

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)**

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1. OPENING

1. Mr. Naoyuki Hasegawa, the Chairman of the IOC/WESTPAC Co-ordinating Committee for the North-East Asian Regional - Global Ocean Observing System (NEAR-GOOS) called the meeting to order at 09:00 hours on 3 August 1998. He welcomed all the participants attending the meeting, in particular those who participated for the first time in the NEAR-GOOS meeting. Mr. Hasegawa thanked the State Oceanic Administration for inviting all the participants to come to China and the generous offer to host the meeting. In particular, he thanked Prof. Zhouwen Yu and Dr. Hong Wang, members of the Committee, for their efforts in organizing the meeting in China, and for the excellent arrangements provided to the meeting.
2. He then introduced Prof. Keisuke Taira, the Chairman of the IOC Sub-Commission for WESTPAC to give an opening address. Following a brief review of the development and operation of the NEAR-GOOS system, Prof. Taira indicated that there were several fields in which NEAR-GOOS community should continue to work in order to achieve the goals of the NEAR-GOOS. Initial steps in the NEAR-GOOS system are aimed at producing daily mapping of sea conditions. He then provided information on the activities in the WESTPAC region, in particular within Japan, in support of the development of NEAR-GOOS.
3. On behalf of Dr. Patricio Bernal, Executive Secretary IOC, Mr. Yihang Jiang, Technical Secretary for NEAR-GOOS, welcomed all the participants to the meeting. He thanked the Government of China for hosting the NEAR-GOOS Co-ordinating Committee meeting, which was for the first time organized outside the IOC Regional Secretariat for WESTPAC, Bangkok, Thailand. The Technical Secretary then drew the attention of the meeting to the achievements of NEAR-GOOS during the last two years of operation, including (i) the intergovernmental agreement on free exchange of oceanographic data within the region; (ii) the increase in the number of users of the system; (iii) the increase in the number of the contributors of oceanographic data to the system; and (iv) the recognition of the NEAR-GOOS system by other relevant programmes, which provided strong potential for co-operation and co-ordination at the regional level. He also mentioned that there were still several aspects of the system that might be considered, e.g. in addressing the environmental concerns of the participating countries through, for instance, co-operation with a regional pilot project of the HOTO module of GOOS.
4. The Director-General of the Department of International Co-operation, State Oceanic Administration, Mr. Jingguang Li, also welcomed all the participants to Beijing, and expressed his warm congratulations on the opening of the Third Session of the NEAR-GOOS Co-ordinating Committee. On behalf of his government, he expressed his satisfaction with the development of GOOS. In particular, NEAR-GOOS, as a component of GOOS in this region, has successfully achieved the goals of the system. He expressed his appreciation to the IOC Secretariat and the IOC Regional Secretariat for WESTPAC for their hard work in developing NEAR-GOOS. Mr. Li reiterated that the Chinese government will continue playing an active role in developing GOOS and NEAR-GOOS as a contribution to the sustainable development of marine and coastal areas.

2. ADMINISTRATIVE ARRANGEMENTS

2.1 ADOPTION OF THE AGENDA

5. The Technical Secretary introduced the Provisional Agenda by referring to document IOC/WESTPAC/neargoos/cc-3/Doc 1. The meeting adopted the agenda with minor modifications. The agenda of the meeting is attached as Annex I.

2.2 DESIGNATION OF RAPPORTEUR

6. The Delegation of Japan nominated Dr. Dong-Young Lee from the Republic of Korea to be the Rapporteur of the meeting, and the Delegation of China seconded the proposal. Dr. Lee was designated as Rapporteur.

2.3 WORKING ARRANGEMENTS

7. The Technical Secretary introduced the working documents by referring to document IOC/WESTPAC/neargoos/cc-3/Doc.2. It was noted that there were some more documents submitted by the members of the Committee, which would be added to the working documents for the meeting.
8. The meeting agreed to work in plenary as far as possible, with draft working groups formed when deemed necessary.

9. The working language of the meeting was agreed to be English. The list of Participants is attached as Annex II.

3. REPORT ON THE OPERATION OF THE SYSTEM

3.1 REPORT OF THE CHAIRMAN

10. The Chairman reported to the meeting that the Real Time Data Base (RTDB) and the Delayed Mode Data Base (DMDB) have continued to be operational in accordance with the Operational Manual. The increase in users of the system and increase in number of oceanographic data to the system were exemplified by Fig. 1 and Fig. 2. This increase is due to efforts of all members of the Committee to make the NEAR-GOOS data exchange system known to a variety of ocean related communities, through for instance the publication of the operation manual and the brochure, the setup of the homepage, and the dissemination of NEAR-GOOS at various occasions.

11. He informed the meeting that the users are using the data obtained from the system as supplementary data in environmental forecasting, and using systematic data as boundary conditions for their modeling work.

Figure 1

Number of Registered NEAR-GOOS Users

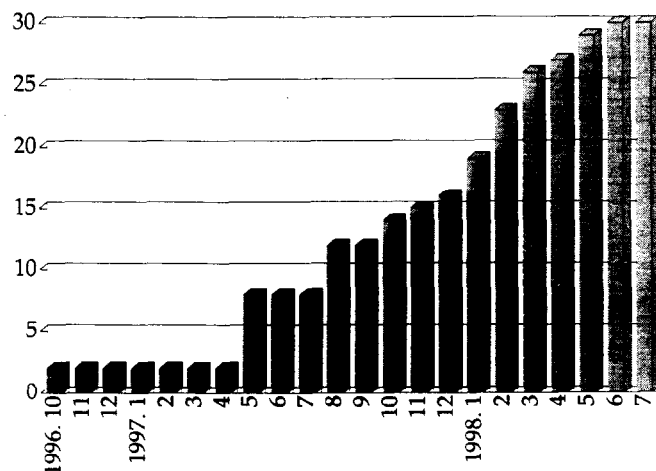
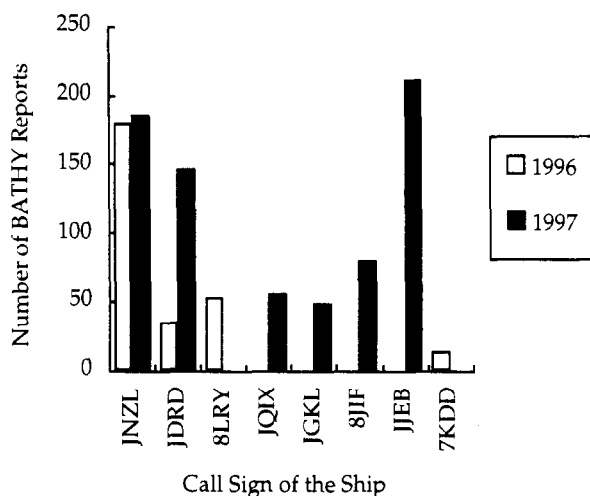


Figure 2

BATHY from the ships of the Fisheries Agency of Japan



- 12.

He mentioned that the first IOC/WESTPAC Training Course on NEAR-GOOS Data Management was organized by JODC under the auspices of the IOC, with assistance from JMA and the Ocean Research Institute, University of Tokyo, and took place from 13 to 24 October 1997 in Tokyo.

- 13.

During the Fourth IOC/WESTPAC Scientific Symposium (Okinawa, Japan, February 1998), the Chairman had presented a keynote speech entitled 'The NEAR-GOOS Data Exchange System for Better Ocean Services'. A number of other presentations on GOOS were made during the Symposium, especially representing research on GOOS-related issues. This had helped to increase attention on and interest in NEAR-GOOS in particular and GOOS in general. On the same occasion, two informal meetings were organized with participation of some members of the NEAR-GOOS Coordinating Committee, and with actual and potential users of the system.

3.2 REPORT OF THE TECHNICAL SECRETARY

14. The Technical Secretary presented his report to the meeting with emphasis on (i) the achievements of the NEAR-GOOS after two years of operation, and (ii) the areas in which NEAR-GOOS has to put more efforts. He summarized as follows:

- (i) An intergovernmental agreement on an open data exchange policy has been established by NEAR-GOOS in spite of the different political and economic conditions of the participating countries. Although there are still some problems on certain parameters, and in certain geographic locations, the oceanographic data are indeed flowing into the system. This is the first working example of the GOOS policy

on open data exchange.

(ii) Operation of the system has been started and exchange of oceanographic data is being carried out. All the participating countries are contributing data to the system in one way or another. Although there are still a lot of technical problems which need to be solved before systematic data exchange is possible, participating countries are seriously taking necessary actions to contribute to the operation of the system. For example, Russia is contributing its real time data by writing ftp files, and sending its data to the NEAR-GOOS Real Time Data Base.

(iii) After more than one year of operation, the system has been recognized by the oceanographic societies and other users in the region, as shown by:

- (a) an increase in the number of users to 30 organizations (30 June 1998);
- (b) an increase in the amount of oceanographic data in the system;
- (c) other programmes seeking co-operation and co-ordination with the NEAR-GOOS system.

(iv) The operation of the system has improved both co-operation and co-ordination at regional and national levels. One good example is that the Japanese working group on NEAR-GOOS is composed of different relevant governmental agencies. As a result, the Japan Fishery Agency agreed to participate in the system, and has since contributed oceanographic data from much of the NEAR-GOOS region, which doubled the quantity of their data in the system.

15. Examples of co-operation and co-ordination within NOWPAP/1 and NOWPAP/3 were subsequently provided to the meeting.

3.3 REPORT ON DATA BASE MANAGEMENT

3.3.1 Real Time Data Base

16. Mr. Hasegawa introduced the operation of the Real Time Data Base (RTDB). He indicated that the RTDB has been continuously operated without major trouble during the last intersessional period, except for a few occasions of planned service suspension for the maintenance of the system.

17. He informed the meeting about the user registration and data contributors to the system. With regard to the access to the data base, he informed the meeting that access to the RTDB homepage has increased from around 700 hits per month in 1997 to around 1700 hits per month in March 1998. The increase in the number of visitors to the homepage suggests that the activities for the promotion of NEAR-GOOS are working well. The ftp access numbers also increased in April 1998, largely due to the beginning of periodic retrieval by several organizations.

3.3.2 Delayed Mode Data Base

18. Mr. Toshio Nagai informed the meeting about the operation of the Delayed Mode Data Base (DMDB), indicating that the data base is in operation on a regular basis. While the English version of the homepage provides service to an interested international NEAR-GOOS community, a Japanese version has also been developed.

19. In addition to handling the data transmitted from the RTDB, the DMDB also started providing some products, e.g. the distribution of surface currents and temperature charts of the sea surface and at 100 m and 200 m depth, which are published twice a month covering the Kuroshio and the adjacent seas off Japan.

3.4 REPORT ON NATIONAL ACTIVITIES

3.4.1 Russian Federation

20. The general policy of the Russian Government on the GOOS programme was decided at the meeting of the National Oceanographic Committee on 18 June 1998 in Moscow. It was pointed out that a participation in the regional GOOS programmes constitutes a major interest, and NEAR-GOOS has the first priority among them. A National Working Group was established to prepare proposals for the government and to co-ordinate the participation of Russian organizations in the GOOS and NEAR-GOOS programmes. The development of the NEAR-GOOS programme in Russia should be based on the experiences of previous data exchange related programmes such as IODE, IGOSS, etc.

21. Marine meteorological data are being contributed to the NEAR-GOOS Real Time Data Base by the Far Eastern Regional Hydrometeorological Research Institute (FERHRI). The Pacific Oceanological Institute (POI) has prepared previously unavailable data from 13,628 oceanographic stations, for international data exchange under the IODE/GODAR project. These data may now be contributed to the NEAR-GOOS Delayed Mode Data Base.
22. For further development of the NEAR-GOOS programme in Russia, it is required (a) to determine the regulations for international data exchange for the NEAR-GOOS programme at the national level; (b) to provide necessary funds for the NEAR-GOOS activities; and (c) to improve the telecommunication system in the country. The last one is extremely important in order to involve more users and contributors to the NEAR-GOOS data base.

3.4.2 Republic of Korea

23. Many agencies in Korea, such as the Korea Meteorological Administration (KMA), the Korea Oceanographic Research Institute (KORI), the National Fisheries Research and Development Institute (NFRDI) and the Korea Ocean Research and Development Institute (KORDI) have established data service systems through the Internet, supported by a high speed telecommunication networking programme of the Ministry of Information and Communication. At a series of meetings among the related agencies in Korea, it was decided that the Korea Meteorological Administration (KMA) and the Ministry of Marine Affairs and Fisheries (MOMAF) should jointly operate National Real Time Data Base. The Delayed Mode Data Base will be operated by NFRDI.
24. It was agreed that the National NEAR-GOOS Working Committee will be formulated formally after the Third NEAR-GOOS-CC Meeting in Beijing and that the National NEAR-GOOS Real Time and Delayed Mode Data Bases will be formally implemented by MOMAF.

3.4.3 Japan

25. The Real Time Data Base (RTDB) and the Delayed Mode Data Base (DMDB) have been operated successfully.
26. The Japan Meteorological Agency produced a Japanese version of the NEAR-GOOS brochure, and distributed it to various ocean related organizations and individuals. The brochure helped to promote NEAR-GOOS, and resulted in the substantial increase in the number of the Japanese users of the NEAR-GOOS data exchange system.
27. The first IOC/WESTPAC training course on NEAR-GOOS was organized by the Japan Oceanographic Data Center (JODC) under the auspices of the IOC from 13-24 October 1997 at the JODC, Hydrographic Department, Maritime Safety Agency, Tokyo, Japan. Seven participants from Korea (5), Russia and Viet Nam were selected by JODC and the IOC as participants in this course.
28. A five-year research programme is currently being implemented by Japanese universities in the fields of monitoring technologies for ocean currents, temperature, salinity and nutrients, numerical modeling, monitoring of chemical substances for environmental changes, monitoring of primary production, and remote sensing for ocean monitoring. This research programme is expected to contribute to the future development of the NEAR-GOOS activities.

3.4.4 China

29. The China National Real Time Data Base (CNRTDB) is in operation, although it still needs to be improved. The data base is opened to organizations and individuals, and users can access the data base through the Internet and get the real time oceanographic data which are not available from other sources.
30. So far, the following four kinds of real time data are included into the data base.
- (i) Real time data collected from 14 coastal observation stations.
The 14 stations are Xiaochangshan, Laohutan, Zhifudao, Xiaomaidao, Lianyungang, Lusi, Zhenhai, Shengshan, Dachen, Nanji, Beishuang, Xiamen, Dongshan, and Zhelang. The parameters included in the data base are waves, sea surface temperature, and meteorological parameters.
 - (ii) Buoy data.

Real time data of waves, SST, and meteorological parameters collected from one offshore buoy are loaded into the data base.

(iii) Data of ship reports.

The data are extracted from GTS data. Because most oceanographers are not familiar with the GTS data, to pick out the ship data from GTS data will facilitate their uses. The area covered is: 30°N-42°N, 117°E-127°E.

(iv) GTS data.

31. The CNRTDB plans to improve the data base by expanding the data. First of all, the CNRTDB is going to include the forecast products in the data base. The forecast products are:

- Sea Surface Temperature;
- Storm Surge;
- Typhoon;
- Waves (Available by Oct. 1);
- Sea Ice (Available by Dec. 1).

In addition, remote sensing data, including cloud image and typhoon tracking data, will be loaded into the data base.

32. The CNRTDB has the government's permission to load the above-mentioned data into the China NEAR-GOOS Real Time Data Base. It is the first time that the government permitted free access to real time oceanographic data collected in the coastal stations.

33. The website of CNRTDB is at [<http://www.nmefc.gov.cn/NEAR-GOOS/near-goos.html>].

34. A special working group on the China Delayed Mode Data Base (CDMDB) for NEAR-GOOS has been established in the National Marine Data and Information Services (NMDIS) and is in charge of the maintenance of the data base. Up to now, the CDMDB has been operated satisfactorily. The CDMDB working group has prepared a manual on the Management of China Delayed Mode Data Base for NEAR-GOOS.

35. The CDMDB now holds continuous observation data series on temperature, salinity, wave and wind from 4 coastal stations. The observation data from 10 other coastal stations will be provided to the data base very soon. About 14 years of satellite remote sensing data on SST have been provided, covering the period from January 1982 to June 1996.

36. The address of CDMDB is [<http://near-goos.coi.gov.cn>].

4 PROGRAMME

4.1 REVIEW OF MODIFICATION OF THE OPERATIONAL MANUAL

37. In order to further improve the operation of the NEAR-GOOS system, the Co-ordinating Committee at its second session invited Dr. Dong-Young Lee to prepare a draft revised version of the NEAR-GOOS Operational Manual for discussion and approval at the third session.

38. Dr. Lee kindly accepted the task, and distributed the draft of the revised version at the meeting. He explained that the current operational manual needs modification so as to increase the number of users of the system, and to increase the contributions of oceanographic data.

39. The major proposed revisions:

- (i) establishment of two (real time and delayed mode) data bases in each participating country;
- (ii) flexibility in the operation and functions of the National (Associate) Data bases;
- (iii) flexibility in the methods for data producers to deliver data to the National (Associate) Data bases.

40. It was proposed to designate one or more NEAR-GOOS data bases to implement the following functions:

- (i) to ensure that at least all the *in situ* observations from various data bases are available in an agreed and unified format for the convenience of the data users;
- (ii) to receive data through ftp or e-mail from institutes without data servers, and make them available to the NEAR-GOOS community;
- (iii) to exchange the data and information with other programmes.

41. Other proposed changes in the registration procedure of the system include:

- (i) authorization from the NEAR-GOOS co-ordinator is no longer needed to access the NEAR-GOOS data;
- (ii) the data provider, including Real Time, Delayed Mode, and National (Associate) Data Bases, can adopt a user password system for the protection of the data servers;
- (iii) for the monitoring of the data exchange system, data providers should report the status of the data provision at least annually, to the National (Associate) Data Bases of the country, a NEAR-GOOS Co-ordinating Committee member, or one or more designated data bases. The report should include the directory level metadata, access frequency/volume and, if possible, the names of users and predominant type of use of the data/products.

42. The draft of the revised version of the operational manual was discussed in detail. The main points of the discussion are summarized as following:

- (i) It was agreed that the reasons for modifying the current operation manual should be included in the Introduction section to show the willingness of the Committee to move ahead with the open data policy and to attract more users and data contributors to the system.
- (ii) It was accepted that in addition to the oceanographic data exchange currently going on in the system, more user-friendly information and data products, including forecasting should be provided by the system in tabular and graphic formats.
- (iii) In order to encourage participation at the national level, the meeting agreed to change the name of 'Associate Data Base' to 'National Real Time Data Base' and 'National Delayed Mode Data Base', with clearly defined functions and responsibilities in the operational manual.
- (iv) With regard to the registration procedures of the system, the meeting believed that at the initial stage of the operation, a full procedure on registration was necessary to protect the data bases and to monitor the assessment of the system. After about two years of experience on operating the system, the Committee concluded that it was no longer necessary to continue the procedure of issuing authorization from the NEAR-GOOS Co-ordinator. Therefore, it was agreed by the Committee that this procedure should be abolished. However, the national data bases were encouraged to make an attempt to collect user information by inserting a separate page in the data base homepage to monitor the usage of the system.
- (v) In order to obtain more useful information for the system and to cover a wider range of marine environmental data, the leading agencies in and outside of the NEAR-GOOS region should be encouraged to provide relevant remote sensing information and necessary services to the NEAR-GOOS system.
- (vi) It was recognized by the Committee that a new technology is currently feasible which would allow NEAR-GOOS users access to a virtual data centre through which data can be accessed which are physically located at the different national data centres. The adoption of such new technology will be considered at the next stage of revision of the manual after an intensive test and examination of this technology is carried out in the near future.
- (vii) It was decided that in order to show the achievements of the NEAR-GOOS system, it will be very useful to publish a publication on the NEAR-GOOS status, achievements and activity. The Committee requested the IOC Regional Secretariat for WESTPAC to collect useful material for the

publication, with assistance from the GOOS Project Office.

43. An extensive discussion focused on the revised version of the operational manual for attracting more users and data contributors. The final version was agreed upon by the Committee, and is attached as Annex III.

44. The Committee expressed its appreciation to Dr. Dong-Young Lee for his great effort in preparing the draft of revised version of the operational manual, which enabled discussion during the meeting to be effective as well as fruitful.

4.2 DEVELOPMENT AND PROVISION OF DATA PRODUCTS

45. The Chairman introduced this agenda item by referring to the comments and suggestions from the previous meeting. In order to attract more users and more support from the governments of the participating countries, the system should provide data products to the decision makers and public, rather than providing only primary data. However it is not clear what NEAR-GOOS should do as a system. There were two different opinions on this matter during the discussion. Some members thought that the NEAR-GOOS system should focus on the relevant data exchange and management. Data products should be developed by various users depending on their mandates and requirements. However, in the meantime, it was also recognized that in order to provide information to a wider variety of users, the data products such as modeling outputs, forecasting and other forms of data products are more easily understood by a non-oceanographic community.

46. The Committee agreed that the various national agencies should be encouraged to input their products to the NEAR-GOOS system whenever possible.

4.3 DATA PRESENTATION AND QUALITY CONTROL

47. The Committee was informed by Mr. Hasegawa that there were several formats used in the NEAR-GOOS system during its operation. It is preferred that a common format, such as suggested by JMA, be identified for the system, allowing easy access and use of data obtained from various sources.

48. Considering, however, the existing formats in the region which are used by various data producers in the participating countries, and the need to encourage more contribution of oceanographic data to the system, it was agreed that given the present situation different formats are acceptable. A study on a regional format for the NEAR-GOOS system should be carried out during the intersessional period. The managers of the national data bases are requested to co-ordinate at a national level the development of a common format similar to the suggested regional format.

49. It was recognized that data quality control is an important aspect to be considered within the NEAR-GOOS system in order to ensure the effective use of the oceanographic data provided by the system. Mr. Hasegawa informed the meeting about his discussion and negotiation with the Global Temperature-Salinity Profile Programme (GTSP) on possible quality control using existing GTSP procedures on temperature and salinity data. It was suggested that relevant NEAR-GOOS data would have to be transmitted to the GTSP for quality control and then sent back to the NEAR-GOOS data base.

50. Taking into account the necessity and desire to proceed with data quality control in the region, and considering the current situation in the region, it was agreed that co-operation with the GTSP, as suggested by Mr. Hasegawa, should be carried out as a trial for the moment. At a later stage a data quality control procedure might be incorporated into the NEAR-GOOS system. It is expected that the result of the trial phase will be reported to the Committee at the next meeting.

51. For the other parameters, the Committee agreed that quality control procedures should be further studied particularly in case more parameters will be added to the system.

4.4 POTENTIAL INCLUSION OF OTHER ENVIRONMENTAL PARAMETERS

52. As decided by the Committee, the marine environmental parameters included in the system were so far focused on some physical parameters, in order to ensure the successful initiation of the operation. With the operation of the system well underway, and given the requirements of the user community, it is advisable to extend the parameters included in the system to a wider range, in particular to chemical and biological ones.

53. Mr. Jiang informed the meeting about the discussion with Dr. Colin Summerhayes, the Director of the GOOS Project Office on the potential co-operation with a proposed NEAR-HOTO pilot project. He commented on the necessity to work together with other aspects of GOOS programmes.
54. Prof. Taira also informed the meeting on the requirement of expertise in *in situ* observations of biological and chemical data in order to calibrate with SeaWiFS remote sensing satellite data.
55. The Committee agreed that chemical and biological data should be included in the system. It was further decided that if those data could be measured and observed in a real time scheme, it should be reported to the real time data bases, otherwise to the delayed mode data bases, in the existing formats.
56. The Committee agreed to invite experts from NEAR-HOTO and other relevant programmes such as NOWPAP to attend the next meeting to further discuss a more effective format for the chemical and biological data exchange.

4.5 CONSIDERATION OF JDIMP ISSUES

57. Mr. Hasegawa informed the Committee about the activities of the GCOS/GOOS/GTOS Joint Data and Information Management Panel (JDIMP). JDIMP is a joint panel co-sponsored by the Global Climate Observation System (GCOS), GOOS and the Global Terrestrial Observation System (GTOS). The Panel was originally set up for GCOS, and at the third session (Tokyo, July 1997), it became a joint panel to ensure coordination among the three observing systems. The panel discusses how we should deliver the data and products made in the framework of GCOS/GOOS/GTOS to those who need such information. The main two topics in the discussion at the most recent meeting, in Hawaii in April 1998, which he attended on behalf of NEAR-GOOS, were the metadata (data directory) project and the Information Centre.
58. He further explained the implication of the JDIMP activities to NEAR-GOOS, and suggested that:
- (i) all the NEAR-GOOS data providers be invited to prepare directory level metadata for the data and products, and make them available;
 - (ii) the NEAR-GOOS data providers be encouraged to prepare more detailed metadata and make them available together with the data and products;
 - (iii) Mr. Hasegawa, as a member of the JDIMP, be requested to provide necessary information to the Information Centre of the JDIMP to be included in their data search homepage, and maintain contact with the Information Centre and metadata pilot projects.
59. The Committee expressed its appreciation for the great efforts made by Mr. Hasegawa on this important matter, and agreed on the proposal suggested.

5 CO-OPERATION

5.1 NEW DEVELOPMENTS IN GOOS

60. Ms. Rimi Nakano, GOOS Project Office, informed the meeting about the new developments in GOOS, including the Integrated Global Observing Strategy (IGOS), the Joint Commission on Oceanography and Marine Meteorology (J-COMM), the Workshop on the Implementation of Global Ocean Observations for GOOS/GCOS and the IOC-WMO-UNEP-ICSU Coastal Panel of the Global Ocean Observing System.
61. There were several questions from the Committee, and Ms. Nakano and Prof. Taira provided additional explanations to the meeting.
62. The Committee welcomed the information provided and was pleased to see the co-ordination of efforts growing on a global scale.

5.2 NOWPAP

63. Mr. Jiang informed the meeting about the co-operation with UNEP on the development of the North-West Pacific Action Plan (NOWPAP), in particular the NOWPAP/1 and NOWPAP/3 projects, referring to the proposals

developed for these two projects. It was noted that the NOWPAP projects have objectives similar to NEAR-GOOS and cover a similar geographic region. Even though the NOWPAP covers a much wider range of marine, coastal and associate fresh water environments, co-operation and co-ordination with these projects may prove to be beneficial for the development of an environmental monitoring system in the region.

64. The Committee expressed its appreciation to the IOC Regional Secretariat for WESTPAC in promoting the co-operation of NEAR-GOOS with other programmes. It was further stated that co-operation with the NOWPAP will not be limited to providing oceanographic data, but also to provide the system itself as a vehicle to carry the environmental data generated by the NOWPAP projects.

65. It was agreed that the NOWPAP should be invited to attend the next session of the NEAR-GOOS Co-ordinating Committee in order to further discuss co-operation and co-ordination between the two systems.

5.3 NEAR-HOTO

66. Further information on HOTO in general and NEAR-HOTO in particular was provided by Mr. Jiang. As mentioned in the Agenda item 4.4, the Committee welcomed the Strategic Plan of HOTO and expressed its willingness to co-operate closely with the NEAR-HOTO development. It was further suggested that during the next intersessional period, a discussion on a joint effort in developing a regional environmental monitoring system should be carried out by correspondence. Experts from the HOTO Panel should be invited to the next meeting of the Committee.

67. The IOC Regional Secretariat for WESTPAC was requested to distribute information to all members on the outcomes of the discussion.

5.4 SEA-GOOS

68. Information on the development of the South-East Asian - Global Ocean Observing System (SEA-GOOS) was provided by Mr. Jiang, who elaborated on a consultation and discussion meeting on the development of SEA-GOOS, which took place in Okinawa, Japan during the Fourth IOC/WESTPAC Scientific Symposium. Information on the existing observation systems and proposed South-East Asian Centre for Atmospheric and Marine Prediction (SEACAMP) project was also provided.

69. The Committee confirmed that NEAR-GOOS is willing to assist in the development of SEA-GOOS by all possible means, including the provision of opportunities for necessary training, as in the last NEAR-GOOS training course, and to invite experts from South East Asian countries to attend the NEAR-GOOS Co-ordinating Committee meetings.

70. It was further suggested that the Chairman of WESTPAC should contact the national focal points of the countries in South East Asia to identify the requirements of the region in developing an operational system. An independent development and implementation of SEA-GOOS with technical support from NEAR-GOOS, could yield a 'WESTPAC-GOOS' as a platform that properly interfaces between these individual programmes in the future.

5.5 CREAMS

71. Information on Circulation Research of the East-Asian Marginal Seas (CREAMS-II) was provided to the Committee by Dr. Lobanov. CREAMS has been very active as an international programme during 1993-1997 to understand the circulation and water mass structure in the NEAR-GOOS Region. Its continuation for 1998-2002 as CREAMS-II has been recommended within the framework of the North Pacific Marine Science Organization (PICES). CREAMS-II has a large programme of field observations to be implemented by Japan, Korea, Russia and USA. As these data are very useful for the NEAR-GOOS project, it is expected that a more detailed schedule of the CREAMS-II observational programmes as well as its data status and access will be completed by the next PICES Annual Meeting in October 1998. It was agreed that relevant information about the decision made by the next session of PICES will be communicated to the Committee.

6 ADOPTION OF THE REPORT

72. The Rapporteur informed the Committee that the draft summary report prepared by the secretariat reflected the discussion of the meeting.

73. The Committee adopted the summary report with some modifications, together with the Operational Manual (version 2.0).

74. It was suggested that members from Japan should explore the possibility to have the next meeting of the Committee to be organized in Japan in 1999.

7 ELECTION OF CHAIRMAN

75. In accordance with the rule and regulation of the IOC, and the Terms of Reference of the NEAR-GOOS Co-ordinating Committee, the Delegation of the Russian Federation nominated Prof. Zhouwen Yu of China to be the next Chairman of the Committee. The nomination was seconded by the Delegation of Korea and unanimously supported. Prof. Yu was therefore elected by acclamation.

76. Prof. Yu kindly accepted the position and expressed, on behalf of all members, appreciation to Mr. Hasegawa for his excellent work in chairing the committee for the last two years.

8 CLOSURE

77. On behalf of all participants, Prof. Taira, the Chairman of WESTPAC thanked the Government of China for hosting the Session and the excellent arrangements. He also thanked the IOC Regional Secretariat for WESTPAC and the local organizers for their hard work.

78. The Chairman closed the meeting at 12:00 on 6 August 1998.

ANNEX I

AGENDA

- 1. OPENING**
- 2. ADMINISTRATION ARRANGEMENTS**
 - 2.1 ADOPTION OF THE AGENDA
 - 2.2 DESIGNATION OF RAPPORTEUR
 - 2.3 WORKING ARRANGEMENT
- 3. REPORT ON THE OPERATION OF THE SYSTEM**
 - 3.1 REPORT OF THE CHAIRMAN, NEAR-GOOS
 - 3.2 REPORT OF THE TECHNICAL SECRETARY FOR NEAR-GOOS
 - 3.3 REPORTS OF DATA BASE MANAGERS
 - 3.3.1 Real Time Data Base
 - 3.3.2 Delayed Mode Data Base
 - 3.4 REPORT ON NATIONAL ACTIVITIES
- 4. PROGRAMME**
 - 4.1 REVIEW OF MODIFICATION OF THE OPERATIONAL MANUAL
 - 4.2 DEVELOPMENT AND PROVISION OF DATA PRODUCTS
 - 4.3 DATA PRESENTATION AND QUALITY CONTROL
 - 4.4 POTENTIAL INCLUSION OF OTHER ENVIRONMENTAL PARAMETERS
 - 4.5 CONSIDERATION ON JDIMP DISCUSSIONS
- 5. CO-OPERATION**
 - 5.1 NEW DEVELOPMENTS IN GOOS
 - 5.2 NOWPAP
 - 5.3 NEAR-HOTO
 - 5.4 SEA-GOOS
 - 5.5 CREAMS
- 6. ADOPTION OF THE REPORT**
- 7. ELECTION OF CHAIRMAN**
- 8. CLOSURE**

ANNEX II

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ANNEX III

OPERATIONAL MANUAL FOR THE NORTH-EAST ASIAN REGIONAL GOOS (NEAR-GOOS) DATA EXCHANGE (version 2.0)

1. INTRODUCTION

As a regional pilot project of the Global Ocean Observing System (GOOS), the North-East Asian Regional GOOS (NEAR-GOOS) is being implemented by China, Japan, the Republic of Korea and the Russian Federation. NEAR-GOOS is intended to provide a regional framework for gathering and distributing oceanographic data in the North-East Asian region, in enabling participating countries to make better use of their investments in ocean observations and research towards the establishment of the Global Ocean Observing System. Oceanographic data and relevant products generated within NEAR-GOOS system will be open at free cost through electronic communications for various forms of marine uses.

A draft Implementation Plan for the NEAR-GOOS was prepared by an *ad hoc* Group and reviewed during the Expanded Experts Meeting for the NEAR-GOOS Implementation Plan. At the Third Session of the IOC Sub-Commission for the Western Pacific (Tokyo, Japan, 26 February - 1 March 1996), a decision was made on the establishment of a Co-ordinating Committee, composed of members nominated by the governments of four countries, to further develop the Implementation Plan and prepare an Operational Manual for NEAR-GOOS.

During the First Session of the NEAR-GOOS Co-ordinating Committee (Bangkok, Thailand, 4-6 September 1996), the Committee adopted the Implementation Plan for the initial phase of the North-East Asian Regional GOOS (NEAR-GOOS). At the initial phase, two data bases, one Real Time Data Base for daily mapping of sea conditions, and the other Delayed Mode Data Base for archiving, were the essential function of the NEAR-GOOS. With generous contributions from the Japan Meteorological Agency (JMA) and the Japan Oceanographic Data Centre (JODC), a draft Operational Manual for the data bases was prepared and adopted by the First Meeting of the NEAR-GOOS Co-ordinating Committee.

The Committee realized that the real time data exchange was a relatively new concept to the oceanographic community in the region and the revision of the Manual was needed to encourage the participation of the data producers. During its Second Session (Bangkok, Thailand, 14-16 May 1997), the NEAR-GOOS Co-ordinating Committee agreed to revise the NEAR-GOOS Operational Manual for more active implementation of the project. In particular, consideration was given to the data policies of different organizations and the latest technological advancement which enabled us to set up a data server easily. The revised manual which defines a combination of the centralized and de-centralized data exchange system was adopted at the third session of the NEAR-GOOS Co-ordinating Committee (Beijing, 3-6 August 1998).

This Operational Manual is subject to changes by the NEAR-GOOS Co-ordinating Committee. Such changes will be announced at the NEAR-GOOS homepage, so that users would make use of the NEAR-GOOS data bases in accordance with the latest version of the Manual.

2. OPERATION OF THE NEAR-GOOS

The NEAR-GOOS Co-ordinating Committee is established as a management body to further develop the Implementation Plan and Operational Manual as required, to monitor the operation of the system, to make necessary recommendations, to advise the participating countries on implementation of NEAR-GOOS and to report to the IOC/WESTPAC and I-GOOS as appropriate and required.

For effective transmission and exchange of the data, each country should establish a National Real Time Data Base and a National Delayed Mode Data Base to collect all the available oceanographic data in the country, and to make them available to the users. After 30 days of service from the National Real Time Data Bases, the data should be transferred to the National Delayed Mode Data Base for long term data archives.

The Regional Real Time Data Base is established to collect all the real time *in situ* observational data in the region from each National Real Time Data Base or directly from the data producers, and make them available in a set of common formats. The Regional Real Time Data Base also maintains a directory of the data/products available within the framework of NEAR-GOOS, and is responsible for the monitoring of the real time data exchange system. The data in the Regional Real Time Data Base are kept for 30 days and then transferred to the Regional Delayed

Mode Data Base, which also collects, distributes and maintains the delayed mode data for the use of NEAR-GOOS users.

There are two kinds of data transmission and management processes in NEAR-GOOS.

1) Data transmitted through GTS

Oceanographic/marine meteorological data such as temperature, salinity, currents, wind and waves which are reported through the Global Telecommunication System (GTS) in the framework of the IOC/WMO Integrated Global Ocean Service System (IGOSS) are loaded into the Regional Real Time Data Base. Those who make oceanographic/marine meteorological observations are invited to use this IGOS data flow, wherever appropriate and possible, to contribute their data for NEAR-GOOS and other oceanographic services.

2) Data not transmitted through GTS

Oceanographic observations which are not exchanged *via* GTS are made available to the oceanographic community by the data producers using the Internet, by preparing their own homepage, for example.

The IOC Regional Secretariat for WESTPAC will provide necessary Secretariat services for the operation of NEAR-GOOS.

3. NEAR-GOOS DATA MANAGEMENT AT DIFFERENT LEVELS

3.1 Data Producer

Each data producer in the NEAR-GOOS regions is advised to make proper efforts to minimize time in retrieving and analyzing the observational data, and to make the data available to users through the Internet. The participating data producers should give the information on their NEAR-GOOS data and products, such as their web site addresses, to the National Data Bases.

The following types of data/products are expected to be provided by data producers:

3.1.1 *In situ* observation data

For the efficient transmission of the data to the National and Regional Real Time Data Bases, the observation data need to be prepared in a computer readable format with suitable documentation.

The data producers are advised to prepare proper display (tables, figures, etc.) of the data to provide the useful information to the end-users.

3.1.2 Remote sensing data

Those who receive and process remote sensing data are encouraged to provide the wide range of ocean environmental information in the NEAR-GOOS region through the Internet.

3.1.3 Numerical Model Output

The organizations that are preparing products by numerical modeling, particularly with NEAR-GOOS data are encouraged to provide their information to the NEAR-GOOS community through the Internet.

3.2 Real Time Data Bases (RTDB)

National and Regional Real Time Data Bases help the users to access real time information produced by each data producer efficiently through NEAR-GOOS data exchange system.

3.2.1 National Real Time Data Base

All the real time data produced in each participating country are retrieved by the National Real Time Data Base through the Internet. The National Real Time Data Base of each country would provide the users with real time data and with the information on the services that are provided by each data producer in the country.

The National Real Time Data Base can collect all the data in the region from other National and Regional Real Time Data Bases and provide them to domestic users for more efficient services

3.2.2 Regional Real Time Data Base

The Regional Real Time Data Base collects all the real time *in situ* observational data in the region from each National Real Time Data Base or directly from the data producers, and makes them available in a set of common formats. The Regional Real Time Data Base also maintains a directory of the data/products available within the framework of NEAR-GOOS and is responsible for the monitoring of the real time data exchange system. The data in the Regional Real Time Data Base are kept for 30 days and then transferred to the Regional Delayed Mode Data Base.

The Japan Meteorological Agency (JMA), which operates a Regional Telecommunication Hub (RTH) under GTS of the WMO and a Special Oceanographic Centre (SOC) in IGOSS, assumes the responsibility of managing and operating the Regional Real Time Data Base.

3.3 Delayed Mode Data Bases (DMDB)

3.3.1 National Delayed Mode Data Base

The National Delayed Mode Data Base in each participating country collects the data from the National Real Time Data Base and provides them to the users in the country. It also collects the data produced in the country but not exchanged in real time through the National Real Time Data Base.

3.3.2 Regional Delayed Mode Data Base

The oceanographic/marine meteorological data in the NEAR-GOOS region are maintained at the Regional Delayed Mode Data Base operated by the Japan Oceanographic Data Centre (JODC), which is responsible for the Regional Data Centre for WESTPAC. The Regional Delayed Mode Data Base receives the data from the Regional Real Time Data Base 30 days after they are collected. The Regional Delayed Mode Data Base also collects the data/products from the National Delayed Mode Data Bases except those collected through Regional Real Time Data Base.

4. MANAGEMENT OF NEAR-GOOS DATA BASES

4.1 Management of the Data Bases

The Japan Meteorological Agency (JMA) and the Japan Oceanographic Data Centre (JODC) are requested to host the Regional Real Time and Delayed Mode Data Bases, respectively. Participating countries should establish National Real Time and Delayed Mode Data Bases to facilitate the data exchange. The organizations responsible for the National Data Bases should encourage the data producers in their countries to make their data available to NEAR-GOOS. Expenses for computer and telecommunication systems required to access the data at NEAR-GOOS Data Bases should be covered by the users.

NEAR-GOOS Data Bases should apply existing quality control procedures to ensure the quality of oceanic data in the system. In the mean time Regional Data Bases should explore appropriate procedures to be used as a NEAR-GOOS quality assurance/quality control in the future.

The NEAR-GOOS Data Bases assume no responsibility whatsoever with regard to the use of the data bases and data. Nor will the NEAR-GOOS Data Bases assume any responsibility for any consequences that may happen from interruption of data base services due to trouble with or maintenance of the data base servers or the related telecommunication circuit, etc.

4.2 Registration

The NEAR-GOOS data should be accessible, free of charge, to all users who are interested in obtaining the data. If it is required to ensure the security of the Data Bases and maintain effective utilization of data base, a password system can be introduced.

National and Regional Data Bases for NEAR-GOOS and the participating data producers which make their data available on their servers should have on-line registration capability to collect the user information for the monitoring of the data exchange system. Such online capability should allow users to provide the information such as the name, the contact person and address and the purpose of the data use. The information collected with the registration should be provided to the NEAR-GOOS Coordinator and to the Regional Real Time and Delayed Mode Data Base managers on a regular basis.

The members of the Coordinating Committee are responsible for collecting the user information and the status of access for all the data producers and the Data Bases in their country and report to the NEAR-GOOS Co-ordinator.

4.3 NEAR-GOOS Homepage

A NEAR-GOOS homepage is established at the GOOS Project Office for the promotion of the NEAR-GOOS activities. The GOOS Project Office is responsible for up-dating the homepage in co-operation with and contribution from the NEAR-GOOS Co-ordinating Committee. The current address of the homepage is:

[<http://ioc.unesco.org/goos/neargoos.htm>]

Homepages are also established at each National and Regional Data Base to provide guidance for accessing and contributing oceanographic data to the NEAR-GOOS data exchange system.

The addresses of the Data Base homepages are;

Regional Real Time Data Base

[<http://goos.kishou.go.jp>]

Regional Delayed Mode Data Base

[<http://www.jodc.jhd.go.jp/NEAR-GOOS.html>]

China National Real Time Data Base

[<http://www.nmefc.gov.cn/NEAR-GOOS/near-goos.html>]

China National Delayed Mode Data Base

[<http://near-goos.coi.gov.cn>]

5. Technical Manual

The technical manual for the NEAR-GOOS Regional Real Time and Delayed Mode Data Bases is attached in the Annex to this Operational Manual. Note that the technical manual is under the responsibility of the Data Bases and subject to change. The latest version of the technical manual is available at the homepages of the Data Bases.

The technical manuals for the National Data Bases are available at their homepages.

Annex: Technical Manual for Regional Data Bases

- 1. NEAR-GOOS Regional Real Time Data Base (RRTDB)**
 - 1.1 Data at RRTDB**
 - 1.2 Quality Control**
 - 1.3 Data retrieval from RRTDB**
 - 1.4 Provision of data to RRTDB**
 - 1.5 Security and registration**
 - 1.6 Maintenance of RRTDB**
- 2. NEAR-GOOS Regional Delayed Mode Data Base (RDMDB)**
 - 2.1 Retrievable data**
 - 2.2 Data processing and quality control at RDMDB**
 - 2.3 Data retrieval from RDMDB**
 - 2.4 Provision of data to RDMDB**
 - 2.5 Maintenance of RDMDB**
 - 2.6 Various addresses of RDMDB**

NEAR-GOOS Regional Real Time and Delayed Mode Data Bases have been established for the exchange of oceanographic data for ocean services and research, and they are operated according to the Operation Manual for the NEAR-GOOS Data Exchange. This Technical Manual describes detailed operations of the NEAR-GOOS Regional Data Bases, and is under the responsibility of the both Data Bases. This Technical Manual is subject to change, and users of the Data Bases are invited to refer to the latest versions which are available at the homepages of the two Data Bases.

1. NEAR-GOOS Regional Real Time Data Base (RRTDB)

The Japan Meteorological Agency (JMA) operates the RRTDB. This section describes the operation of the RRTDB. The homepage of the RRTDB is at:
[<http://goos.kishou.go.jp>]

1.1 Data at RRTDB

The RRTDB deals with the following data and products:

- 1) data observed by the participating organizations and collected through the Internet;
- 2) oceanographic data within the NEAR-GOOS area collected through the Global Telecommunication System (GTS) in the WMO Codes, SHIP, BUOY, TRACKOB, BATHY and TESAC (Currently data in the area north of 20°N and between 110°E and the date line are made available);
- 3) daily sea-surface temperature analysis by JMA

The contents of the RRTDB are updated every day at 02.30 UTC (11.30 JST). The data in the RRTDB are transferred to the Regional Delayed Mode Data Base operated by the Japan Oceanographic Data Centre (JODC), 30 days after they are received by the RRTDB.

The RRTDB collects all the *in situ* observational data provided by participating organizations in real time and makes them available to the users. Data and products of the other types such as satellite data, analysis and prediction products, are listed in the RRTDB homepage, and users should obtain such data and products directly from the National Data Bases or from the original sources.

1.2 Quality Control

The RRTDB eliminates the complete duplication of GTS reports within a file (see Section 1.3). It should be noted that more than one report of an observation at the same location and at the same time may exist in a file, if the

contents of the reports are not exactly the same.

Quality control is not applied for the data collected through the Internet when provided in the original formats. Minimal format and quality control is applied in the conversion of the data into the common format. Please refer to the RRTDB homepage for the common formats and details of the quality control.

The policy and method of the quality control should be determined by the NEAR-GOOS Co-ordinating Committee in future, considering the purpose of the data usage by various users. In the meantime, the RRTDB provides the quality controlled data in cooperation with the Global Temperature and Salinity Profile Programme (GTSP) on a trial basis.

1.3 Data retrieval from RRTDB

A user can retrieve data of the RRTDB to their computer by ftp. They are also able to retrieve the data through the RRTDB homepage.

The RRTDB server has a directory, "/pub" to contain all the data of the RRTDB. Under this directory are sub-directories, whose names indicate the name of the data type, such as "ship", "buoy", etc. Data are stored in files under these sub-directories. Each file has a name indicating the date of observation, the date of reception at the RRTDB, as in the following examples:

/pub/ship/ship.obsJul20.rcvJul21

the data of the observation made on 20 July, reported to the RRTDB in the form of SHIP (one of the WMO Codes) during the 24 hours until 0010 UTC, 21 July.

/pub/JAFIC/jafic.obsJul20.rcvJul21

the data of the observation made by the Japan Fisheries Information Service Centre (JAFIC) on 20 July reported on 21 July.

/pub/subst/subst.rcvJul21

all the temperature data reported on 21 July from various sources. They are in a common format.

/pub/sstanl/sstanl.obsJul20

daily SST Analysis data on 20 July.

Each file contains the data corresponding to the observation date and input date indicated by its name in the following format.

1) GTS data

The data are stored in the character code according to the WMO Code, which is explained at the RRTDB homepage. A file usually contains more than one report corresponding to the observation date and input date to the RRTDB indicated by the file name.

(2) Non-GTS data

The data are made available in the same format that is used by the original users. The explanation for the data formats should be available in the same sub-directories that hold the data.

(3) Data in common formats

The RRTDB converts some of the parameters in the data, such as temperatures, from the original formats into common formats and makes them available. The description of the common formats is found in the RRTDB homepage.

1.4 Provision of data to RRTDB

The users of the RRTDB are encouraged to contribute their data to the RRTDB to promote the exchange of oceanographic data. The users can use any of the following three options as a means to provide their data.

1) Provision through GTS

Temperatures, salinities, currents and marine meteorological observations can be provided to the RRTDB through GTS by sending messages in the WMO Code *via* INMARSAT or a coastal radio station. The transmission fee will be, in principle, covered by the national Meteorological Service of the country concerned. Please contact

the national Meteorological Service for more information.

2) Provision on the user's site

Users can make their data/products available on their homepages or ftp servers. Please let the RRTDB know the address, the format and contents of the data/products, file naming rules, frequency of the data update, etc., so that the RRTDB can retrieve the data/products regularly.

3) Transmission *via* ftp, e-mail

The RRTDB creates a directory with 'write permission' onto which users can send their data/products files *via* ftp. The RRTDB also accepts the data provision *via* e-mail. Those users who send their data through ftp or e-mail are requested to provide the information on their data such as the format and contents of the data.

The data should be contributed in the WMO Code or in the format defined by the user. The RRTDB transfers all the available data to the directory "/pub" (see 1.3) so that other users can retrieve them. The RRTDB also decodes the data and put them in a set of common formats (see 1.3). Therefore, the users who contribute the data are requested to provide the RRTDB with the explanatory information on the data format that they use.

1.5 Security and registration

When a user accesses the RRTDB, a password is needed for the security of the RRTDB server. Those who wish to use the RRTDB are invited to obtain the account and password by submitting the application form (Attachment) to the RRTDB or through the RRTDB homepage.

The user is encouraged to change their password regularly. The password can be changed by the user *via* telnet. The telnet access by the RRTDB users has been prepared only for the password change, and it automatically logs out as soon as the password is changed.

1.6 Maintenance of RRTDB

The RRTDB server is composed of two identical workstations which back up each other to enhance the reliability of the RRTDB function. However, the system maintenance work or an unexpected problem with the system may suspend the RRTDB services. In case of unexpected troubles, the RRTDB will make every effort to resume the RRTDB function as soon as possible, though the measures are usually taken within normal working hours.

The notification from the RRTDB to the users on operational matters, such as planned maintenance work, is made by putting the notice in a news file accessible by all the users. The users can look at this file either *via* the RRTDB homepage or *via* ftp. The RRTDB sends the same content to the registered users by e-mail, but does not confirm the reception nor make re-transmission in case of communication failure. The news file is also seen as the opening message of the ftp session.

2. NEAR-GOOS Regional Delayed Mode Data Base (RDMDB)

The Japan Oceanographic Data Centre (JODC) of the Japanese Maritime Safety Agency operates the RDMDB. This section describes the operation of the RDMDB.

2.1 Retrievable data

The following data can be retrieved from the RDMDB.

1) Data collected through the Regional Real Time Data Base (RRTDB).

The following data are transferred to the RDMDB 30 days after they are received by the RRTDB.

- data collected by the RRTDB from NEAR-GOOS participating organizations through the Internet.
- oceanographic data within the NEAR-GOOS area collected *via* GTS under the WMO Codes, SHIP, BUOY, TRACKOB, BATHY and TESAC (Currently, data in the area the north of 20°N and between 110°E and the Date Line are made available).
- daily North-West Pacific Ocean sea-surface temperature analysis data by Japan Meteorological Agency.

- 2) Data collected through the National Delayed Mode Data Base (NDMDB).
Data collected and managed by the NDMDB excluding those collected and managed *via* the NRTDB are transferred to the RDMDB at regular intervals.
- 3) Data directly sent to the RDMDB
These data include detailed oceanographic data that cannot be reported on a real time basis, such as CTD 2db water temperature and salinity data and moored current meter data.
- 4) Other data
Prompt report on current and temperature of the adjacent area of Japan prepared by the Hydrographic Department of the Japanese Maritime Safety Agency.

2.2 Data processing and quality control at RDMDB

Data transferred to the RDMDB after 30 days since they are received by the RRTDB are classified by type and each of the classified data received in a period of one month counting from the date of reception are compiled into one file. After that, these data are registered in the RDMDB data retrieval system, which will be described later, so that they can be accessed by users. Basically, the same data format used at the RRTDB is accepted when data are compiled into files, and contents of data are not edited. Examples of file names are given below.

1996_07.bathy

BATHY data received by the RRTDB in July 1996.

1998_07.JAFIC

Data observed by the Japan Fisheries Information Service Centre in July 1998 and reported to the RRTDB.

1997_06.subst

All water temperature data collected by the RRTDB in June 1997, converted to the common format.

1997_04.sstanl

Daily North-West Pacific Ocean sea-surface temperature analysis data in April 1997 compiled by the Japan Meteorological Agency.

Data not mentioned above are processed properly one by one. After that, they are registered in the RDMDB data retrieval system for access by users.

A page containing information on file names and data formats for data collected and managed by the RDMDB is provided in the NEAR-GOOS RDMDB Homepage, which will be described later.

Quality control is not currently performed on the data. The policy and method of quality control should be determined by the NEAR-GOOS Coordinating Committee in future, considering the purposes of data usage by various users.

2.3 Data retrieval from RDMDB

The RDMDB can be accessed from the NEAR-GOOS RDMDB Homepage provided in the JODC WWW site.

The main contents of the NEAR-GOOS RDMDB Homepage are as follows:

- Notice from RDMDB administrator
- Information on NEAR-GOOS
- Description of the RDMDB
- Other related information
- RDMDB data retrieval system

To retrieve data, a user is required to access the RDMDB data retrieval system. A first-time user is required to go through the procedure for user registration on his/her WWW browser screen to retrieve data. Just provide necessary information such as user's name and e-mail address. From the next time the user can retrieve data by inputting the registered e-mail address.

The RDMDB data retrieval system displays a list of data by type and period so that a user can select data on

the screen and retrieve it.

For more information on the RDMDB data retrieval system, see the NEAR-GOOS RDMDB Homepage.

2.4 Provision of data to RDMDB

The users of the RDMDB data base are encouraged to contribute their data to the RDMDB to promote the exchange of oceanographic data. They can use any of the following options as a means to provide their data.

1) Retrieval of users' data by the RDMDB

This method allows the RDMDB to retrieve data provided in WWW sites and ftp sites operated by various organizations. The RDMDB access users' WWW sites and ftp sites at regular intervals to retrieve data. Users who can allow the RDMDB to retrieve their data in this manner are requested to supply information on the format and contents of their data, file naming rules and data updating frequency to the RDMDB.

2) Provision of data to the RDMDB by users

RDMDB provides a directory with "write permission" for users who can send their data to the RDMDB *via* ftp. It also accepts data provision *via* e-mail. Users who wish to send their data *via* ftp or e-mail are requested to supply information on their data such as the format and contents of their data, file naming rules (applicable only when they send data *via* ftp) and data provision frequency to the RDMDB.

Users may send data in any format to the RDMDB. The RDMDB will properly process data supplied to the RDMDB and then register them in the RDMDB data retrieval system together with catalog information so that they can be retrieved by users.

2.5 Maintenance of RDMDB

The RDMDB offers various online services of JODC including the JODC WWW site and also provides 24-hour data base operation on the data base operating system owned by JODC. However, system maintenance work or an unexpected failure of the system may suspend the RDMDB services. In case of such unexpected failures, the RDMDB will make every effort to resume the RDMDB function as soon as possible, though measures to restore operation will be taken within JODC's regular business hours (from 9:30 to 17:45, JST, on weekdays except on national holidays).

As a rule, the RDMDB administrator notifies users of RDMDB operational matters, such as temporary suspension of RDMDB operation due to maintenance work, in the notification page provided in the NEAR-GOOS RDMDB Homepage.

2.6 Various addresses of RDMDB

NEAR-GOOS RDMDB Homepage address and addresses used to send data are shown below:

NEAR-GOOS RDMDB Homepage

[<http://www.jodc.jhd.go.jp/NEAR-GOOS.html>]

Address used to send data to RDMDB (ftp server)

[<ftp://ftp.jodc.jhd.go.jp/pub/incoming/>]

Address used to send data to RDMDB (e-mail)

[mail@jodc.jhd.go.jp]

E-mail address of RDMDB administrator

[mail@jodc.jhd.go.jp]

Attachment

Form of the Request for the Registration

(Date, Place)

For the attention of
the NEAR-GOOS Regional Real Time Data Base Manager

I request that my Organization be registered in the NEAR-GOOS Data Base.

1. Name of organization and country
2. Contact person
3. E-mail address(es) of the contact person (the completion of the registration will be notified to the contact person at this address. Please indicate up to two addresses)
4. Account name
5. IP address of the computer for the access to the Data Base
6. Purpose of the use of the Data Base
7. Oceanographic Data of your Organization (type, source, etc.)
8. Can the data referred to in item 7 be exchanged through the Data Base? (Yes/No)
Please specify.
9. Expected amount of data per month to be transmitted to the Data Base (in kilobytes)

SIGNATURE

ANNEX IV
LIST OF ACRONYMS

CREAMS	Circulation Research of the East Asian Marginal Seas
DMDB	Delayed Mode Data Base
FREHRI	Far Eastern Regional Hydrometeorological Research Institute
GCOS	Global Climate Observing System
GODAR	Global Oceanographic Data Archaeology and Rescue Project
GOOS	Global Ocean Observing System
GTOS	Global Terrestrial Observing System
GTSP	Global Temperature and Salinity Profile Programme
HOTO	Health of the Oceans
ICSU	International Council of Scientific Unions
IGOS	Integrated Global Observing Strategy
IGOSS	Integrated Global Ocean Services System
IOC	Intergovernmental Oceanographic Commission
IODE	International Oceanographic Data and Information Exchange Programme
J-COMM	Joint Commission on Oceanography and Marine Meteorology
JDIMP	Joint Data and Information Management Panel
JMA	Japan Meteorological Agency
JODC	Japan Oceanographic Data Centre
KMA	Korea Meteorological Administration
KORDI	Korea Ocean Research and Development Institute
KORI	Korea Oceanographic Research Institute
MOMAF	Ministry of Marine Affairs and Fisheries (of the Republic of Korea)
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
NMDIS	National Marine Data and Information Services
NOWPAP	North- West Pacific Action Plan
PICES	North Pacific Marine Science Organization
POI	Pacific Oceanological Institute
RTDB	Real Time Data Base
SEACAMP	South-East Asian Centre for Atmospheric and Marine Prediction
SEA-GOOS	South-East Asian GOOS
SeaWiFS	Sea-Viewing, Wide-Field-of-View Sensor
SST	Sea Surface Temperature
UNEP	United Nations Environment Programme
WESTPAC	IOC Sub-Commission for the Western Pacific
WMO	World Meteorological Organization