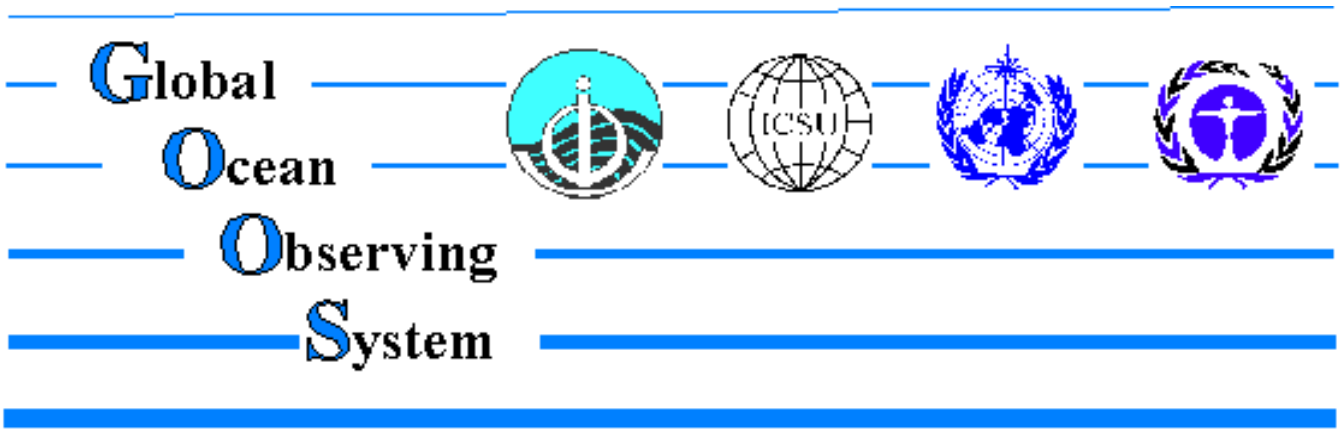

Intergovernmental Oceanographic Commission
Reports of Meetings of Experts and Equivalent Bodies

IOC/WESTPAC Co-ordinating Committee for the North-East Asian Regional - Global Ocean Observing System (NEAR-GOOS)

Fourth Session
Tokyo, Japan
28 September - 1 October 1999

GOOS Report No. 77

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IOC/WESTPAC-NEAR-GOOS-CC-IV
Paris, March 2000
English only

TABLE OF CONTENTS

SUMMARY REPORT

1. OPENING

1 The Fourth Session of the IOC/WESTPAC Co-ordinating Committee for the North-East Asian Regional - Global Ocean Observing System (NEAR-GOOS) was called to order by its Chairman, Prof. Zhouwen YU, at 1000 hours on Tuesday, 28 September 1999, at the Japan Meteorological Agency (JMA), Tokyo Japan.

2 The Chairman welcomed all the participants, especially the new Committee Member from the Republic of Korea, Dr. Hee-Dong JEONG. The Chairman then expressed his appreciation to the Japanese Government and the JMA for hosting the meeting, especially to Mr. Naoyuki HASEGAWA, a member of the Co-ordinating Committee from JMA, for his effort in organizing the meeting. He further thanked the Secretariat, Dr. Shigeki MITSUMOTO, IOC Regional Secretariat for WESTPAC and Ms. Rimi NAKANO, IOC Secretariat, for their efforts in preparing the meeting.

3 At the invitation of Prof. Yu, Mr. Hasegawa introduced the Director-General of the JMA, Mr. Yuso TAKIGAWA. Mr. Takigawa, welcoming the participants, mentioned that GOOS is moving forward from its planning phase to an operational demonstration/pilot experiment phase, and expressed his satisfaction with the successful implementation and achievements of NEAR-GOOS, thanks to efforts by the Committee members, support by the Secretariat, and appropriate guidance by the Chairman of IOC/WESTPAC. He noted JMA's active participation in NEAR-GOOS since its planning stage, especially its operation of the Regional Real Time Data Base (RRTDB). He expected the participants to have an opportunity to see the operational facilities of the JMA and the Japan Oceanographic Data Centre (JODC), which operates the NEAR-GOOS Regional Delayed Mode Data Base (RDMDB), as well as to discuss various aspects of NEAR-GOOS with Japanese experts and representatives of relevant organizations. He emphasized the importance for NEAR-GOOS to show its usefulness and offered his congratulations that representatives of several related projects were invited to the meeting. He concluded his opening address by expressing his wish for the success of the meeting in agreeing on effective and attractive guidelines for future advancement of NEAR-GOOS.

4 Prof. Keisuke TAIRA, Chairman of IOC/WESTPAC, Director of the Ocean Research Institute, University of Tokyo, also welcomed participants to the Session and to Tokyo and thanked Mr. Takigawa and his staff for organizing the meeting. He noted that Mr. Kuniyuki SHIDA, one of the members of the local organizing committee attending the session as an observer, had played a key role in establishing NEAR-GOOS. Also he informed the session with satisfaction that Prof. Jilan SU from China, the former Chairman of the IOC/WESTPAC, who had also contributed to the planning stage of NEAR-GOOS, had been elected as the Chairman of the IOC at the 20th Session of the IOC Assembly in July 1999. He reviewed the discussions related to NEAR-GOOS in which he had been involved during the intersessional period on the occasions of (i) the Fourth Session of the IOC/WESTPAC (Seoul, March 1999), (ii) the Fourth Session of the Intergovernmental Committee for GOOS (Paris, June 1999) and the Initial GOOS Commitment Meeting (Paris, July 1999), and (iii) the Workshop on Indian Ocean GOOS (Perth, September 1999). He encouraged the Committee to make a continuous effort to achieve the goal of NEAR-GOOS to complete ocean forecasts in the region.

5 On behalf of the Executive Secretary of IOC, Dr. Shigeki MITSUMOTO, Technical Secretary to NEAR-GOOS, first forwarded his sincere gratitude to all the Committee members, invited experts and observers for their participation, secondly to the Government of Japan for hosting this meeting, especially to the Ministry of Education, Science, Sports, and Culture (*Monbusho*, hereafter) and JMA. He expressed special gratitude to Mr. Takigawa, the Director-General of JMA for the excellent arrangements for the meeting, and to Mr. Hasegawa, the former Chairman of NEAR-GOOS Co-ordinating Committee and currently a Committee member representing Japan, for his dedicated hard work in preparing this meeting. Dr. Mitsumoto then introduced Dr. Hee-Dong JEONG, the new Committee member representing the Republic of Korea, who succeeded Dr. Sangbok HAHN, to all the participants with a welcome message. He also welcomed Dr. Alexander MAN'KO, representing the Russian Federation, who participated in the meeting on behalf of Dr. Tkalin.

2. ADMINISTRATIVE ARRANGEMENTS

2.1 ADOPTION OF THE AGENDA

6 The Technical Secretary introduced the Provisional Agenda by referring to document IOC/WESTPAC-NEAR-GOOS-CC-IV/1 prov. The Committee adopted the agenda with minor modifications. (Annex I)

2.2 DESIGNATION OF RAPPORTEUR

7 A Delegate of Japan nominated Prof. Victor AKULICHEV from the Russian Delegation to be the Rapporteur of the session. The nomination was seconded by a Delegate of the Republic of Korea and Prof. Akulichev was designated as Rapporteur.

2.3 WORKING ARRANGEMENTS

8 The Technical Secretary introduced the provisional list of documents (IOC/WESTPAC-NEAR-GOOS-CC-IV/4 prov.) and indicated that there would be some more documents submitted by participants and that these would be added to the documents for the session.

9 The working language of the meeting was agreed to be English. The list of participants is given in Annex II.

3. REPORT OF THE OPERATION

3.1 REPORT BY THE CHAIRMAN

10 The Chairman reported on the activities and achievements during the last intersessional period, referring to the document IOC/WESTPAC-NEAR-GOOS-CC-IV/6.

11 NEAR-GOOS Regional Data Bases have continued to be in satisfactory operation and have provided marine data to users. Many users within and outside the NEAR-GOOS region have accessed these databases and obtained data to improve their research, marine management, and operational services. The Chinese National RTDB and DMDB are also in operation, providing data to users. Both in the Republic of Korea and in the Russian Federation, related organizations provide their data on their respective web sites. The Chairman expressed his hope that the National RTDBs and DMDBs would soon be set up and operated completely in these two countries.

12 Following the decision at the third session on data quality control, RRTDB has cooperated with GTSPP (Global Temperature Salinity Profile Programme) and has started to provide quality-controlled subsurface temperature and salinity data set. The Chairman regarded it as a good start of data quality control of the NEAR-GOOS system.

13 The Second IOC/WESTPAC Training Course on NEAR-GOOS Data Management was organized by JODC in October 1998. This kind of training is an important aspect of capacity building of NEAR-GOOS and a measure to promote the progress of NEAR-GOOS. The Chairman expressed his appreciation to JODC and the Japanese Government, which provided financial support for the training course.

14 There were extensive discussions on NEAR-GOOS during the Fourth Session of the IOC Sub-Commission for the Western Pacific (WESTPAC-IV) held in Seoul, Korea, in March 1999. At that session, the Chairman presented the achievements of the NEAR-GOOS, which include: (i) an intergovernmental agreement on an open data exchange policy among the member countries, (ii) establishment of operational databases in Real Time Mode and Delayed Mode, (iii) organization of a series of training courses, (iv) adoption and revision of the Operational Manual, and (v) increase in the number of data users and contributors. At the scientific seminar on GOOS-related projects held in conjunction with the WESTPAC-IV session, the Chairman explained the NEAR-GOOS system in more detail, and presented his personal suggestions for further improving the system. His suggestions were: (i) expansion of data in the databases, (ii) data quality control, (iii) adopting a common data format, (iv) increase in data users, (v) publication of a brochure and newsletters, (vi) continuation of the training course, (vii) organization of a regional conference on NEAR-GOOS, and (viii) cooperation with other relevant projects. Further, taking advantage of the fact that there were many people in Seoul related to NEAR-GOOS, Dr. Dong-Young LEE organized a dinner meeting. WESTPAC-IV approved the proposal by the project leader of the Continental Shelf Circulation Project (ODC-3) to hold a joint NEAR-GOOS/ODC Workshop, backed-up by the idea that NEAR-GOOS should expand its operation from the present data management to the inclusion of forecasts of marine environments.

15 Prof. Yu concluded his report by stating that although the achievements in NEAR-GOOS made so far were encouraging, the improvement of many aspects of NEAR-GOOS was urgently needed in order to achieve the goals of NEAR-GOOS. He listed the key points as (i) to include more data in the databases, (ii) to enhance data quality control, (iii) to make the data format as unified as possible, and (iv) to carry out cooperation with other related projects.

16 The Committee expressed its appreciation to the Chairman for his comprehensive report and for his intersessional efforts in promoting the NEAR-GOOS, such as what he did on the occasion of the WESTPAC-IV, and adopted the report. The committee agreed to advance the discussion according to the direction manifested in the Chairman's report.

3.2 REPORT BY THE TECHNICAL SECRETARY

17 Dr. Mitsumoto, as the Technical Secretary, first reported on the progress and improvements of the NEAR-GOOS data system since the last session (Beijing, August 1998) referring to the Action Sheet of the third session, which had been prepared jointly by the Secretariats of IOC and IOC/WESTPAC. As the creation of such an action sheet was not adopted during the last session, it was not included in the summary report of the third session, but was separately circulated among the Committee members. He informed the Committee with pleasure and gratitude that many of the items assigned to Committee members and data managers had been realized, which would be reported afterwards in detail by the members, but regretted that some of the actions assigned to the Secretariat had not yet been realized.

18 The Committee agreed that such an action sheet should be adopted in the present session, and included in the summary report accordingly.

19 Dr. Mitsumoto then invited all the participants to bear in mind the "issues of the current situation of NEAR-GOOS" by referring to the Discussion Paper (Doc. IOC/WESTPAC-NEAR-GOOS-CC-IV/8), suggesting discussing these issues later during the session under appropriate agenda items.

3.3 REPORT ON REGIONAL DATA BASE MANAGEMENT

3.3.1 Regional Real Time Data Base (RRTDB)

20 Mr. Naoyuki HASEGAWA, Manager of RRTDB, presented his report on the operation and activities related to RRTDB during the last intersessional period. RRTDB has been operated successfully. All the software used for the operation of the RRTDB was checked for the Y2K problem, and its necessary revisions were completed in August 1999.

21 Since September 1998, eight new organizations had been added to the RRTDB users, and by 1 September 1999, 33 organizations were registered as users of RRTDB. During the past one year the frequency of ftp access to retrieve data from RRTDB was 1,000 to 1,400 files per month. From March to August 1999 the most frequently accessed were original BATHY data, followed by the temperature data in the RRTDB common format. The frequency of access to the RRTDB homepage increased in March/April 1999 from around 1,000 to around 1,500 hits per month. This may be a result of the distribution of version 2.0 of the Operational Manual.

22 In accordance with the agreement at the third session, RRTDB developed a registration system in which users can be registered through the WWW homepage. This system started its operation in April 1999.

23 In addition to JMA, Far Eastern Regional Hydrometeorological Research Institute (FERHRI), Japan Fisheries Information Service Centre (JAFIC), and several other organizations have started contributing NEAR-GOOS real time data exchange since the previous session. In September 1998, the Ocean Research Institute (ORI) of Tokyo University started to provide the data from their PALACE floats deployed in the NEAR-GOOS area. In May 1999, the Marine Environmental Data Service (MEDS) of Canada started to provide the quality controlled temperature and salinity profile data by ftp to the RRTDB server. RRTDB changed the mode of communication with FERHRI in June 1999, and now RRTDB retrieves the data from the server of FERHRI. In September 1999, RRTDB started the regular retrieval of buoy observation data from Korea Ocean Research & Development Institute

(KORDI), and it has started the regular retrieval of the data from coastal stations, buoys and ships from the National Marine Environment Forecasting Centre of China.

3.3.2 Regional Delayed Mode Data Base (RDMDB)

24 Mr. Toshio NAGAI, Manager of the RDMDB, reported on the operation of the RDMDB during the last intersessional period. He informed the session that the JODC had changed the homepage address of the RDMDB in conjunction with the adoption of a new server system on July 2, 1999. The new RDMDB homepage address is (http://near-goos.jodc.jhd.go.jp/).

25 In accordance with the agreement made at the third session, JODC adopted a new online registration system. With this system, anyone can register as a user simply by inputting the required information, such as the name of the organization, the user's name, e-mail address, telephone number and purpose. Once registered, users can obtain data just by inputting their registered e-mail addresses. 14 organizations have newly registered through this new system.

26 In order that users can find data they need more quickly and smoothly, the JODC created data summaries organized by month and year and by data type.

27 Mr. Nagai indicated that the total volume of the data collected by the end of June 1999 was about 640MB. In January 1999, tide data from 29 tide stations belonging to the Hydrographic Department of Japan Maritime Safety Agency was added to the RDMDB. The data are collected through observations carried out at 30-second intervals, and then compiled monthly.

28 The number of users has been steadily increasing. As of September 1999, 24 organizations were registered users of the RDMDB. Since May 1999, the access number has exceeded 200 times a month. The number of data files downloaded in a month reached 487 files in June 1999.

29 A survey questionnaire on RDMDB usage was carried out from August to early September 1999, targeting RDMDB registered user organizations. The survey asked questions concerning the purpose of usage, the state of use, results obtained and so on. Out of the responses from eight organizations, Mr. Nagai introduced the example of the use of tidal data by the ORI, Tokyo University, for Kuroshio current monitoring. The use of data from NEAR-GOOS RDMDB for the monitoring is acknowledged on the ORI's homepage [http://dpo.ori.u-tokyo.ac.jp/research/Tide/time.html]. The Committee agreed that there should be a link between this homepage and RDMDB. [Action 1: see Annex III]

30 Responses from other organizations included the information that they used SST and oceanographic observation data and other information to analyse the Tsushima Current or otherwise study the voltage measurements for submarine cables. In addition, they use the data as initial value data for local models, etc., to enhance precision.

3.4 REPORT ON NATIONAL ACTIVITIES

3.4.1 China

31 Prof. Yu, as the delegate of China, informed the Committee about the status of the National RTDB in China. The China NEAR-GOOS National RTDB was set up in July 1998, and since then has been open to NEAR-GOOS users. The data in the database include: (i) Real-time data (waves, sea surface temperature, and meteorological parameters) collected at 14 observation stations along the China coast; (ii) Real-time buoy data (waves, SST, meteorological parameters) collected from one buoy in the Yellow Sea; (iii) Data of ship reports; (iv) Forecasting products (sea surface temperature, storm surge, typhoon, waves, sea ice).

32 The users of the China National RTDB are mainly those who are engaged in marine forecasts, marine management, and production activities at sea (for example, offshore oil companies, ocean transportation companies, etc.). Research scientists often access the China NEAR-GOOS DMDB.

33 In order to attract more users to the databases, China plans to hold a domestic user workshop next year.

Also, there is a plan for the State Oceanic Administration of China to publish a brochure describing the system and to distribute in time for the above-mentioned workshop. [Action 2: see Annex III]

34 The China NEAR-GOOS Committee plans to have a NEAR-GOOS Regional Symposium to share experiences with marine monitoring, jointly with a National Key Project entitled "Study of Marine Monitoring Technology" financially supported by the Ministry of Science and Technology. Scientists and engineers from China and abroad (especially from the NEAR-GOOS Region) will be welcomed to the symposium. [Action 2: see Annex III]

35 Prof. Yu lastly stated that in order to have more real-time data in the China NEAR-GOOS RTDB, they would try their best to get the government's permission to load more data into the database. [Action 2: see Annex III]

36 It was noted with regret that due to the absence of Dr. Hong WANG, the Committee could not have the presentation on the China National DMDB. The written report of Chinese DMDB would be sent to the Committee later (Annex IV).

3.4.2 Japan

37 Mr. Hasegawa stated that the main activities carried out in Japan during the last intersessional period, except for the operation of the two regional databases, for which the report had already been presented, were (i) publication and distribution of the Japanese version of the revised Operational Manual (Version 2.0) by JMA, (ii) organization of the NEAR-GOOS Data Management Training Course by JODC, (iii) continuous implementation of the five-year research programme by the universities in Japan.

38 Mr. Nagai provided the Committee with more information about the training course organized by JODC and financed by the Japanese Government. The second training course was held on 12-23 October 1998. A total of six trainees participated in the course: two from China, two from the Republic of Korea, and one each from Malaysia and the Russian Federation. The third training course will be organized on 24 January - 4 February 2000. The circular letter to invite nominations from WESTPAC Member States has already been sent out by the IOC Secretariat. The Committee agreed that the training course should have at least one participant from each NEAR-GOOS member country. The Committee recognized the importance of capacity building and appreciated the efforts of JODC and the Japanese Government. [Action 3: see Annex III]

39 Prof. Taira provided more information about the Japanese universities' research programme entitled "Physical, chemical and geological studies on monitoring of marginal seas for ocean forecasting - A Fundamental Research Project for NEAR-GOOS" with eight subjects. This research programme is funded by *Monbusho* through a funding scheme called "Scientific Research of Priority Areas (1999-2002)". He informed the meeting that a symposium to report the activities under each subject would be held on 10/11 November, and that Mr. Hasegawa would be invited to make a presentation on the NEAR-GOOS system.

40 The Committee took note of the importance of these kinds of research programmes underpinning the NEAR-GOOS system, and expressed its expectation for further cooperation with such research programmes.

41 Prof. Taira also introduced *Argo* programme using a brochure produced by NOAA, USA. The Committee appreciated the introduction of this important project, and also noted the JMA's plans to participate in *Argo* programme.

3.4.3 Republic of Korea

42 Dr. Dong-Young LEE presented a report on the national activity of the Republic of Korea. He introduced a demonstration web site (http://near-goos.kordi.re.kr) established by KORDI to provide real-time ocean data in the region effectively to the users inside Korea. He then identified the ocean data sources in Korea that might possibly be served in NEAR-GOOS Real Time Data Bases in the future. He also introduced the experiment carried out by KORDI using meteo drift buoys and ferryboats.

43 Dr. Hee-Dong JEONG, on behalf of the National DMDB of Korea, also presented a national report on

Korea. He first mentioned that KODC is in charge of the National DMDB to be completed in the middle of 2000, while KORDI and KMA (Korea Meteorological Administration) are considered to be serving as National RTDB, though a National Committee to make necessary arrangements is about to be established. [Action 4: see Annex III]

3.4.4 Russian Federation

44 Prof. Victor AKULICHEV presented a report on the national activity of the Russian Federation. Since 1998, marine meteorological data have been contributed to the NEAR-GOOS Regional RTDB by the Far Eastern Regional Hydrometeorological Research Institute (FERHRI), which has served as the National RTDB in Russia (www.hydromet.com). FERHRI, the Pacific Oceanological Institute (POI), Far East Branch of Russian Academy of Science and some other organizations, also participate in a few international programmes such as CREAMS, IODE/GODAR, and ONR's NICOP among others. As a result, the oceanographic data have become available for international data exchange and may be contributed to the NEAR-GOOS Delayed Mode Data Base.

45 Further development of the NEAR-GOOS programme in Russia is closely related to the Russian Federal Programme “Integrated System of Information about the World Ocean” (1999-2007). In addition, it is necessary to improve the telecommunication systems. Some improvements are now under development in FERHRI and POI. POI will maintain the National DMDB for NEAR-GOOS in Russia (http://www.pacific.marine.su). [Action 5: see Annex III]

4. COOPERATION WITH OTHER PROJECTS

4.1 GOOS

46 Ms. Rimi NAKANO, GOOS Project Office, informed the meeting about recent developments in GOOS. She indicated that the principles of GOOS had been widely recognized through the publication of *'The Strategic Plan and Principles for GOOS'* and *'The GOOS 1998 Prospectus'* in 1998, the encouragement by the 4th Conference of the Parties (COP-4) to the Framework Convention on Climate Change (FCCC) (Buenos Aires, November 1998) and so on. A resolution to endorse the concept and principles of GOOS was adopted at the 20th Session of the IOC Assembly (Resolution XX-7, June/July 1999). A great number of commitments from National Agencies to contribute to the implementation of GOOS were made at the Initial GOOS Commitment Meeting (Paris, July 1999). With the setting up of the GOOS Initial Observing System (GOOS-IOS), the practical implementation of GOOS has started.

47 There are a growing number of regional GOOS activities. Several issues related to regional GOOS are being discussed at a global level. Regardless of the differences between them, they are all expected to develop in compliance with the GOOS Principles. Decisions should be made as to how regional GOOS bodies can be best used to build the global system. The importance of coordination and cooperation among regions as well as between the regions and the GOOS Module Panels is emphasized, as well as the necessity of links between regional GOOS developments and other regional activities, particularly those of IOC and UNEP. The GOOS Steering Committee decided at its second session (Beijing, April 1999) to have an *ad hoc* group to discuss these regional issues intersessionally. I-GOOS intends to have a comprehensive debate on regional strategy at the next session (2001).

48 In order to enhance the awareness of GOOS and its benefits, it is necessary to regularly provide appropriate information about GOOS. The GSC-II decided to establish a GOOS Services and Products Bulletin to provide information about GOOS products including the context within which the products have been developed and information about the contributors of the products. NEAR-GOOS is supposed to be one of the sources of the products. Two of the NEAR-GOOS Co-ordinating Committee members have become members of the Advisory Body of the Bulletin.

49 Ms. Nakano provided further briefs on the status of the four GOOS Modules (Climate, Coastal, Living Marine Resources (LMR), and Health of the Ocean (HOTO)). As a result of the launch of the Coastal Panel and the LMR Panel in 1998, GOOS has stepped further forward towards a balanced development. It has been agreed that the Coastal, LMR, and HOTO Panels should be eventually merged into the GOOS Integrated Panel for the Coastal Ocean. When reviewing the activities of HOTO Panel, Ms. Nakano indicated that if NEAR-HOTO could be developed by cooperating with NEAR-GOOS, it would provide the HOTO module with the first example of implementation of a regional pilot project.

50 Taking into account of the fact that regional GOOS should learn from each other, Ms. Nakano introduced the activities of the EuroGOOS, especially its successful ways of fund raising. She drew the attention of the Committee to the Data Requirements Survey that EuroGOOS had conducted. It would be useful if the same kind of survey could be conducted in the NEAR-GOOS region.

51 In response to Ms. Nakano's briefing, Dr. Dong-Young LEE stated that the philosophy of EuroGOOS differs somewhat from that of NEAR-GOOS in such a way that EuroGOOS emphasizes more on data product to meet the demands of end users, while NEAR-GOOS is dealing mainly with exchange of ocean data in the region. He emphasized the importance for NEAR-GOOS to learn the philosophy of EuroGOOS in order to help it to review its own philosophy.

52 The Committee welcomed the information provided on GOOS and EuroGOOS and felt that NEAR-GOOS should be aware of the developments in GOOS at the global level as well as other regional GOOS programmes. [Action 6: see Annex III]

4.2 HOTO

53 Dr. Akira HARASHIMA, the National Institute for Environmental Studies (NIES) of Japan, introduced this item. NIES has been working with a marine environmental monitoring using ferryboats to evaluate the health of the coastal sea. Monitored variables are the water temperature, salinity, fluorescence, nutrients, phytoplankton pigments, etc. Underlying hypothesis is that the anthropogenic effects increase the discharge of nitrogen and phosphorus to the sea and reduce the supply of silicate and that these changes leads to the change in the dominant phytoplankton from diatom to non-diatom species. This programme is being extended to the Asian marginal seas by using a container ship that is plying the track Japan - Hong Kong - Singapore- Malaysia with the cooperation with the scientists of the related coastal countries. This programme and NEAR-GOOS Programme supplement each other in that the former and the latter take part mainly of the biological/chemical variables and the physical variables, respectively.

54 The Committee felt that exchange of the data and information between the NEAR-GOOS data exchange framework and the data distribution mechanism of the proposed NEAR-HOTO would benefit the participants in the two projects. Mr. Hasegawa was asked to keep contact with NEAR-HOTO, and keep the Committee up to date on this issue. [Action 7: see Annex III]

4.3 HAB

55 Dr. Yasuwo FUKUYO, the project leader of the WESTPAC-HAB programme introduced the session on the activities of his programme. He emphasized the social requirement for the establishment of a monitoring programme and forecasting system, and explained the complications of the HAB prediction process and the difficulty of collection of all the necessary data.

56 With regard to the cooperation with NEAR-GOOS, he suggested that the HAB programme should be a user of the NEAR-GOOS data, and that HAB, as a user, should request from GOOS the parameters they require. He stated that although the key parameters for the forecasting and monitoring of HAB had not yet been defined, and usually the number of parameters they needed were quite large, there were certain areas where monitoring and forecasting of HAB could be done using only basic parameters. The cooperation should be started with these kinds of areas.

57 The Committee felt that the dialogue should be continued between HAB and NEAR-GOOS, and requested that the Technical Secretary maintain it. [Action 7: see Annex III]

4.4 NOWPAP (North West Pacific Action Plan)

58 Mr. Yihang JIANG, the representative of UNEP provided brief information on the second phase of implementation of NOWPAP/1 and NOWPAP/3. He introduced the agreed activities of NOWPAP/1 during next three years and potential coordination with NEAR-GOOS. He further presented the potential coordination by comparing the similarities and differences of the two projects, including geographic coverage, particularly countries,

scientific objectives, and participating institutions. He emphasized that the key element for the cooperation and coordination is at a national level. To strengthen dialogue and cooperation among participating institutions, and to provide national requirements to the national focal points for IOC and UNEP respectively, will greatly secure cooperation and coordination between the two projects.

59 Dr. Hee-Dong JEONG mentioned that NFRDI (National Fisheries Research and Development Institute) is responsible for NOWPAP, HOTO, and other environment-related programmes. NFRDI is the mother organization of KODC, which is preparing for the Korea NEAR-GOOS National DMDB. In this sense, the Republic of Korea is ready to cooperate with these programmes. Mr. Nagai mentioned that JODC is responsible for NOWPAP/1 in Japan.

60 The Committee decided that the Committee members should start conversation with the NOWPAP focal points in their respective countries and explore the possibility of cooperation and coordination of the national activities between the two projects. [Action 9: see Annex III]

61 Dr. Jeong was appointed as a focal point of the Committee to NOWPAP. Mr. Jiang was requested to provide the Committee with the information on the NOWPAP's requirements for data exchange systems. [Action 9: see Annex III]

4.5 ODC

62 On behalf of Dr. Daji HUANG, who unfortunately could not attend the session, the Technical Secretary informed the session about the WESTPAC Continental Shelf Circulation Programme (ODC-3), based on the document prepared and submitted in advance to the session by Dr. Huang.

63 Prof. Yu supplemented it by referring to the discussions during the WESTPAC-IV (Seoul, March 1999), where Prof. Jilan SU, former project leader of the ODC-3 programme suggested expansion of NEAR-GOOS activity from the present data management mode to the extended mode including marine environment forecasting. Prof. Su proposed that a circulation project be initiated in NEAR-GOOS with the goal of providing predictive physical oceanographic models as the basis for marine environment forecasting, and also that a workshop be organized jointly by NEAR-GOOS and ODC-3. This proposal was approved by the WESTPAC-IV. The Chairman then invited discussion on how to initiate the cooperation and how to prepare the proposed workshop.

64 The Committee supported the idea as an appropriate direction that NEAR-GOOS should take. It was suggested that the workshop should be attended by people involved in programmes dealing with forecasting such as CREAMS and research programmes at Japanese Universities. Prof. Taira suggested that the workshop could be organized in conjunction with the next WESTPAC Scientific Symposium, to be held in the Republic of Korea in early 2001, so that people from various programmes could be invited. He then emphasized the important role of NEAR-GOOS data for the efforts. The WESTPAC Secretariat was requested to seek the possibility to hold the workshop in conjunction with the 5th WESTPAC Scientific Symposium, or with other relevant conferences if feasible. [Action 10: see Annex III]

65 Dr. Lobanov expressed the interest of PICES in cosponsoring the workshop. [Action10: see Annex III]

66 The Committee decided to assign Prof. Yu as the liaison to ODC-3 to be responsible for the preparation of the joint workshop, in consultation with the other member of the Committee. It was agreed that NEAR-GOOS should request ODC-3 to assign a focal point. [Action10: see Annex III]

4.6 PICES

67 Dr. Vyacheslav LOBANOV, the Chairman of the PICES Committee on Physical Oceanography and Climate, informed the session about the activities of PICES (North Pacific Marine Science Organization), an intergovernmental scientific organization consisting of Canada, Japan, China, the Republic of Korea, the Russian Federation, and USA as member countries. He indicated the interest of PICES in cooperating with GOOS and NEAR-GOOS, and noted that a one-day discussion on various GOOS issues would be held during the meeting of the MONITOR Task Team of the Climate Change and Carrying Capacity programme of PICES, immediately prior

to the upcoming PICES Eighth Annual Meeting in Vladivostok (Oct.8). A representative of NEAR-GOOS was invited to the meeting. [Action 11: see Annex III]

68 With regard to the relation with NEAR-GOOS, he indicated PICES's intention to cooperate with NEAR-GOOS on advancing a North Pacific GOOS programme. In this context, PICES wishes to expand the NEAR-GOOS experience to the entire North Pacific. Lastly, he transferred the request from the experts in other programmes within PICES as users of NEAR-GOOS databases, to include more environmental parameters to the NEAR-GOOS system.

69 In response to Dr. Lobanov's question if NEAR-GOOS has the intention of expanding the region to the North Pacific GOOS, the Committee agreed that it would be better not to change the definition of the region and the participating countries at this stage, considering the importance for NEAR-GOOS to concentrate on completing its own goal, but that marine data outside the region should be welcomed by the NEAR-GOOS system.

70 Mr. Nagai provided the session with additional information as a member of the Technical Committee on Data Exchange for PICES. PICES does not have its original database, but on the website of the PICES, they have many links to the databases of other programmes. At the PICES-VII (Alaska, Oct. 1998), Mr. Nagai introduced the NEAR-GOOS database and now there is a link to the NEAR-GOOS on the PICES's homepage. The homepage address of PICES is: (http://pices.ios.bc.ca).

4.7 COASTAL GOOS

71 On behalf of Dr. Hong WANG, who unfortunately could not attend the session either, the Technical Secretary informed the session about Coastal GOOS based on the document prepared and submitted in advance to the session by Dr. Wang, one of the members of the GOOS Coastal Panel.

72 To supplement it, Ms. Nakano informed the session, with appreciation to the Chinese Government, that the next session of the Coastal Panel would be held in Tianjing, China, on 3-5 November with one day for a stakeholders' meeting. As a member of the local organizing committee, Dr. Wang had requested all the Committee members to recommend potential users of Coastal GOOS to participate in the meeting. [Action 12: see Annex III]

4.8 SEAGOOS

73 Dr. Mitsumoto made a presentation on SEAGOOS referring to a background paper prepared by the WESTPAC Secretariat. The establishment of a SEAGOOS programme will still take considerable time and effort to move forward from its present conceptual stage. Whilst the development of NEAR-GOOS benefited from the presence of a number of existing mechanisms of cooperation in the region, only few such mechanisms exist in the SEAGOOS area. The situation is made worse by the difficult nature of intergovernmental cooperation in the SEAGOOS area. It is anticipated that the present IOC/WESTPAC Gulf of Thailand Collaborative Study can act as a useful platform for the further development of SEAGOOS.

74 The representative of UNEP expressed the willingness to cooperate with the IOC in the preparation and implementation of the SEAGOOS project once it is approved.

4.9 ONR

75 Prof. Hassan ALI, Senior Representative of the Office of Naval Research International Field Office (ONRIFO) Asia, explained the structure and activities of ONR, especially of ONRIFO Asia. He emphasized the mission of ONRIFO, which is to enhance collaboration between scientists and engineers in the Asia-Pacific region and their counterparts in the United States of America. He noted the various mechanisms for accomplishing this collaboration, including ONR support for scientists/engineers to visit their US counterparts, and support for joint research. He provided examples of several ONR–supported on-going collaborative efforts with some of the countries in the Asia-Pacific region.

76 One of their most active projects is the Japan/East Sea (JES) Circulation Research Project, with the participation of the USA, the Republic of Korea, Japan and the Russian Federation. Prof. Ali noted that data from the JES project, as well as many other items of interest, are available on the JES web page (http://sam.ucsd.edu/onr_jes/). The Committee appreciated the policy of the project to open their observational data

in real time. Prof. Ali concluded his presentation by expressing the interest of ONR in cooperation and collaboration with NEAR-GOOS. The homepage address of ONRIFO Asia is: (http://www.onr.navy.mil/ onrasia/).

77 The Committee thanked Prof. Ali for providing the important information and requested that he encourage ONR's projects to provide data to NEAR-GOOS.

4.10 OVERALL DISCUSSION

78 The Committee discussed the principles with regard to the relationship between NEAR-GOOS and other related projects, and agreed that NEAR-GOOS should be a sort of infrastructure of data exchange system, which other programmes could use as a vehicle. In this context, it was suggested that the Committee should request that other programmes make known what they require from NEAR-GOOS, so that the Committee could discuss improvements at the next session. [Action13: see Annex III]

5. PROGRAMME

5.1 DATA QUALITY CONTROL

79 Mr. Hasegawa, RRTDB Manager, introduced this agenda item. In accordance with the agreement of the third session, RRTDB started transmitting its subsurface temperature and salinity data to the MEDS (Marine Environmental Data Service) in Canada, which is responsible for the real time quality control for the Global Temperature and Salinity Profile Programme (GTSPP). Since May 1999, the GTSPP quality controlled data have been made available to the users on a test basis.

80 Mr. Hasegawa stressed that the methods of quality control heavily depend on the use of the data, and he introduced the plan of RRTDB to provide climatological information on the sea surface temperatures to assist the quality control by each user. [Action 14: see Annex III]

81 The Committee expressed its satisfaction with the efforts by Mr. Hasegawa on this issue.

5.2 ENVIRONMENTAL PARAMETERS*

82 The Technical Secretary introduced this item. Dr. Lee indicated that KORDI had several environmental data and he was keeping persuading to open the data. Mr. Hasegawa showed examples of chemical and biological products based on data obtained by a JMA observation vessel in the Japan/East Sea, which JMA plans to provide through RRTDB. The Committee expressed its gratitude for the offer. Mr. Nagai mentioned that there were already several historical environmental data. The Committee felt that it would be relatively easy to have environmental data in delayed mode databases than real time mode considering that it sometimes takes time to collect such data. The Committee agreed that the system should include environmental parameter, starting from the possible areas, while recognizing the problems related to these parameters such as quality control. Further discussion is needed to decide on a concrete strategy on this issue. [Action 15: see Annex III]

5.3 DATA PRODUCTS

83 Considering the strong linkage between this item and 5.6 USERS MONITORING, the Technical Secretary suggested discussing these two items in parallel. He first emphasized the importance of adding more data products into the NEAR-GOOS Systems, either from the users' side or from the major suppliers' (e.g. RRTDB, RDMDB) side. Dr. Lee agreed that NEAR-GOOS System should include more data products in order for the users to get more useful information, introducing that EuroGOOS is pursuing more products than raw data considering the user requirements. Mr. Hasegawa suggested that the NEAR-GOOS should encourage other programmes that produce products to input their products to the NEAR-GOOS System, rather than NEAR-GOOS itself taking responsibility in providing products. [Action 16: see Annex III]

84 The Technical Secretary then reminded the Committee of the Discussion Paper (Doc. IOC/WESTPAC-

* The expression "environmental parameter" is used here to stand for "chemical and biological data relevant for marine pollution", for temporary convenience.

NEAR-GOOS-CC-IV/8), through which he had emphasized the importance of interaction with more users, scientists as well as organizations related to ocean services. He asserted the importance of conducting a comprehensive monitoring of the users to survey how the NEAR-GOOS is currently utilized. The Committee acknowledged the importance of such survey, and agreed that it should consider its implementation in future. [Action 17: see Annex III]

5.4 EXPANSION OF NEAR-GOOS DATA AND DATA PRODUCTS

85 Dr. Dong-Young LEE explained this item, placing particular emphasis on the importance of urging the data producers to provide NEAR-GOOS System with more data. He requested that the Committee members and the WESTPAC Secretariat should be more active in such activities, and proposed the following actions:

(i) In order to expand NEAR-GOOS data quantitatively, the Committee should identify the ocean observation projects in the NEAR-GOOS region, and explore the possibility of the participation of these projects in NEAR-GOOS.

(ii) In order to promote the real time data exchange, the technologies needed to make data available in real-time should be transferred from leading agencies to potential data providers when required, such as real-time telemetry, efficient WWW site construction, etc.

(iii) The related agencies in the region should be persuaded to promote or initiate cooperative ocean monitoring programmes that could be carried out efficiently as a bi-lateral or regional cooperation. The meteo-drift buoy programme and the on-board environmental monitoring using ferryboat cruise between two countries should be good example of such cooperative programmes.

86 The Committee agreed with his basic assertions, but was generally reluctant to make too explicit a request to the data producers. [Action18: see Annex III]

5.5 JDIMP ISSUES

87 Mr. Hasegawa briefly explained the activities regarding cooperation with the Joint Data and Information Management Panel (JDIMP). He reported that because there had been no meeting of the Panel since the last session of the Committee, the cooperation with the panel was made by correspondence. He reminded the Committee that JDIMP had set up the Information Centre as a first access point for various earth observing data, and he reported that he had informed the Centre of the NEAR-GOOS data exchange system so that a link would be made from the Centre to NEAR-GOOS databases.

5.6 USERS MONITORING (already described in 5. 3 DATA PRODUCTS)

5.7 PROMOTION OF NEAR-GOOS

88 Prof. Zhowen YU proposed that NEAR-GOOS should publish a brochure prior to the next NEAR-GOOS Meeting, in order to make NEAR-GOOS well known to the ocean community, and to encourage more users to access NEAR-GOOS Databases. The Chairman pointed out that a timetable for drafting, edition, and publication of the brochure should be developed taking into account the availability of the budget for the publication. The Committee requested that the WESTPAC Secretariat should follow up this issue, and lead the production of the brochure. [Action 19: see Annex III]

5.8 OTHER ISSUES

89 In this item, the Committee was requested to discuss the cost for the future sessions of the Co-ordinating Committee. The Technical Secretary explained that up to the current session, the travel costs of participants had been mainly provided by the Japanese Ministry of Education, Science, Sports, and Culture (*Monbusho*) despite the principle provided in the Terms of Reference of the Committee that each participating country should cover the costs. He then invited Mr. Kuroda, the Section Chief at *Monbusho* in charge of IOC to speak on this matter. Mr. Kuroda supplemented the remarks by explaining the principles for financing for NEAR-GOOS projects and UNESCO-Japan Funds-in-Trust.

90 The Committee expressed its deep gratitude to *Monbusho* for supporting the cost for the participation of the Committee members of each country in the present and the past sessions of the Committee.

91 After a substantial discussion among the Committee members it was finally agreed that each member should make his best effort to facilitate the financial assistance at his own expense in accordance with the TOR of the Committee, while *Monbusho* could work out to continue financial support on condition that activities will be more centred on scientific activities. [Action 20: see Annex III]

6. ADOPTION OF THE REPORT

92 The Committee adopted, in principle, the draft summary report prepared by the Secretariat and endorsed by the Rapporteur with necessary modifications, together with the Action Sheet (Annex III). The Technical Secretary was requested to finalize the summary report in close consultation with the members of the Committee, the invited experts and observers.

7. NEXT SESSION

93 The Committee agreed with and appreciated the kind suggestion by the representative of the Republic of Korea to host the next NEAR-GOOS Co-ordinating Committee somewhere in the Republic of Korea tentatively in the second half of 2000. [Action 21: see Annex III]

8. CLOSURE

94 The Chairman closed the session at 1400 hours on Friday 1 October.

ANNEX I

AGENDA

1. OPENING

2. ADMINISTRATIVE ARRANGEMENTS

2.1 ADOPTION OF THE AGENDA
2.2 DESIGNATION OF RAPPORTEUR
2.3 WORKING ARRANGEMENTS

3. REPORT ON THE OPERATION

3.1 REPORT BY THE CHAIRMAN
3.2 REPORT BY THE TECHNICAL SECRETARY
3.3 REPORT ON REGIONAL DATA BASE MANAGEMENT
- **3.3.1 Regional Real Time Data Base**
- **3.3.2 Regional Delayed Mode Data Base**

3.4 REPORT ON NATIONAL ACTIVITIES
- **3.4.1 China**
- **3.4.2 Japan**
- **3.4.3 Republic of Korea**
- **3.4.4 Russian Federation**

4. COOPERATION WITH OTHER PROJECTS

4.1 GOOS
4.2 HOTO
4.3 HAB
4.4 NOWPAP
4.5 ODC
4.6 PICES
4.7 COASTAL GOOS
4.8 SEAGOOS
4.9 ONR

5. PROGRAMME

5.1 DATA QUALITY CONTROL
5.2 ENVIRONMENTAL PARAMETERS
5.3 DATA PRODUCTS
5.4 EXPANSION OF NEAR-GOOS DATA AND DATA PRODUCTS
5.5 JDIMP ISSUES
5.6 USERS MONITORING
5.7 PROMOTION OF NEAR-GOOS
5.8 OTHER ISSUES

6. ADOPTION OF THE REPORT

7. NEXT SESSION

8. CLOSURE

ANNEX II

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ANNEX III

ACTION SHEET ON NEAR-GOOS Co-ordinating Committee-IV
(Tokyo, 28 September - 1 October 1999)

No.	Subject	Ref.	Action proposed	Responsible	Target date	Comments
1	Usage of RDMDB data	29	To request ORI to create a link between the RDMDB homepage and the ORI's Kuroshio Monitoring homepage	Technical Secretary	ASAP	
2	China National Activities	31 32 33	(1) To hold a NEAR-GOOS domestic user workshop (2) To publish a brochure in Chinese (3) To hold a NEAR-GOOS Regional Symposium (4) To convince the Chinese Government to allow more data to be loaded into the database	Members from China	When feasible (2000) Workshop (1) When feasible Continuous	
3	Data Management Training Course	38	(1) To organize the third training course (2) To select at least one participant from each NEAR-GOOS country	JODC JODC GPO	Jan/Feb 2000 November 1999	
4	Korea National Databases	43	(1) To complete the Korea DMDB (2) To form a National Committee and make necessary arrangements to establish the Korea RTDB	KODC Members from Korea	Middle of 2000 ASAP	
5	Russia National Databases	45	(1) To complete the National Databases (2) To improve the telecommunication systems	FERHRI, POI Members from Russia	ASAP Continuous	
6	GOOS	52	To keep NEAR-GOOS informed of the developments in GOOS and other regional GOOS programmes	GPO	Continuous	
7	NEAR-HOTO	54	To keep contact with NEAR-HOTO and keep the Committee up to date	Mr. Hasegawa	Continuous	
8	HAB	57	To maintain the dialogue between NEAR-GOOS and HAB	Technical Secretary	Continuous	

No.	Subject	Ref.	Action proposed	Responsible	Target date	Comments
9	NOWPAP	60	(1) To get information on the NOWPAP focal points from UNEP EAS/RCU and provide it to the members	Technical Secretary	ASAP	
				Members	Continuous	
		61	(2) To start conversation with the NOWPAP focal points in the respective countries and explore the possibility of cooperation and coordination of the national activities between NEAR-GOOS and NOWPAP	Dr. Jeong	Continuous	
			(3) To act as the focal point to NOWPAP		When feasible	
			(4) To get information on the NOWPAP's requirements for data exchange systems			
10	ODC, Joint Workshop on Marine Environment Forecasts	64	(1) To seek the possibility to hold the Workshop in conjunction with the 5th WESTPAC Scientific Symposium or with other relevant conferences	WESTPAC Secretariat	When feasible	
		65	(2) To contact PICES and seek for the possibility for PICES to cosponsor the Workshop	Technical Secretary	When feasible	
		66	(3) To act as the focal point to WESTPAC-ODC3 and be responsible for the preparation of the Workshop	Prof. Yu	Continuous	
					ASAP	
			(4) To inform ODC that NEAR-GOOS's intention with regard to the Workshop and request ODC to assign a focal point for preparation		When feasible	
			(5) To elaborate the detailed plan for the Workshop			
11	PICES	67	To make a presentation on NEAR-GOOS at the PICES meeting and inform the outcome to the Committee	Prof. Yu	October 1999	Ms. Yan will attend the mtg.
12	Coastal GOOS	72	To recommend potential users of Coastal GOOS as participants in the Coastal GOOS stakeholder's meeting to Dr. Wang	Members	November 1999	

No.	Subject	Ref.	Action proposed	Responsible	Target date	Comments
13	Cooperation with other programmes	78	To contact relevant programmes and get their requirements from NEAR-GOOS	Technical Secretary	Next session	
14	Data Quality Control	80	To provide climatological information on the sea surface temperature to assist the quality control by each user	RRMDB	ASAP	
15	Environmental parameters	82	(1) To convince KORDI to open its environmental data (2) To provide chemical and biological data from a JMA observation vessel through RRTDB (3) To include environmental parameter starting from possible areas (4) To further discuss the strategy for inclusion of environmental parameters	Dr. Lee RRTDB Data Base Managers Technical Secretary	Continuous ASAP When feasible Next Session	
16	Data products	83	To encourage other programmes that produce products to input their products to the NEAR-GOOS System	Technical Secretary	Continuous	
17	User monitoring	84	To consider conducting a comprehensive monitoring of the users	Technical Secretary	ASAP	
18	Expansion of NEAR-GOOS data/products	86	(1) To identify the ocean observation projects in the region (2) To explore the possibility of the participation of the other projects in NEAR-GOOS	Technical Secretary	ASAP Continuous	
19	Brochure	88	(1) To publish a new brochure (2) To develop a timetable for drafting, edition, and publication of the brochure (3) To find budget for publication	WESTPAC Secretariat	Next Session ASAP ASAP	
20	Participation costs	91	To seek the financial assistance from the respective countries to attend the future sessions	Members	Next Session	
21	Next session	93	To explore the possibility to have the next session to be organized in Korea in the second half of 2000	Members from Korea	ASAP	

ANNEX IV

REPORT ON THE CHINA NATIONAL DELAYED MODE DATA BASE

Prepared by Wang Hong
The Fourth Session of NEAR-GOOS Coordinating Committee
September 28 – October 2, 1999 Tokyo

After the third session of the NEAR-GOOS Co-ordinating Committee in Beijing, the working group on China NEAR-GOOS Delayed Mode Data Base (DMDB) has made great efforts on the construction of the DMDB according to the development plan and the operational standard formulated during the third session. For the convenience to the users, the function of the web site has been approved, the data type and the amount has been increased in order to serve the NEAR-GOOS much better.

1. On-line registration has been realized

The purpose of the NEAR-GOOS is to provide marine data and information service, free of charge, to the countries of the Northeast Asia region as well as GOOS community. Before the third session of the Co-ordinating Committee, the registration form should be submitted and get authorized and password before access to the database. In order to embody the spirit of NEAR-GOOS and meeting the requirement of the operational manual version 2.0, we have changed such registration into an on-line registration. The on-line registration can be accomplished by just spending a minute to answer a few questions, and then the database can be accessed, browsed and the data can be obtained. The on-line registration has made the data exchange more convenient and much faster.

2. Data type and data amount has been increased

After the third session of the NEAR-GOOS Co-ordinationg Committee, the following data type and data were added to the China NEAR-GOOS DMDB:

--Buoy data (one buoy from China and eight from the Republic of Korea)
--Data from Chinese research vessels
--Chinese coastal station data
--GTS data: Radio sounding data
Sea surface meteorological data
Ship meteorological data

Above mentioned data are starting from May 1999.

3. Update and maintenance of the homepage

--The new contents has been added to the present homepage, such as data inventory, and format, operational manual and associate web sites, easy for users to look over. On-line registration has been realized, enabling the user to access the database and obtain data faster. FTP sites have been increased, enabling the user to upload data to the China NEAR-GOOS DMDB easily at any time.

--The personnel of the Working Group of China NEAR-GOOS DMDB access to the NEAR-GOOS data base of other countries regularly and release the news on the newsboard of China NEAR-GOOS web site, facilitating the user to understand the recent development of the NEAR-GOOS.

--The Operational Manual for NEAR-GOOS requires that the data in the Real Time Data Base (RTDB) can be kept for 30 days before transferred to DMDB. Through efforts by the Working Group of China NEAR-GOOS Data Base, the data in the RTDB can be transferred to DMDB within a week. The data updated in time and the data of last month's can be obtained from DMDB at first 10 days of every month.

--The management manual of China NEAR-GOOS DMDB has been revised.

4. The utilization of the DMDB

Since the opening of the China NEAR-GOOS DMDB, more than 5000 person/time have accessed the data base. Especially after updating, more than 20 person/time have accessed the database within 3 days. The data obtained by the users are mainly for research purpose.

The feedback information from the users indicated that the data format of the China NEAR-GOOS DMDB is simple and clear and easy to use. There is no need for further processing.

5. Tentative plan for the future

--In order to facilitate the use of the database, the Working Group of China NEAR-GOOS DMDB will further study of the NEAR-GOOS database of other countries, and to provide the user with simplest and clearer format of the data.

--Keep close contacts with marine research institutions and data users of various countries, and develop a new NEAR-GOOS data products.

--In order to expand the scope of influence and utilization of NEAR-GOOS database in China, the Working Group of China NEAR-GOOS DMDB will set up a Chinese web site of DMDB.

ANNEX V

LIST OF ACRONYMS

BATHY	Bathythermograph Report
CREAMS	Circulation Research of the East Asian Marginal Seas
DMDB	Delayed Mode Data Base
EuroGOOS	European GOOS
FERHRI	Far Eastern Regional Hydrometeorological Research Institute (Russian Federation)
GOOS	Global Ocean Observing System
GTSPP	Global Temperature and Salinity Profile Programme
HAB	Harmful Algal Blooms
HOTO	Health of the Oceans
IOC	Intergovernmental Oceanographic Commission (UNESCO)
IODE	International Oceanographic Data and Information Exchange Programme
JAFIC	Japan Fisheries Information Service Centre
JDIMP	Joint Data and Information management Panel
JMA	Japan Meteorological Agency
JODC	Japan Oceanographic Data Centre
KMA	Korea Meteorological Administration
KODC	Korea Oceanographic Data Centre
KORDI	Korea Ocean Research and Development Institute
LMR	Living Marine Resources
MEDS	Marine Environmental Data Service (Canada)
NEAR-HOTO	North-East Asian Regional GOOS Pilot Project on the Health of the Oceans
NEAR-GOOS	North-East Asian Regional GOOS
NFRDI	National Fisheries Research and Development Institute
NICOP	Navy International Cooperation Program
NIES	National Institute for Environmental Studies (Japan)
NOAA	National Oceanic and Atmospheric Administration (USA)
NOWPAP	North-West Pacific Action Plan
ONR	Office of Naval Research (USA)
ONRIFO	ONR International Field Office
ORI	Ocean Research Institute (of Tokyo University)
PALACE	Profiling ALACE (Autonomous LAgrangian Circulation Explorer)
PICES	North Pacific Marine Science Organization
POI	Pacific Oceanological Institute (Russian Federation)
RDMDB	Regional Delayed Mode Data Base
RRTDB	Regional Real Time Data Base
RTDB	Real Time Data Base
SEAGOOS	South-East Asian GOOS
SST	Sea Surface Temperature
UNEP	United Nations Environment Programme
WESTPAC	IOC Sub-Commission for the Western Pacific