCUFN/20.

Other Business

Unnamed Seamounts in the Central Pacific Ocean

The Sub-Committee recommended that the list of 72 unnamed seamounts in the central Pacific Ocean be checked for coordinate accuracy. It was agreed that this would be a good student project.

Undersea Feature Names in the Ross Sea

The use of undersea feature names on Ross Sea Bathymetry Maps compiled by F.J. Davey (2004, scale 1:2 million), and by Vaughan Stagpoole at a scale of 1:5 million was evaluated and discussed. Several inconsistencies were encountered, all SCUFN members were invited to review the two digital maps, with numbers annotating positions of features in the Ross Sea, distributed by the SCUFN Secretary.

The SCUFN Secretary asked Dr. Davey to submit formal proposals for those features shown on his map that are not in the GEBCO Gazetteer for review at SCUFN XX (see 3.1.2.9.4).

Linguistic Particularities of Transferring Russian Geographical Names

N. Turko submitted questions on behalf of G. Agapova for consideration regarding the Romanization of Russian undersea feature names.

- Which system of transliteration adopted by which national authority should be used?
- How do we ensure that people using GEBCO products read and pronounce feature names from different writing systems (Russian, Chinese, Japanese, Arabian, etc.) and different variations of the Latin alphabet (English, French, Spanish, Vietnamese, etc) in the same way?

It was agreed to discuss these questions at the next SCUFN meeting.

Post Deadline Submitted Name Proposals

The secretary received seven proposals one week before the meeting. Sub-Committee guidelines require that electronic names proposals be submitted no later 30 days prior to meetings, so the proposal will be considered at SCUFN/20.

Access to SCUFN Documents

The Sub-Committee agreed as appropriate method for members to access documents and correspondence sent to the secretary intersessionally, that they should be accessible from the IHO website to members with individual passwords.

Site and dates for the next Meeting

The next meeting will be held the week of July 9th, 2007 in Monaco, at the IHB. The meeting took note of the formal offer by Dr. Han to host the 2008 SCUFN meeting in the Rep. of Korea.

Report of IOC-IHO/GEBCO SCUFN XX

The twentieth meeting of the GEBCO Sub-Committee on Undersea Feature Names (SCUFN) met at the International Hydrographic Bureau (IHB) in Monaco from 9th to 12th July 2007.

At the opening address, the IHB Director pointed out that the fact that 10 out of 12 sub-committee members were present indicated that the group had captured the attention within GEBCO and the outside world.

Attendees included SCUFN chairman, Dr. Hans-Werner Schenke (AWI, Germany), SCUFN secretary, Mr. Michel Huet (IHB, Monaco), and Sub-Committee members Dr. Galina Agapova (GINRAS, Russia), LCdr. Harvinder Atvar (NHO, India), Mr. Norman Z. Cherkis (Five Oceans Consultants, USA), Lic. José Luis Frias Salazar (INEGI, Mexico), Dr. Hyun-Cheol Han (KIGAM, Republic of Korea), Dr. Yasuhiko Ohara (HODJ, Japan), Lt. Walter Reynoso-Peralta (SHN, Argentina), Ms. Lisa A. Taylor (NOAA, USA) and Capt. Albert E. Theberge (NOAA, USA).

Absent were Cpt. Vadim Sobolev (HDNO, Russia) and Lcdr Rafael Ponce Urbina (DGAHC, Mexico)

Observers included LCdr. Ana Angelica Alberoni (DHN, Brazil), Prof. Sungjae Choo (KHU, Republic of Korea), Dr. Ksenia Dobrolyubova (GINRAS, Russia), Mr. Shigeru Kasuga (JHOD, Japan), Mr. Junghyun Kim (NORI, Republic of Korea), Mr. Shigetoshi Nagao (JHOD, Japan), Prof. Hyo Hyun Sung (EWHA, Republic of Korea), Dr. Kunio Yashima (JHA, Japan), and Dr. Yeongjin Yeon (NORI, Republic of Korea).

Ms. Lisa A. Taylor agreed to serve as rapporteur for the Meeting.

In total, 83 undersea feature names were discussed, including pending proposals, change of coordinates, modification of the generic term, etc. 56 name proposals were received during the intersessional period, of which 36 new names were accepted. Four names, submitted by ACUF, were after evaluation accepted by SCUFN.

The Term of Reference (ToR) and Rules of Procedure (RoP) were revised as result of the IHC 17. Most of the proposed changes were accepted. In order to solve the dispute of clause 2.10 (RoP) a working group was established. After lengthy discussions a wording acceptable to all involved parties was found and included in the ToR/RoP.

The changes and improvements to Publication B-6 agreed upon at SCUFN XIX were finally discussed. It was suggested that they shall be incorporated in a new edition of the publication, which is subject to endorsement and approval by the GGC and the parent organizations.

SCUFN Terms of Reference/Rules of Procedure

The ToR/RoP working group (*HW. Schenke, N. Cherkis, A. Theberge and M. Huet*) provided a report to the Sub-Committee and changes proposed after the IHC 17. Most of the proposed changes were agreed upon.

However, it was decided to set up a larger ad hoc working group to deal specifically with the unresolved section of the document (mainly clause 2.10). Participants included *N. Cherkis, S. Choo, H.C. Han, S. Kasuga, J. Kim, S. Nagao, Y. Ohara, S.S. Sung, L. Taylor, A. Theberge, K. Yashima, and Y. Yeon.*

After further lengthy discussions, revised ToR/RoP were finally agreed upon, and will be presented to the GGC for adoption.

Standardization of Undersea Feature Names (B-6)

Improvements to B-6

The changes to B-6 that were agreed upon at SCUFN/19 (Sections I.A, I.D, II.A.5, III.G, and page 2-9) were reviewed and suggested that they shall be incorporated in a new edition of the publication. It was pointed out that any new edition must be endorsed by the GEBCO Guiding Committee and approved by the parent organizations.

Further it was pointed out that the terminology section of B-6 also needed revision. Dr. Y. Ohara presented specific recommendations for changes to generic terms and their definitions, and to reconsider the current policy of only regarding the topographic expression of features in the naming process. It was decided to set up also a small working group (WG) to examine the terminology section in B-6. Members are: J.L. **Frias**, H.C. **Han**, Y. **Ohara** (Chair), W. **Reynoso-Peralta** and A. **Theberge**. At the end of SCUFN XX the working group presented a short report, which shall be reviewed by SCUFN members. The WG-chairman will provide the SCUFN-chairman and -secretary with a report on the proposed revision regarding this matter by 1 March, 2008.

Publication of B-6 in Additional Languages

It was remarked by the SCUFN Secretary that all translations of B-6 into other languages must be based on the original English/French version which was published in 2001.

Prof. Choo, Rep of Korea, inquired about submitting an English/ Korean version of B-6 to SCUFN. This was welcomed by the SCUFN Chairman, and it was proposed to submit a draft of the English/Korean Version of B-6 to the next meeting.

- The English/Japanese version of B-6 prepared by the Japanese Committee on Undersea Feature Names (JCUFN) was presented by Dr. Y. Ohara. After some minor corrections the draft was presented and approved by the Sub-Committee. This new edition will be posted on the IHO website as an official IHO publication, and IHO member states and the IOC Secretariat are informed of the availability of this document by circular letter.
- The English/Russian version was also submitted and approved by the Sub-Committee. This new edition will be posted on the IHO website as an official IHO publication, and IHO member states and the IOC Secretariat are informed of the availability of this document by circular letter.

Action Items from Previous Meetings

In total 24 action items remaining from SCUFN XIX 2006 in Bremerhaven were discussed. 13 action items were done during the intersessional period and 11 remain as pending.

One of the pending items is to establish a procedure to transfer data or meta data submitted to SCUFN in connection with a name proposal to the GEBCO Sub-Committee on Digital Bathymetry. It was agreed that the secretary would provide the GEBCO Bathymetric Editor (GBE: Mr. Colin Jacobs, clj@noc.soton.ac.uk) with all new name proposals submitted to SCUFN, along with the supporting bathymetric documentation. It will then be up to the GBE to contact the proposer's organization in order to obtain the associated bathymetric data and to provide it to the NGDC co-located IHO Data Center for Digital Bathymetry.

From 7 name proposals, submitted by F. Davey in June 2006, three names were accepted. Four names were put into the pending section as not being conform to SCUFN naming criteria. The proposer will be asked to submit a modified proposal.

Another pending item is the evaluation of 72 unnamed seamounts in the South and Central Pacific Ocean utilizing ETOPO, GDA and other sources. Walter Reynoso Peralta, SCUFN member and former NF/GEBCO student is currently working on this matter. He will report about his work on verifying the existence of the seamounts at SCUFN XXI.

Most action items included specific work on the Gazetteer, like change of coordinates, requests for name proposals and modification of proposals, communication with parent organizations, modification of generic terms or specific names, etc. Details could be taken from the final report of SCUFN XX (not yet available).

Proposals on Record or Submitted during the Intersessional Period

56 name proposals were received during the intersessional period: Peru (1), Russia/HDNO (15), Germany/AWI (2), Russia/Yushmorgeologiya (4), Korea (10), Japan (9), Russia/GINRAS (4), ACUF (11).

Seven name proposals received in June 2006 from Fred Davey were on record, New Zealand (7)

Following new 36 names out of 63 proposed names were accepted during SCUFN XX:

Russia: Boytsov Seamount
Danil'chuk Seamount
Gordin Guyot
Skornyakova Guyot
Vulkanolog Guyot
Zatonsky Guyot
Gorinich Hills
Litvin Seamount
Svyatogor Rise
Pogrebitsky Seamount

Japan : Amami Sankaku Basin
Minami-Amami Escarpment
Oki-Daito Escarpment
Minami-Okinawa Escarpment
Toyama Deep Seachannel
Toyama Deep Sea Fan

Korea: Gangwon Plateau
Ulleung Plateau
Usan Trough
Usan Escarpment
Onnuri Basin
Saenal Basin
Hupo Bank
Kiminu Seamount
Igyuwon Seamount
Anyongbok Seamount

Peru: Peru Trench

Germany: Graf-Wilczek-Knoll
IPY Seamount

Australia: Adare Basin
Davey Bank
Central Basin

USA/ACUF: Bōsō Canyon
Cooper Seamount
C&GS Province
Jeonjaegyu Knoll

Liaison with ACUF of the US BGN

The harmonization of GEBCO and ACUF Gazetteers is of high interest for SCUFN. As new information N. Cherkis explained to the committee that a change of policy has been requested to the parent body not to be required approve names after living people Prior to the meeting the Secretary of ACUF has submitted the minutes of the ACUF Meetings 319 to 322, 11 new names were considered, however, four were accepted for inclusion in B-8.

Liaison with UNGEGN

The chairman invited the UNGEGN chairperson, Helen Kerfoot, to attend the SCUFN XX meeting. She was unable to attend, but reported her interest to attend the upcoming meeting.

The Gazetteer on Undersea Feature Names (IHO/IOC Publication B-8)

The secretary presented the new version of the IHO-IOC GEBCO Gazetteer Viewing software. Select all feature names included in a given area. Search for a specific feature name. Print or create an Excel file of the names or a portion of names that are in the reserve section. Currently there are 53 reserved names in the reserve section.

Other Business

Personalities:

- The longest serving member (33 years) of the committee is Dr. Galina Agapova. She will be retiring from SCUFN. The chairman thanked Dr. Agapova also in the name of the GEBCO Guiding Committee for her outstanding cooperation and collaboration and her huge contribution to SCUFN. A proposal for a successor of Galina Agapova (IOC appointment) has to be done via the UNESCO IOC office in Paris.
- LCDR Rafael Ponce Urbina (DGAHC, Mexico), appointed by the IHO has left the Hydrographic Service of Mexico. Since SCUFN has already 6 members appointed by the IHO, this position should be filled with a representative from the IOC side.

Site and dates for the next Meeting

Following an invitation by the Republic of Korea at the end of SCUFN XIX, the next meeting will be held in May 2008 in Korea on Jeju Island. The length of the meeting will be four to five days.

ANNEX 4**Summary Report on the GEBCO Accounts held at Southampton University, U.K.
to the GEBCO Guiding Committee (7th-8th June 2007)**

GEBCO funds are held in two separate accounts which are held by Southampton University, of which one is in sterling and the other principally in US dollars.

1. Southampton GEBCO Fund

administered by Southampton University (Project 501914101)

The major part of the income to this fund this year has come from BODC, being the half share of the income from the sale of the GDA-CE CDs.

Expenditure from this account has largely been used to support the attendance of GEBCO members to meetings.

2. The Nippon Foundation Fund

administered by Southampton University (Project 501915101)

Income to, and Expenditure from, this fund are in US Dollars, but the fund also earns some interest which is paid annually in Pounds Sterling. Therefore accounts are kept in both \$ and £. Although the Southampton books are held in Sterling the balance, when converted back to dollars, is computed using the same exchange rate that was used to convert dollars to pounds sterling in the first place so that the fund is not exposed to currency fluctuations.

US Dollar summary (including commitments to date, unaudited)

Southampton GEBCO Fund (as at 25/10/07)	£59,168	\$121,210
Nippon Foundation Fund (as at 25/10/07)		\$533,383
	Total	\$654,593

R.B. Whitmarsh,
GEBCO Permanent Secretary
25 October 2007

This page is left blank intentionally

ANNEX 5

Finance Working Group report

Over the past year we completed shipments of the **GEBCO 2006 World Bathymetric Map**. That was underpinned by \$20,000 from the Margaret Kendrick Blodgett (MKB) Foundation via University of New Hampshire (UNH).

Norm Cherkis made a **data scouting** swing through the SW Pacific. The 'revolution' in Fiji precluded meetings there, but he brought back grids of Australian areas. This trip was supported by another \$25,000 grant from the MKB Foundation also via UNH. There was no reporting of this at the SCDB meeting at Lamont (September 2007).

At the SCDB meeting I met with Bob Anderson (and paid his expenses) and Margo Edwards (University of Hawaii) and we intend to try to move all the **SSPARR echo-sounding buoy** findings to CRM in Bergen - the folks who are making our four autonomous seismic profiling buoys. Bob, Mark Rongstad and I intend to come to Bergen in January to see what can be arranged.

The Arctic hovercraft R/H Sabvabaa has been launched, and we concluded the sea-trials in Southampton between September 24th and October 5th, 2007. We went flying past the National Oceanography Centre numerous times. The hovercraft exceeded design specifications in all departments and did 37.2 kts with its 2200 kg payload. I tried to get Colin Jacobs to participate but he was very busy and later nobody answered his phones. The hovercraft will be shipped to Bergen in a few weeks.



R/H Sabvabaa on the River Itchen, Southampton – Griffon Hovercraft, 8 Hazel Road, Woolston, Southampton



Since 2001 I have put around \$125,000 into GEBCO and its projects (not counting \$1.2 million for the hovercraft, which is a proactive adjunct to IBCAO). I don't see further contributions from me or from the MKB Foundation. And I still don't know who else would be ready to put money in, so basically Norm and I came up with nothing.

John Hall, 10th October 2007

GEBCO PERSONALITY LIST

(Last Revised 7 November 2007)

JOINT IOC-IHO GUIDING COMMITTEE FOR GEBCO

Dr Robin K.H. Falconer (Vice-Chairman)	Ingénieur général Etienne Cailliau
Lic. José Luis FRIAS Salazar	Dr Chris Fox (Director, IHO Data Center for Digital Bathymetry)
Dr Martin Jakobsson	Commander Paolo Lusiani
Dr Hans-Werner Schenke	Mr David Monahan (Chairman)
Dr Nataliya Turko	Dr Kunio Yashima

SUB-COMMITTEE ON DIGITAL BATHYMETRY (SCDB)

Dr Walter H. F. Smith (Chairman)
Dr Michael Carron
Mr Norman Z. Cherkis
Dr Andrew Goodwillie
Mr Alexis E. Hadjiantoniou
Dr John K. Hall
Dr Michael S. Loughridge
Mr Ron Macnab
Capt. Andrey Popov
Mr William Rankin
Dr Hans-Werner Schenke
Dr George Sharman
Mr Shin Tani

SUB-COMMITTEE ON UNDERSEA FEATURE NAMES (SCUFN)

Dr Hans-Werner Schenke (Chairman)
L Cdr Harvinder Avtar
Mr Norman Cherkis
Lic José Luis FRIAS Salazar
Dr Hyun-Chul HAN
Ing.en Chef Michel Huet (Secretary)
Dr Yasuhiko Ohara
Lic. W. Reynoso
Capt Vadim Sobolev
Mrs Lisa Taylor
Capt. Albert E. Theberge
Adviser/Observer:
Mr. Trent Palmer
Dr D. Travin

FINANCE WORKING GROUP

Mr Norman Cherkis
Dr John K. Hall

OUTREACH WORKING GROUP

Cdr Lusiani

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

Dr Robin K.H. Falconer (Chairman)
Mr Robert Anderson
Dr José FRIAS Salazar
Dr Martin Jakobsson
Dr Michael Loughridge
Mr David Monahan (Project Manager)
Dr Hans-Werner Schenke
Dr Walter Smith
Mr Shin Tani
Prof. Bob Whitmarsh (Secretary)

**NIPPON FOUNDATION/GEBCO TRAINING PROJECT
SCHOLARS**

Mr Clive Angwenyi (2005)
Lt Cdr Hugo Montoro (2005)
Mr Taisei Morishita (2005)
Lt Cdr Abubakar Mustapha (2005)
Lt Cdr 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)
Lt Leonardo TUN Humbert (2007)
Mr Vasudev MAHALE (2007)
Mr Katagiri YASUTAKA (2007)
Mr Nguyen Duy THANH (2007)
Mr Muhammad YAZID (2007)
Mr Jose GIANELLA (2007)

GEBCO PERMANENT SECRETARY

Prof. Bob Whitmarsh

GEBCO BATHYMETRIC EDITOR

Mr Colin Jacobs

GEBCO DIGITAL ATLAS MANAGER

Ms. Pauline Weatherall

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

Dr Dmitri Travin, 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
Commander Luis GONZAGA Campos
Ing. prin. Laurent Louvart
Dr Larry A. Mayer
Dr German Naryshkin
Mr George B Newton
Dr Gleb Udintsev

CORRESPONDING MEMBERS

Dr Galina Agapova
Mr Dennis Anthony
Lieutenant Emilio Boassi
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
Lt Cmd. Alexandre Fontainha
Dr Sarah Gille
Cmdr Lars Hansen
Dr Troy L. Holcombe
Dr. Russell Howorth
Mr Peter Hunter

Dr Don Hussong
Sir Anthony Laughton
Dr. Karen M. Marks
Dr Carlos Mortera
Dr Christian de Moustier
Mr Tony Pharaoh
Lt Cdr Rafael PONCE Urbina
Dr. William B. F. Ryan
Ms Paola Travaglini
Mrs Lois C. Varnado
Mr John W. von Rosenberg
Dr David Wells
Dr Ian Wright
Dr Harry Yeh
Mr Alexei A. Zinchenko

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

Professor Dr -Ing. Werner Bettac (Chairman & Chief Editor IBCWIO)
First Admiral Mohd. R. Bin Hassan (Chairman IBCWP)
Lic. José Luis FRIAS Salazar (Vice-Chairman IBCCA)
Commander Mario Proaño (Chairman IBCSEP)
Dr HOU Wenfeng (Chief Editor IBCWP)
Mr Ron Macnab (Chairman IBCAO)
Professor Carlo Morelli⁺ (Chairman IBCM)
Ing. Mario A. REYES Ibarra (Chief Editor IBCCCA)
Ing. Gen. André Roubertou (Chairman IBCEA)
Capt. Andrej Popov (Chief Editor IBCM)

+ deceased

CHAIRMAN: IOC CONSULTATIVE GROUP ON OCEAN MAPPING

Dr Günter Giermann (Chairman of IOC/CGOM)

ALPHABETICAL LIST

Lt Cdr A Mustapha Abubakar

Nigerian Navy Hydrographic Office
NO 5 Point Road Apapa
Lagos
NIGERIA
Email: Mustapha mustee4@hotmail.com
Time Zone: +1 (Summer +1)

Dr Galina Agapova

Geological Institute of the
Russian Academy of Sciences
Pyzevskiy, 7
109017 Moscow
RUSSIAN FEDERATION
Fax: +7-095-951-0443
Tel: +7 (095) 230 8180 or 8145
Email: marine@ginras.ru
Time Zone: +3 (Summer +4)

Mr Robert Anderson

Science Applications International Corporation
26279 Twelve Trees Lane, Suite A
Poulsbo, Washington 98370
UNITED STATES OF AMERICA
fax +1.360.697.4869 or 360.697.4140
tel +1.360.697.3754 or 360.697.4144
mobile +1.360.990.4917
Email: andersonrm@saic.com
Time Zone: -8 (Summer -7)

RADM Christian Andreasen

Chief Hydrographer
National Geospatial-Intelligence
Agency (NGA)
4600 Sangamore Road
Bethesda, Maryland 20816-5003
UNITED STATES OF AMERICA
Fax:+1 (301) 227 4211
Tel: +1 (301) 227 7407
Email: andreasenc@nga.mil
Time Zone: -5 (Summer -4)

Mr Dennis Anthony

Royal Danish Administration
of Navigation and Hydrography
Overgaden O. Vandet 62B
DK 1023 Copenhagen K,
DENMARK
Fax: + 45 (3) 157 4341
Tel: + 45 (3) 268 9500
Email: dea@frv.dk
Time Zone: +1 (Summer +2)

Mr Clive Angwenyi

74 Greenleaf Crescent
Brampton, ON
CANADA L6X 2V6 or
Kenya Marine and Fisheries Research Institute
P.O Box 81651
Mombasa
KENYA
Email: cmigosi@kmfri.co.ke

LCdr. Harvinder Avtar

National Hydrographic Office
107-A, Rajpur Road, Post Box No. 75
Dehradun, INDIA
Fax: +91-135-2748373
Tel: +91-135-2747365
E-mail: Avtar_Hydro70@rediffmail.com or nho@sancharnet.in
Time Zone : +5.5

Commander Muhammad Bashir

Officer-in-charge PN Hydrographic School
PNS BAHADUR
National Stadium Road
Karachi
PAKISTAN
Fax:
Tel: +92-(0)21-48503347; cell ph +92 (0)3002184771
Email: mmbfmalik@yahoo.com
Time Zone: +5 (Summer +5)

Professor Dr-Ing. Werner Bettac

(Chairman & Chief Editor IBCWIO)
Poolstrasse, 7
D - 22844 Norderstedt
GERMANY
Fax:+49 (40) 31 90 5150
Tel:+49 (40) 52 24 720
Email: bettac@wt.net.de
Time Zone: +1 (Summer +2)

First Admiral Mohd. Bin Hassan

Hydrographic Directorate
Department of the Navy
Jalan Padang Tembak
50634 Kuala Lumpur
MALAYSIA
Fax: +60 (3) 235 3075
Tel: +60 (3) 2698 7972

Lieutenant Emilio Boassi

Servicio Hidrográfico y Oceanográfico
de la Armada (SHOA)
Errázuriz 232, Playa Ancha
P O Box 324
Valparaiso

CHILE

Fax:+56 (32) 266542

Tel:+56 (32) 266508

Email: eboassi@shoa.cl

Website: <http://www.shoa.cl>

Time Zone: -4 (Summer, S. Hemisphere -3)

Lt Jorge Luis Heredia BUSTAMANTE

Calzada del Hueso, # 7700

Unidad Habitacional ISSFAM (Cuemanco)

Edificio "B", Departamento 209

C.P.14620

Mexico City

MEXICO D.F.

Fax:

Tel: +52 55 56 08 08 47, ext. 8948

Email: j.l.h.bustamante@gmail.com or navoceano@hotmail.com

Time Zone: -6 (Summer -6)

Ingénieur général Etienne Cailliau

Croas Audren

29810 PLOUARZEL

FRANCE

Fax : +33 (0)2 98 22 12 08 (O)

Tel +33 (0)2 98 22 08 61 (O)

Email : etienne.cailliau@wanadoo.fr

Time Zone: +1 (Summer +2)

Dr Michael Carron

Chief Scientist

Northern Gulf Institute

Bldg. 1103 Rm. 233

Stennis Space Center, MS 39529

UNITED STATES OF AMERICA

Fax:

Tel: Office: +1 (228) 688 3228, Cell: +1 (228) 342 6086

Email: mcarron@ngi.msstate.edu, michael.carron@gmail.comWebsite: www.ngi.msstate.edu

Time Zone: -5 (Summer -4)

Mr Norman Z. Cherkis

Five Oceans Consultants

9459 Raith Court

Bristow

VA 20136-3505

UNITED STATES OF AMERICA

Fax:+703 392-1224

Tel: +703 392-1224

Email: fiveoceanscon@yahoo.comWebsite: <http://www.fiveoceanscon.com>

Time Zone: - 5 (Summer -4)

Dr Sungjae CHOO

Department of Geography

Kyunghee University

Seoul 130-701
REPUBLIC OF KOREA
Fax: +82 2 961 0251
Tel: +82 11 704 3619
Email: sjchoo@khu.ac.kr
<http://www.geo@khu.ac.kr>
Time Zone: +9 (Summer +9)

Dr Marie-Hélène Cormier

University of Missouri
Department of Geological Sciences
313 Geology Building
Columbia, MO 65211-1380
UNITED STATES OF AMERICA
Fax:+ (573) 882-5458
Tel: +(573) 882-8608, (cell) +(573) 239-5129
Email: CormierM@missouri.edu
Web: <http://www.missouri.edu/~geolwww/people/faculty>
Time Zone: - 5 (Summer -4)

Dr Raymond N Cramer

British Oceanographic Data Centre (BODC)
Joseph Proudman Building
6 Brownlow Street
Liverpool L3 5DA
UNITED KINGDOM
Fax:+44 (151) 795 4912
Tel:+44 (151) 795 4870
Email: rnc@bodc.ac.uk
Time Zone: 0 (Summer +1)

Dr Luis A DELGADO Argote

Investigador Titular A
Departamento de Geología
Centro de Investigación Científica
y Educación Superior de Ensenada (CICESE)
Km 107 Carretera Tijuana-Ensenada
22860 Ensenada BC
MEXICO
Fax: (617) 449 33
Tel: (617) 445 01 to 08, ext 2410
Email: ldelgado@cicese.mx
Time Zone: -9 (Summer -8)

Dr. David L. Divins

Associate Dir., Ocean Drilling Programs
Joint Oceanographic Institutions
1201 New York Ave, NW
Suite 400
Washington, DC 20005
UNITED STATES OF AMERICA
Fax: +1 (202) 265 4409
Phone: +1 (202) 232 3900
Email: ddivins@joiscience.org
Website: <http://www.joiscience.org/default.html>

Mr Daniel P. Donnell

4600 Sangamore Road
Bethesda
MD 20816
Mailstop D-144 Code PVMI
UNITED STATES OF AMERICA
Fax: +1-301-227-4586
Phone: +1-301-227-3399
Email: donnell@nga.mil

Dr Margo Edwards

Hawaii Mapping Research Group
School of Ocean and Earth Science and Technology
University of Hawaii
1680 East-West Road
POST Building #815
Honolulu
Hawaii 96822
UNITED STATES OF AMERICA
Fax: +1 (808) 956-6530
Tel: +1 (808) 956-5232
Email: margo@soest.hawaii.edu
Time Zone: -10

**Dr Robin K.H. Falconer
Vice-Chairman GEBCO**

Institute of Geological and Nuclear Sciences Ltd.
1 Fairway Drive
Avalon
PO Box 30-368
Lower Hutt
NEW ZEALAND
Fax: +64 (4) 570 4600
Tel: +64 (4) 570 1444
Email: r.falconer@gns.cri.nz
Time Zone: +12 (Summer, S. Hemisphere +13)

Lt Cmd Luis Antonio Félix

Diretoria de Hidrografia e Navegação
Rua Barão de Jaceguay
s/no Ponta da Armação
CEP - 24048-900
Niterói, RJ
BRAZIL
Fax: +55 (21) 620 0073/613-8210
Tel: +55 (21) 613 8249
Email: gebco@chm.mar.mil.br or gebcobr@hotmail.com
Time Zone: -3 (Summer -2)

Dr Robert L. Fisher

Geosciences Research Division
Scripps Institution of Oceanography
La Jolla, California 92093-0220
UNITED STATES OF AMERICA
Fax: +1 (858) 534 0784

Tel: +1 (858) 534 3597
Time Zone: -8 (Summer -7)

Dr. Valeriy Fomchenko

Head Department of Navigation and Oceanography
8-11, Liniya V.O. B-34
199034 St Petersburg
RUSSIAN FEDERATION
Fax: +7 (812) 277 59 00
Tel: +7 (812) 277 4362
Time Zone: +3 (Summer +4)

Lt Cmd. Alexandre Fontainha

Diretoria de Hidrografia e Navegação
Rua Barão de Jaceguay
s/no Ponta da Armação
CEP - 24048-900
Niterói, RJ
BRAZIL
Fax: +55 (21) 620 0073/613-8210
Tel: +55 (21) 613 8249
Email: gebco@chm.mar.mil.br or gebcobr@hotmail.com
Time Zone: -3 (Summer -2)

Dr C. G. Fox

Director , National Geophysical Data Center
NOAA Mail Code: E/GC
325 Broadway
Boulder, Colorado 80305-3328
UNITED STATES OF AMERICA
Fax:+1 (303) 497 6386
Tel: +1-(303) 497 6215
Email: Christopher.G.Fox@noaa.gov
Website: <http://www.ngdc.noaa.gov/ngdc.html>
Time Zone: -7 (Summer - 6)

Lic. José Luis FRIAS Salazar

Instituto Nacional de Estadística,
Geografía e Informática
Subdirección de Información Marina, DGG
Heroe de Nacozari Sur 2301,
Puerta 9, 1º nivel. Ext: 4288
Jardines del Parque, CP 20270
Aguascalientes, Ags.
MEXICO
Fax: +52 (449) 442 41 76
Tel: +52 (449) 910 53 00, ext 5833
Email: jose.frias@inegi.gob.mx
Time Zone: -7 (Summer -6)

Lt Cdr Jose GIANELLA

Emily Car 104
Lima 34
PERU
Fax
Tel:

Email: jgianella@dhn.mil.pe
Time Zone: -5 (Summer -5)

Dr Günter Giermann

Offenbachstr. 32
D-53173 Bonn - Bad Godesberg
GERMANY
Fax: +49 228 35 47 94
Tel: +49 228 35 47 94
Time Zone: +1 (Summer +2)

Dr Sarah Gille

Physical Oceanography Division
Scripps Institution of Oceanography
La Jolla, California 92093-0230
UNITED STATES OF AMERICA
Fax: +1 (858) 534 9820
Tel: +1 (858) 822 4425
Email: sgille@ucsd.edu
Time Zone: -8 (Summer -7)

Commander Luis GONZAGA Campos

Diretoria de Hidrografia e Navegação
Rua Barão de Jaceguay
s/no Ponta da Armação CEP - 24048-900
Niterói, RJ
BRAZIL
Fax: +55 (21) 620 0073/613-8210
Tel: +55 (21) 613 8249
Email:
Time Zone: -3 (Summer -2)

Dr Andrew Goodwillie

Oceanography 208
Lamont Doherty Earth Observatory
61 Route 9W
Palisades
NY 10964-8000
UNITED STATES OF AMERICA
Fax: 845-365-8156
Tel: 845-365-8717
Email: andrewg@ldeo.columbia.edu
Time Zone: -5 (Summer -4)

Captain Hugo Gorziglia

Director
International Hydrographic Organization
4 quai Antoine ler
B.P.445 - MC 98011 Monaco Cedex
PRINCIPALITY OF MONACO
Fax: +377 93 10 81 40
Tel: +377 93 10 81 00
Email: hgorziglia@ihb.mc
Website: <http://www.iho.shom.fr>
Time Zone: +1 (Summer +2)

Mr Alexis E. Hadjiantoniou

Hellenic Navy Hydrographic Service

TGN 1040
Athens
GREECE
Fax: +30 (1) 651 7811
Tel: +30 (1) 655 1830
Email: dcd@hnhs.gr
Email: alexis_h@otenet.gr (private)
Time Zone: +2 (Summer +3)

Dr John K. Hall

Marine Geology, Mapping and Tectonics Division
Geological Survey of Israel
30 Malchei Israel Street
Jerusalem 95501
ISRAEL
Fax: +972 (2) 534 6590 or (2) 531 4257
Tel: +972 (2) 534 6455; mob. +972 50 729 0356
Email: jkh1@012.net.il
Time Zone: +2 (Summer +3)

Dr Hyun-Chul HAN

Korea Institute of Geoscience & Mineral
Resources (KIGAM)
30 Gajeong-dong, Yuseong-gu
Daejeon 305-350
REPUBLIC OF KOREA
Fax: +82 42 862 7275
Tel: +82 42 868 3202
E-mail: han@kigam.re.kr

Cmdr. Lars Hansen

Royal Danish Administration
of Navigation and Hydrography
Overgaden O. Vandet 62B
DK 1023 Copenhagen K,
DENMARK
Fax: + 45 (3) 157 4341
Tel: + 45 (3) 268 9500
Email: lha@fomfrv.dk
Time Zone: +1 (Summer +2)

Mr Djoko HARTOYO

Technology Center for Marine Survey
Agency for the Assessment and Application of Technology
Jl. Pelabuhan Ratu Raya No. 6 Perumnas Karawaci II
Tangerang BANTEN 15138
INDONESIA
Tel: + 62-21-3168814

Dr Troy Holcombe

National Geophysical Data Center
325 Broadway NOAA Mail Code: E/GC3
Boulder, Colorado 80303
UNITED STATES OF AMERICA
Tel.: +1-979-845-3528

Email: tholcombe@ocean.tamu.edu
Time Zone: -7 (Summer -6)

Dr HOU Wenfeng

(Chief Editor IBCWP)
Director
National Marine Data and Information Service
93, Liuwei Road, Hedong District
Tianjin 300171
CHINA
Fax:+86 (22) 24304 408
Tel:+86 (22) 24301 297
Email: houwf@netra.nmdis.gov.cn
Time Zone: +8 All year

Dr Russell Howorth

South Pacific Applied Geoscience
Commission (SOPAC)
SOPAC Technical Secretariat
Private Mail Bag, Suva
FIJI
Tel:+679 381 139 or 381 377
Fax:+679 370 040
Emails: russell@sopac.org.fj
Website: www.sopac.org.fj
Time Zone: + 12 All year

Ing.en Chef Michel Huet

International Hydrographic Bureau
4 quai Antoine 1er
MC 98000 Monaco Cedex
PRINCIPALITY OF MONACO
Fax: +377 93 10 81 40
Tel: +377 93 10 81 04
Email: mhuet@ihb.mc
Website: <http://www.iho.shom.fr>
Time Zone: +1 (Summer +2)

Mr Peter Hunter

National Oceanography Centre
Empress Dock
Southampton SO14 3ZH
UNITED KINGDOM
Fax: +44 (023) 80 596 554
Tel: +44 (023) 80 596 559
Email: peter.hunter@noc.soton.ac.uk
Time Zone: 0 (Summer +1)

Dr Don Hussong

Pier 69
2727 Alaska Way
Seattle
Washington 98121-1107
UNITED STATES OF AMERICA
Fax: +1 (206) 441 9308

Tel: +1 (206) 441 9305
Email: d.hussong@seafloor.com
Time Zone: -8 (Summer -7)

Mr Colin Jacobs

GEBCO Bathymetric Editor
National Oceanography Centre
Empress Dock
Southampton SO14 3ZH
UNITED KINGDOM
Fax: +44 (023) 80 596 554
Tel: +44 (023) 80 596 576
Email: clj@noc.soton.ac.uk
Time Zone: 0 (Summer +1)

Dr Martin Jakobsson

Department of Geology and Geochemistry
Stockholm University
106 91 Stockholm
SWEDEN
Fax: +46 8 674 7897
Tel.: +46 8 164719
Email - martin.jakobsson@geo.su.se
Time Zone: +1 (Summer +2)

Lt Apolonio M. Lagonsin

CGSD- National Mapping and Resource Information Authority
c/o NAMRIA-Binondo Branch
421 Barraca Street
San Nicolas
1010 Manila
PHILIPPINES
Fax No. + 63 2-242-2920
Tel No. + 63 2-242-2955
Email: apollag2@yahoo.com
Time Zone: +8 (Summer +8)

Sir Anthony Laughton PhD FRS

Okelands, Pickhurst Road
Chiddingfold, Godalming
Surrey GU8 4TS
UNITED KINGDOM
Fax: +44 (1428) 683967
Tel: +44 (1428) 683941
Email: anthony.laughton@soc.soton.ac.uk
Time Zone: 0 (Summer +1)

Prof. Ki-Suk LEE

#102-1601 Shimdolim-dong Gurogu
Seoul
REPUBLIC OF KOREA
Fax: +82 2 871 9167
Tel: +82 2 2672 7208
Email: leekisuk@snu.ac.kr
Time Zone: +9 (Summer +9)

Dr Michael S. Loughridge

2630 Iliff St
Boulder
Colorado 80305
UNITED STATES OF AMERICA
Fax:+1 (303) 494 1747
Tel: +1-(303) 494 6008
Email: mike@loughridge.net
Website: <http://www.ngdc.noaa.gov/ngdc.html>
Time Zone: -7 (Summer - 6)

Ing. prin. Laurent Louvart
Etablissement Principal du SHOM
13 rue du CHATELLIER, BP30316
29603 Brest
FRANCE
Fax:+ 33 (0) 2 98 22 08 99
Tel:+ 33 (0) 2 98 22 1763
Email: louvart@shom.fr
Website : <http://www.shom.fr>
Time Zone: +1 (Summer +2)

Commander Paolo Lusiani
Stato Maggiore Marina
3rd Rep. Idrografia
Piazza della Marina 4
00196 Roma
ITALY
Fax: +39 0636803393
Tel: +39 0636804204
E-mail: lusianip@marina.difesa.it
Time Zone: +1 (Summer +2)

Mr Ron Macnab
Geological Survey of Canada (Retired)
11 Lyngby Avenue
Dartmouth NS, B3A 3T6
CANADA
Fax: +1(902)463-0908
Tel: +1(902)463-3963
E-mail: ron.macnab@ns.sympatico.ca
Time Zone: -4 (Summer -3)

Mr Vasudev MAHALE
c/o Shubhashree Hsg. Sty.
H.No. 94/3,
Sao-Pedro,
P.O.Old-Goa,
Goa
INDIA 403402
Fax:
Tel:
Email: vmahale@gmail.com
Time Zone: +5.5 (Summer +5.5)

Dr. Karen M. Marks

Laboratory for Satellite Altimetry
NOAA mail code E/RA-31
National Oceanic and Atmospheric Administration
1335 East-West Highway, room 5322
Silver Spring
Maryland 20910-3282
UNITED STATES OF AMERICA
Fax: +1-301-713-3136
Tel : +1-301-713-2857, extension 124
Email: Karen.Marks@noaa.gov
Time Zone: -5 (Summer -4)

Dr Larry A. Mayer

Director, Centre for Coastal and Ocean Mapping
University of New Hampshire
Durham
NH 03824
UNITED STATES OF AMERICA
Fax: +1 (603) 862 0839
Tel:+1 (603) 862 2615
Email: lmayer@unh.edu
Time Zone: -5 (Summer -4)

Mr David Monahan**Chairman, GEBCO**

Center for Coastal and Ocean Mapping/NOAA-UNH Joint Hydrographic Center
University of New Hampshire
24 Colovos Rd.
Durham
03824 New Hampshire
UNITED STATES OF AMERICA
Fax +1 (603) 862 – 0839
Tel. +1 (603) 862 - 3755
Email: monahand@ccom.unh.edu
Time Zone: -5 (Summer -4)

Lt Cdr Hugo Montoro

Direccion de Hidrografia y Navegacion
de la Marina de Guerra del Peru
Av. Gamarra Nro. 500
Chucuito- Callao 1
PERU
Fax: 511 4652995
Tel: 511 4299868
Email: hmontoro@dhn.mil.pe or hmontoro@hotmail.com

Mr Taisei Morishita

Continental Shelf Surveys Office
Hydrographic and Oceanographic Department
Japan Coast Guard
5-3-1Tsukiji
Chuo-ku
Tokyo 104-0045
JAPAN
Email: taisei-morishita@kaiho.mlit.go.jp or

moritai55@hotmail.com

Dr Carlos Mortera

Sismotectonica y Geofisica Marina
Instituto de Geofisica
Universidad Nacional Autonoma de Mexico
Ciudad Universitaria
Coyoacan 04510
Mexico D.F.
MEXICO
Fax: +52 (55) 5616 2517
Tel: +52 (55) 5622 1126 ext. 34
Email: carlosm@ellin.igeofeu.unam.mx
Time Zone: -7 (Summer -6)

Dr Christian de Moustier

Centre for Coastal and Ocean Mapping
University of New Hampshire
Durham
NH 03824
UNITED STATES OF AMERICA
Fax: +1 (603) 862 0839
Tel: +1 (603) 862 3434
Email: cpm@ccom.unh.edu
Time Zone: -5 (Summer -4)

Dr German Naryshkin

All-Russian Research Institute
for Geology and Mineral Resources
of the World Ocean
(VNIIOKEANGEOLOGIA)
1, Angliisky Avenue
190121 St Petersburg
RUSSIAN FEDERATION
Fax:+7 (812) 114 1470
Tel: +7 (812) 113 8379
Email: vnio@g-ocean.spb.su
Time Zone: +3 (Summer +4)

Mr George B. Newton

4350 N. Fairfax Drive, Suite 510
Arlington
VA 22203
UNITED STATES OF AMERICA
Fax: +1 (703) 390 5084
Tel: +1 (703) 788 7729 or +1 (703) 525-0111
Email: gbnewton@plansys.com
gbnewton@verizon.net
Time Zone: -5 (Summer -4)

Dr Yasuhiko Ohara

Ocean Research Laboratory
Hydrographic and Oceanographic
Department of Japan
3-1 Tsukiji 5 Chome
Chuo-ku

Tokyo 104-0045
JAPAN
Fax: +81 (3) 3541 3870
Tel: +81 (3) 3541 4387
Email: ohara@jodc.go.jp
Time Zone: +9 All year

Mr. Trent Palmer
Secretary ACUF
US Board on Geographic Names
National Imagery and Mapping Agency (NIMA)
Stop D-61
Bethesda, Maryland 20816-5003
UNITED STATES OF AMERICA
Fax: +1 (301) 227 5515
Tel: +1 (301) 227 3050
E-mail: palmert@nima.mil
Time Zone: -5 (Summer -4)

Mr Tony Pharaoh
International Hydrographic Bureau
4 quai Antoine 1er
B.P.445 - MC 98011 Monaco Cedex
PRINCIPALITY OF MONACO
Fax: +377 93 10 81 40
Tel: +377 93 10 81 08
Email: apharaoh@ihb.mc
Web: <http://www.iho.int>
Time Zone: +1 (Summer +2)

LCdr. Rafael PONCE Urbina
Dirección G^{al} Adj de Hidrografía y Cartografía
Eje 2 Oriente, Tramo H. Escuela Naval Militar
No. 861, Edificio "B", 1/er. Nivel.
Col. Los Cipreses, Delegación Coyoacán
C.P. 04830 México D.F.
MEXICO
Fax: +52 556 246500 Ext. 1242
Tel: +52 556 246515
E-mail: hidrografia.mexico@gmail.com
Time Zone: -6 (Summer -5)

Capt. Andrey Popov
Technical Director
ChartPilot
8-11, Liniya V.O. B-34
199034 St Petersburg
RUSSIAN FEDERATION
Fax: +7 (812) 321 6537
Tel: +7 (812) 277 4362, mob. 7-901-639-1825
Email: a.popov@chartpilot.ru
Time Zone: +3 (Summer +4)

Cmdr Mario Proaño

Director INOCAR
Av. 25 de Julio Via Puerto Maritimo
Base Naval Sur
Guayaquil
ECUADOR
Fax: +59 3 4 2481300
Tel: +59 3 2485166
Email: interinfo@inocar.mil.ec
Web Site: <http://www.inocar.mil.ec>
Time Zone: -5 (Summer -5)

Mr William Rankin

Code OTT
United States Naval Oceanographic Office
1002 Balch Boulevard
Stennis Space Center
Mississippi 39522-5001
UNITED STATES OF AMERICA
Fax: +1 (228) 688 4931
Tel: +1 (228) 688 5709
Email: william.e.rankin@navy.mil
Time Zone: -6 (Summer -5)

Lic. Walter REYNOSO Peralta

Servicio de Hidrografía Naval
Avenida Montes de Oca 2124
1271 Buenos Aires
ARGENTINA
Fax: + 541 1 4301 3883
Tel: + 541 1 4301 0061 / 68
E-mail: wreyper@hidro.gov.ar or wreyper@yahoo.com.ar

Ing. Mario Alberto REYES Ibarra

Director General de Geografía
Instituto Nacional de Estadística
Geografía e Informática, INEGI.
Heroe de Nacozari Sur No. 2301
Frace. Jardines del Parque
C.P. 20270 Aguascalientes, Ags.
MÉXICO
Fax: (52-449) 442 41 60
Tel: (52-449) 910 54 06
Email: mario.reyes@inegi.gob.mx
Time Zone: -7 (Summer -6)

Ingénieur général André Roubertou

(Président IBCEA)
c/o Service Hydrographique et
Océanographique de la Marine
3, avenue Octave Gréard
Paris 7^{ème}
BP 5
00307 Armées
FRANCE

Fax:+33 (1) 4174 9425 (at SHOM)
Tel:+33 (1) 45 77 52 86 (private)
Time Zone: +1 (Summer +2)
Mark all correspondence (including Fax messages) Prière de faire suivre

Dr. William B. F. Ryan

Lamont-Doherty Earth Observatory
61 Route 9W - PO Box 1000
Palisades NY 10964-8000
UNITED STATES OF AMERICA
Fax +1 845-365-8156
Tel: +1 845-365-8312
Email: billr@ldeo.columbia.edu
Time Zone: -5 (Summer -4)

Dr. Hans-Werner Schenke

Bathymetry & Geodesy
Alfred-Wegener-Institut für Polar-und Meeresforschung
Postfach 12 01 61
Columbusstrasse
D-27568 Bremerhaven
GERMANY
Fax: +49 (0) 471 4831 1977
Tel: +49 (0) 471 4831 1222-1223; home +49 471 200262; mob. +49 (0)170 7844491
Email: Hans-Werner.Schenke@awi.de
Time Zone: +1 (Summer +2)

Ms Shereen Sharma

Fugro Survey Pty Ltd
Hydrographic House
4 Ledger Road
Balcatta 6914, WA
AUSTRALIA
Tel : (61-8) 62411 337
Email: s.sharma@fugro.com.au or shereen_sharma@yahoo.com

Dr George Sharman

National Geophysical Data Center
325 Broadway NOAA Mail Code: E/GC3
Boulder, Colorado 80305-3328
UNITED STATES OF AMERICA
Fax:+1 (303) 497 6513
Tel:+1 (303) 497 6345
Email: George.F.Sharman@noaa.gov
Time Zone: -7 (Summer -6)

Cdr Steve Shipman

International Hydrographic Bureau
4 quai Antoine 1er
B.P.445 - MC 98011 Monaco Cedex
PRINCIPALITY OF MONACO
Fax: +377 93 10 81 40
Tel: +377 93 10 81 06
Email: sshipman@ihb.mc
Website: <http://www.iho.int>

Time Zone: +1 (Summer +2)

Dr Walter H. F. Smith

NOAA Lab for Satellite Altimetry
NOAA code E/RA31,
1315 East-West Highway, Room 5408
Silver Spring
Maryland 20910-3282
UNITED STATES OF AMERICA
Fax: +1 (301) 713 3136
Tel: +1 (301) 713 2857, ext. 126
Email: Walter.HF.Smith@noaa.gov
Website: <http://ibis.grdl.noaa.gov/SAT>
Time Zone: -5 (Summer -4)

Captain V. Sobolev

8,11 Linija
199034 St-Petersburg
RUSSIAN FEDERATION
Fax: +7-812-323-75-48
Tel: +7-812-323-75-48
Email: gunio@chartpilot.ru
Time Zone: +3 (Summer +4)

Dr Karlapati SRINIVAS

National Institute of Oceanography
G.O.D.
Dona Paula
Goa 403 004
INDIA
Email: fan_v@yahoo.com and srinivas@darya.nio.org

Mr Shin Tani

Cabinet Counselor
Coordination Office for Continental Shelf Surveys
Cabinet Secretariat, Government of Japan
1-11-39, Nagata-cho
Chiyoda, Tokyo, 100-0014
JAPAN
Fax: +81 (3) 3506-4503
Tel: +81 (3) 5501-2563
Email: t@ni.777.ac
Time Zone: +9 All year

Mrs Lisa A. Taylor

National Geophysical Data Center
Mailcode E/GC3
325 Broadway
Boulder, CO 80305-3328
UNITED STATES OF AMERICA
Fax: +1 303-497-6513
Tel: +1 303-497-6767
Email: Lisa.A.Taylor@noaa.gov
Time Zone: -7 (Summer -6)

Mr Nguyen Duy THANH

Research Institute for Marine Fisheries
170 Le Lai Street
Ngo Quyen District
Haiphong City
VIETNAM

Fax:

Tel:

Email: ngduy_thanh@yahoo.com and ndthanh@rimf.org.vn

Time Zone: +7 (Summer +7)

Capt. Albert E. Theberge

Office of Coast Survey
1315 East-West Highway, Room 6207
Silver Spring
Maryland

UNITED STATES OF AMERICA

Fax: +1 (301) 713-4019

Tel:

E-mail : Albert.E.Theberge.Jr@noaa.gov

Time Zone: -5 (Summer -4)

Ms Paola Travaglini

Canadian Hydrographic Service
Bayfield Institute
Canada Centre for Inland Waters
867 Lakeshore Road
Burlington
Ontario L7R 4A6
CANADA

Fax: +1 905-336- 8916

Tel.: +1 905-336-4558

Email: TravagliniP@dfo-mpo.gc.ca

Time Zone: -6 (summer -5)

Dr Dmitri Travin

Intergovernmental Oceanographic Commission
UNESCO

1, rue Miollis

75732 Paris Cedex 15

FRANCE

Fax:+33 1 45 68 58 12

Tel: +33 1 45 68 40 44

Email: d.travin@unesco.org

Time Zone: +1 (Summer +2)

Lt Leonardo TUN Humbert

Recursos Hidraulicos 17,
Colonia Estatuto Juridico,
Boca del Rio, Veracruz
MEXICO C.P.94294

Fax:

Tel:

Email:

Time Zone: -6 (summer -6)

Dr Nataliya Turko

Pyzhevsky 7
Moscow 119017
RUSSIAN FEDERATION
Fax: +7 (495) 951 0443
Tel: +7 (495) 230 8180
Email: turko@ginras.ru
Web site: <http://atlantic.ginras.ru>
Time Zone: +3 (Summer +4)

Dr Gleb B. Udintsev

Vernadsky Institute of Geochemistry
19 Kosygina Street, 117975 Moscow
RUSSIAN FEDERATION
Fax: +7 (095) 938 2054 (for Udintsev)
Tel: +7 (095) 977 5125 (home evenings), +7 (095) 137 86 48 (office)
Email: galstrel@mail.ru or geokhi.ras@relcom.ru or glebudinstev@pochta.ru
Time Zone: +3 (Summer +4)

Mrs Lois C Varnado

Scientific Technology Staff, Code OTT
Naval Oceanographic Office
1002 Balch Boulevard
Stennis Space Center
MS 39522-5001
UNITED STATES OF AMERICA
Fax: +1 (228) 688 4931
Tel: +1 (228) 688 4546
Email: varnadol@navo.navy.mil
Time Zone: -6 (summer -5)

Mr John W. von Rosenberg

National Geospatial-Intelligence Agency (NGA)
4600 Sangamore Road
Bethesda, MD 20816-5003
Mailstop D-144 Code PVMI
UNITED STATES OF AMERICA
Fax: +1 301-227-4586
Phone: +1 301-227-3399
Email: vonrosenbj@nga.mil
Time Zone: -5 (Summer -4)

Ms Pauline Weatherall

GEBCO Digital Atlas Manager
British Oceanographic Data Centre (BODC)
Joseph Proudman Building
6 Brownlow Street
Liverpool L3 5DA
UNITED KINGDOM
Fax: +44 (151) 795 4912
Tel: +44 (151) 795 4873
Email: paw@bodc.ac.uk
Time Zone: 0 (Summer +1)

Dr David Wells

Geodesy and Geomatics Engineering

Head Hall
15 Dineen Drive
Fredericton, NB
CANADA E3B 5A3
Fax: +1 (506) 453 5147
Tel: +1 (506) 453 4943
Email: dew@unb.ca
Time Zone: -5 (Summer -4)

Prof Bob Whitmarsh
Permanent Secretary, GEBCO
School of Ocean & Earth Science
National Oceanography Centre
Empress Dock
Southampton SO14 3ZH
UNITED KINGDOM
Fax: +44 (023) 80 593052
Tel: +44 (023) 80 596564
Email: rbw@noc.soton.ac.uk
Time Zone: 0 (Summer +1)

Dr Ian Wright
National Institute of Water and Atmospheric Research Ltd.
Greta Point
Evans Bay Parade
PO Box 14-901
Kilbirnie, Wellington
NEW ZEALAND
Fax: +64 (4) 386 2153
Tel: +64 (4) 386 0300
Email: i.wright@niwa.cri.nz
Time Zone: +12 (Summer, S.Hemisphere +13)

Dr Kunio Yashima
Japan Hydrographic Association
Tsukiji Hamarikyu Building 8F,
5-3-3 Tsukiji
Chuo-ku
Tokyo 104-0045
JAPAN
Fax: +81 81-3-3543-0762
Tel: +81 (3) 3543-0686
E-mail: yashima@jha.jp
Time Zone: +9 All year

Dr Katagiri YASUTAKA
Yakuendai 5-25-15-1, 9-215
Funabashi-si
Chiba
JAPAN 274-0077
Fax:
Tel:
Email: yasutaka-katagiri@kaiho.mlit.go.jp
Time Zone: +9 All year

Mr Muhammad YAZID

Janhidros TNI AL,
JL. Pantai Kuta V NO.1 Ancol Timur,
Jakarta Utara 14430,
INDONESIA
Fax:
Tel:
Email: muhyazid89@gmail.com
Time Zone: +7 All year

Prof. Harry Yeh

Department of Civil Engineering
Oregon State University
Corvallis, OR 97331-3212
UNITED STATES OF AMERICA
Fax: +1 541-737-3052
Tel: +1 541-737-8057
E-mail: harry@enr.orst.edu
Time Zone: +8 (Summer +9)

Dr Tsuyoshi YOSHIDA

Hydrographic and Oceanographic Department
Japan Coast Guard
5-3-1Tsukiji
Chuo-ku
Tokyo 104-0045
JAPAN
Fax:
Tel: +81 3-3541-3689
Email: yoshi_gebco@yahoo.com

Mr Alexei A. Zinchenko

Secretary to the UN Commission on the Limits of the Continental Shelf
2 UN Plaza DC2-0438
New York N.Y. 10017
UNITED STATES OF AMERICA
Fax: +1 (212) 963 5847
Tel: +1 (212) 963 3966
Email: zinchenko@UN.org
Time Zone: -5 (Summer -4)

ANNEX 7

Acronyms

ACUF	Advisory Committee on Undersea Features
AGU	American Geophysical Union
ARGO	A global array of ~3,000 free-drifting profiling floats that measures the temperature and salinity of the upper 2000 m of the ocean
AWI	Alfred Wegener Institut, Bremerhaven, Germany
BODC	British Oceanographic Data Centre, Liverpool, UK
CCOM	Center for Coastal and Ocean Mapping (at the University of New Hampshire)
ENC	Electronic Navigational Chart
ENEA	Ente per le Nuove Tecnologie, l'Energia e l'Ambiente
EOS	Newsletter of the American Geophysical Union
GEO/GEOSS	Group on Earth Observations/ Global Earth Observation System of Systems GITC
GLOBEC	International GLOBal ocean ECosystems dynamics research program
HO	Hydrographic Office
IBC	International Bathymetric Chart
IBCAO	International Bathymetric Chart of the Atlantic Ocean
IBCCA	International Bathymetric Chart of the Central Atlantic
IBCEA	International Bathymetric Chart of the Eastern Atlantic
IBCM	International Bathymetric Chart of the Mediterranean
IBCNA	International Bathymetric Chart of the North Atlantic
IBCSEP	International Bathymetric Chart of the South East Pacific
IBCSO	International Bathymetric Chart of the Southern Ocean
IBCWIO	International Bathymetric Chart of the Western Indian Ocean
IBCWP	International Bathymetric Chart of the Western Pacific
IHB	International Hydrographic Bureau IHO
IHO	International Hydrographic Organization
IOC	Intergovernmental Oceanographic Commission
NF	Nippon Foundation
NGDC	National Geophysical Data Center, Boulder, USA
NOAA	(US) National Ocean and Atmospheric Administration
NSF	(US) National Science Foundation
OI	Oceanology International (exhibition)
PM	Project Manager
PMC	Project Management Committee
SCDB	Sub-Committee on Digital Bathymetry
SCOR	Scientific Committee on Oceanic Research of the International Council for Science
SCUFN	Sub-Committee on Undersea Feature Names
SHOM	Service Hydrographique et Océanographique de la Marine (French Hydrographic and Oceanographic Service)
SOLAS	Surface Ocean - Lower Atmosphere Study
TSCOM	Technical Sub-Committee on Ocean Mapping
UNESCO	United Nations
UNGEGN	United Nations Group of Experts on Geographical Names
UNH	University of New Hampshire, Durham, USA
URL	Uniform Resource Locator (unique name of a web site)
USD	United States dollars

WG

Working group