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RNODC ACTIVITY REPORT

No.13
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Responsible National Oceanographic Data Center

for WESTPAC

for IGOSS

for MARPOLMON

for ADCP

JAPAN OCEANOGRAPHIC DATA CENTER

HYDROGRAPHIC DEPARTMENT,
JAPAN COAST GUARD

PURPOSE

Japan Oceanographic Data Center (JODC) was established in 1965 in the Hydrographic Department, Maritime Safety Agency of Japan (presently the Japan Coast Guard) in accordance with the resolution adopted by the Intergovernmental Oceanographic Commission (IOC) of UNESCO in 1961.

The aim of the IODE system is to "***enhance marine research, exploration, and development by facilitating the exchange of oceanographic data and information between participating Member States***". The IODE system consists mainly of the following three types of data centers:

World Data Centers for Oceanography (WDCs) have the responsibility of managing and disseminating oceanographic research data worldwide. This data is collected and submitted voluntarily from national programs, or produced by international co-operative ventures.

Responsible National Oceanographic Data Centers (RNODCs) are established in order to mitigate the increasing amount of WDC activities. RNODCs are National Oceanographic Data Centers (NODCs) that have accepted additional special responsibilities that may include specific data types or specific regions.

National Oceanographic Data Center (NODC) is a centralized facility for providing, on a continuing basis, ocean data/information in a usable form to a wide user community in each member state of IOC. This facility acquires, processes, controls quality, inventories, archives and disseminates data in accordance with national responsibilities. In addition to disseminating data and data products nationally, NODCs are normally charged with the responsibility of conducting international exchange in the IODE system.

Since its establishment, JODC has been fulfilling the role of the synthetic marine data bank of Japan, and has been carrying out its services internationally as the NODC under the IODE system. JODC has also been in charge of RNODC for WESTPAC, IGOSS, MARPOLMON and ADCP.

The purpose of this annual publication, "RNODC Activity Report", is to provide information on the activities of JODC as the aforementioned RNODCs to data contributors, data users, oceanographic communities, and other national oceanographic data centers within the framework of IODE.

PREFACE

Japan Oceanographic Data Center (JODC) fills an important role as Responsible National Oceanographic Data Center (RNODC) for WESTPAC, IGOSS (Integrated Global Ocean Services System), MARPOLMON (Marine Pollution Monitoring Program) and ADCP (Acoustic Doppler Current Profiler) under the International Oceanographic Data and Information Exchange (IODE) promoted by the Intergovernmental Oceanographic Commission (IOC) of UNESCO.

To fulfill its responsibilities, JODC has required contribution of related organizations such as the research organizations that carry out oceanographic observations and National Oceanographic Data Centers (NODCs) in the world. I would like to express my appreciation for the cooperation provided by such organizations, and at the same time, I would like to ask for their further cooperation and support for JODC.

One of the major purposes of NODCs is to prevent the loss of oceanographic observation data acquired by oceanic research organizations, and to manage such data for supply to users such as oceanographic researchers. The 16th IODE Meeting, held in November 2000, approved the implementation of the Global Oceanographic Data Archaeology and Rescue project for Western Pacific region (GODAR-WESTPAC). The aim of this project is to locate oceanographic observation data at risk of being lost at the oceanographic research organizations of the WESTPAC countries, and to subsequently digitize such data to make it available for use. It is a major project to be executed by NODCs in the IODE system. JODC will implement this project as the RNODC for WESTPAC.

In closing, I would like to inform you that in 2002, JODC changed its website address to http://www.jodc.go.jp/. This change provides an opportunity for JODC to further enrich the supply of oceanographic data and information on the Internet. I hope this proves to be useful to all of you.

March 2002

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ANNEX

1. RNODC Activities under the Charge of the JODC

1.1 RNODC for WESTPAC

(1) Status of CSR and Data Management

The major activities of JODC are the collection and archiving of CSR (Cruise Summary Report of IODE, ROSCOP's third edition), and data from the beginning of the WESTPAC program in 1979.

Procedures for forwarding and disseminating CSR and data are introduced in Fig. 1.

The terms of reference for RNODC for WESTPAC are shown in Annex I.

The CSRs received by JODC in 2001 are shown in Table 1-1.

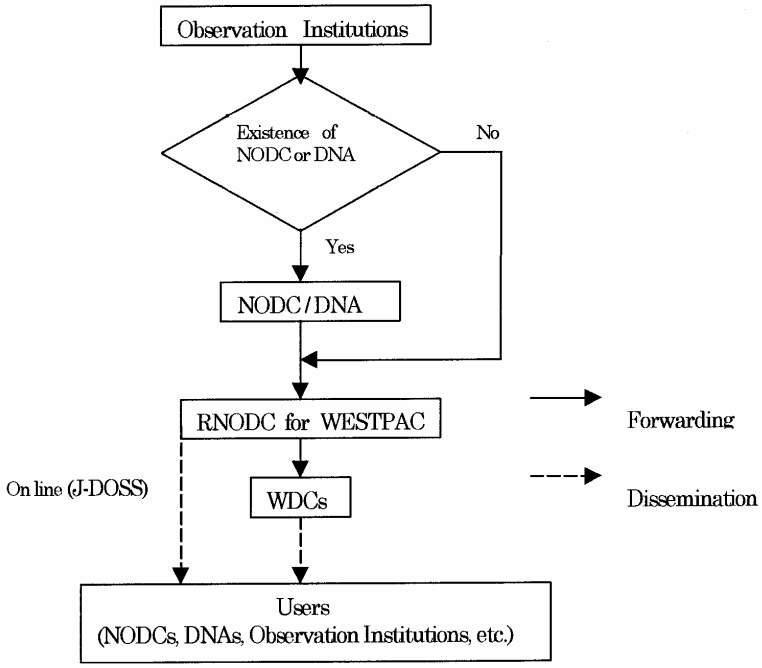

Fig. 1 Procedures for Forwarding and Disseminating CSR/Data

(2) Data Training Course

"The Training Course on the Oceanographic Data Management for WESTPAC" has been organized every year since 1982 at the Japan Oceanographic Data Center (JODC), in support of the activities of the IOC Sub-Commission for the Western Pacific (WESTPAC). NEAR-GOOS started in 1996, and these activities were added to the Training Course on Oceanographic Data Management from 1997, so the course name was changed to "IOC/WESTPAC Training Course on NEAR-GOOS Data Management".

The objectives of the training course are to provide participants currently involved in oceanographic data and information management from Member States of the WESTPAC region with basic concept of the IODE and NEAR-GOOS system and its functions, and acquisition, procession and compilation of oceanographic data.

The Fifth IOC/WESTPAC Training Course on NEAR-GOOS Data Management was organized by the JODC under the auspices of the IOC and with financial support from UNESCO/Japan FIT (506RAS44) Project, from 5 to 16 November 2001 at the JODC, Hydrographic Department, Japan Coast Guard, Tokyo,

Japan.

The IOC announced the training course to all Member States through its Circular Letter No. 1696 dated 20 June 2001, and in response, fourteen applications were received from eight Member States of the WESTPAC. In consultation with the authorities concerned, six participants from China, Korea, Russia, Vietnam, Thailand and the Philippines were selected by the IOC and the JODC. This Training Course was the twentieth, and it have been attended by a total of 80 trainees from nine countries.

The program covered various subjects such as the method of processing and managing oceanographic data and information, an outline of the activities of JODC, the concept of the IODE program and practical training on the usage of personal computers and workstations in data management and quality control. Study visits to relevant organizations such as Japan Meteorological Agency (JMA) were also included. In addition, the course contained new training, biological data management and use of the personal computer training resource "IODE Resource Kit" published by IODE/IOC.

Table 1-1 Inventory of CSR Received by JODC in 2001

AGENCY	SHIP	AREA	PERIOD	DATA TYPE
ORI/UT	HAKUHO MARU	North Pacific Ocean	1994/05/17 - 1994/07/07	B,D,H,G
ORI/UT	HAKUHO MARU	North Pacific Ocean	1997/05/16 - 1997/06/18	B,D,H
ORI/UT	HAKUHO MARU	North Pacific Ocean	1997/10/24 - 1997/11/11	B,D,H
ORI/UT	HAKUHO MARU	North Pacific Ocean	1998/09/07 - 1998/10/28	B,D,H
ORI/UT	HAKUHO MARU	North Pacific Ocean	1999/05/18 - 1999/06/10	B,D,H
NFRDI/KOREA	PUSAN890	Japan Sea	1999/06/07 - 1999/06/09	B,H
NFRDI/KOREA	PUSAN890	Japan Sea	1999/06/28 - 1999/06/30	B,H
MMO/JMA	SEIFU MARU	Japan Sea	1999/11/19 - 1999/12/01	B,D,H,M
NFRDI/KOREA	PUSAN870	Japan Sea	2000/01/10 - 2000/01/13	H
MMO/JMA	SEIFU MARU	Japan Sea	2000/01/18 - 2000/03/02	B,D,H,G,M,P
KORDI/KOREA	BADARO 3	Japan Sea	2000/01/24 - 2000/01/31	H
NFRDI/KOREA	JEJU869	Japan Sea	2000/02/07 - 2000/02/10	G,H,P
NFRDI/KOREA	PUSAN890	Japan Sea	2000/02/07 - 2000/02/12	G,H,P
NFRDI/KOREA	KYUNGNAM871	Japan Sea	2000/02/10 - 2000/02/11	B,G,H,P
NFRDI/KOREA	JEONBUK868	Yellow Sea	2000/02/10 - 2000/02/11	G,H,P
NFRDI/KOREA	CHONNAM858	Yellow Sea	2000/02/10 - 2000/02/14	G,H,P
NFRDI/KOREA	CHONNAM872	Yellow Sea	2000/02/10 - 2000/02/14	B,G,H,P
NFRDI/KOREA	TAMGU 2	Yellow Sea	2000/02/10 - 2000/02/17	G,H,P
NFRDI/KOREA	KANGWON866	Japan Sea	2000/02/10 - 2000/02/17	B,G,H,P
NFRDI/KOREA	TAMGU 1	Bering Sea	2000/02/10 - 2000/04/04	B,G,H
NFRDI/KOREA	TAMGU 6	Japan Sea	2000/02/12 - 2000/02/17	B,G,H,P
NFRDI/KOREA	PUSAN870	Japan Sea	2000/02/13 - 2000/02/16	B,H
NORI/KOREA	HAE YANG2000	Japan Sea	2000/02/15 - 2000/03/05	D,H,M
NORI/KOREA	BADARO 2	Japan Sea	2000/02/15 - 2000/03/05	D,H,M
NFRDI/KOREA	PUSAN870	Japan Sea	2000/02/16 - 2000/02/18	B,H
NFRDI/KOREA	PUSAN870	Japan Sea	2000/02/21 - 2000/02/23	B,H
NMPA/KOREA	PREVENTION SHIP 19	Japan Sea	2000/02/24 - 2000/02/24	B,H,P
NMPA/KOREA	KYONGBUK885	Yellow Sea	2000/03/03 - 2000/03/04	B,H,P
NMPA/KOREA	KYONGBUK885	Yellow Sea	2000/03/04 - 2000/03/04	B,H,P
NORI/KOREA	BADARO 3	Japan Sea	2000/03/09 - 2000/07/12	D
NORI/KOREA	BADARO 2	Japan Sea	2000/03/31 - 2000/05/07	D,H,M
NORI/KOREA	HAE YANG2000	Yellow Sea	2000/04/01 - 2000/10/20	G,H
KORDI/KOREA	ONNURI	Japan Sea	2000/04/02 - 2000/04/21	G
KORDI/KOREA	EARDO	Yellow Sea	2000/04/10 - 2000/04/22	B,H,P
NFRDI/KOREA	PUSAN890	Japan Sea	2000/04/17 - 2000/04/19	B,H
NFRDI/KOREA	PUSAN870	Japan Sea	2000/04/17 - 2000/04/21	B,H
NORI/KOREA	FISHING BOAT	Japan Sea	2000/04/19 - 2000/09/02	D
NORI/KOREA	FISHING BOAT	Yellow Sea	2000/04/19 - 2000/12/14	D
JMA	RYOFU MARU	North Pacific Ocean	2000/04/20 - 2000/05/24	B,D,H,G,M,P

AGENCY	SHIP	AREA	PERIOD	DATA TYPE
NFRDI/KOREA	PUSAN870	Japan Sea	2000/04/24 - 2000/04/26	B,H
NFRDI/KOREA	TAMGU 1	Yellow Sea, East China Sea, Japan Sea	2000/04/24 - 2000/05/13	B,H
MMO/JMA	SEIFU MARU	Japan Sea	2000/04/25 - 2000/05/29	B,D,H,M,P
KORDI/KOREA	DONGBACK	Yellow Sea	2000/04/26 - 2000/05/05	B
NFRDI/KOREA	JEJU869	Japan Sea	2000/05/01 - 2000/05/04	G,H,P
NFRDI/KOREA	CHONNAM858	Yellow Sea	2000/05/01 - 2000/05/05	G,H,P
NFRDI/KOREA	KYUNGNAM871	Japan Sea	2000/05/02 - 2000/05/03	B,G,H,P
NFRDI/KOREA	JEONBUK868	Yellow Sea	2000/05/02 - 2000/05/04	G,H,P
NFRDI/KOREA	TAMGU 2	Yellow Sea	2000/05/02 - 2000/05/10	G,H,P
HD/JCG	TENYO	Sea of Okhotsk	2000/05/04 - 2000/05/06	D,H
NFRDI/KOREA	PUSAN890	Japan Sea	2000/05/08 - 2000/05/13	G,H,P
NFRDI/KOREA	TAMGU 6	Japan Sea	2000/05/09 - 2000/05/14	B,G,H,P
NFRDI/KOREA	TAMGU 3	Yellow Sea, East China Sea, Japan Sea	2000/05/09 - 2000/06/02	B
NFRDI/KOREA	TAMGU 6	Japan Sea	2000/05/12 - 2000/05/14	B,G,H,P
NFRDI/KOREA	unknown	Japan Sea	2000/05/15 - 2000/05/19	B,H
FF/NU	KAKUYO MARU	East China Sea	2000/05/15 - 2000/05/24	B,D,H
NMPA/KOREA	PREVENTION SHIP 19	Japan Sea	2000/05/16 - 2000/05/16	B,H,P
NFRDI/KOREA	PUSAN890	Japan Sea	2000/05/17 - 2000/05/19	B,H
NFRDI/KOREA	CHONNAM872	Yellow Sea	2000/05/17 - 2000/05/20	B,G,H,P
NMPA/KOREA	PREVENTION SHIP 18	Japan Sea	2000/05/19 - 2000/05/19	B,H,P
NMPA/KOREA	PREVENTION SHIP 19	Japan Sea	2000/05/24 - 2000/05/24	B,H,P
NORI/KOREA	BADARO 2	Japan Sea	2000/05/31 - 2000/06/30	D,H,M
KORDI/KOREA	EARDO	Yellow Sea	2000/06/12 - 2000/06/22	B
ORI/UT	TANSEI MARU	North Pacific Ocean, Philippine Sea	2000/06/15 - 2000/06/22	
NFRDI/KOREA	PUSAN870	Japan Sea	2000/06/19 - 2000/06/22	B,H
JMA	RYOFU MARU	North Pacific Ocean	2000/06/20 - 2000/07/31	B,D,H,G,M,P
KORDI/KOREA	EARDO	Yellow Sea	2000/06/21 - 2000/07/11	G
NFRDI/KOREA	PUSAN870	Japan Sea	2000/06/27 - 2000/06/30	B,H
HD/JCG	TENYO	North Pacific Ocean	2000/06/30 - 2000/07/05	D,H
MMO/JMA	SEIFU MARU	Japan Sea	2000/07/05 - 2000/08/08	B,D,H,G,M,P
HD/JCG	TENYO	North Pacific Ocean, Philippine Sea	2000/07/12 - 2000/07/19	D,H
NFRDI/KOREA	PUSAN890	Japan Sea	2000/07/13 - 2000/07/15	B,H
NFRDI/KOREA	PUSAN870	Japan Sea	2000/07/18 - 2000/07/21	B,H
FF/NU	KAKUYO MARU	North Pacific Ocean	2000/07/19 - 2000/08/10	B,H
NFRDI/KOREA	KYUNGNAM871	Japan Sea	2000/08/01 - 2000/08/02	B,G,H,P
NFRDI/KOREA	JEJU869	Japan Sea	2000/08/01 - 2000/08/05	G,H,P
NFRDI/KOREA	CHONNAM858	Yellow Sea	2000/08/01 - 2000/08/05	G,H,P
NORI/KOREA	BADARO 2	Japan Sea	2000/08/01 - 2000/08/31	D,H,M
NORI/KOREA	BADARO 3	Yellow Sea	2000/08/01 - 2000/09/14	D
NFRDI/KOREA	CHONNAM872	Yellow Sea	2000/08/02 - 2000/08/05	B,G,H,P
NFRDI/KOREA	TAMGU 6	Japan Sea	2000/08/05 - 2000/08/07	B,G,H,P
NFRDI/KOREA	TAMGU 6	Japan Sea	2000/08/05 - 2000/08/09	B,G,H,P
NFRDI/KOREA	PUSAN890	Japan Sea	2000/08/07 - 2000/08/11	G,H,P
NFRDI/KOREA	TAMGU 2	Yellow Sea	2000/08/07 - 2000/08/12	G,H,P
NMPA/KOREA	TAMGU 5	Yellow Sea	2000/08/08 - 2000/08/09	B,H,P
NMPA/KOREA	INCHON888	Japan Sea	2000/08/08 - 2000/08/12	B,G,H,P
NMPA/KOREA	TAMGU 5	Japan Sea	2000/08/10 - 2000/08/10	B,H,P
NFRDI/KOREA	JEONBUK868	Yellow Sea	2000/08/11 - 2000/08/12	G,H,P
KORDI/KOREA	OLYMPIC 8	Japan Sea	2000/08/16 - 2000/08/20	D
NFRDI/KOREA	PUSAN870	Japan Sea	2000/08/18 - 2000/08/22	B,H
HD/JCG	SHOYO	North Pacific Ocean	2000/08/21 - 2000/09/14	G
NFRDI/KOREA	PUSAN870	Japan Sea	2000/08/23 - 2000/08/26	B,H
HD/JCG	MEIYO	Japan Sea	2000/08/29 - 2000/09/22	G
ORI/UT	HAKUHO MARU	North Pacific Ocean, East China Sea	2000/09/05 - 2000/10/19	D,H,M

AGENCY	SHIP	AREA	PERIOD	DATA TYPE
KORDI/KOREA	EARDO	Yellow Sea	2000/09/14 - 2000/09/27	B,H,P
NORI/KOREA	BADARO 3	Yellow Sea	2000/09/15 - 2000/10/31	D
NFRDI/KOREA	PUSAN870	Japan Sea	2000/09/16 - 2000/09/19	B,H
NFRDI/KOREA	TAMGU 3	Japan Sea	2000/09/18 - 2000/10/09	B
JMA	RYOFU MARU	North Pacific Ocean	2000/09/20 - 2000/11/20	B,D,H,G,M,P
ORI/UT	TANSEI MARU	Japan Sea	2000/09/25 - 2000/10/02	B,G
NORI/KOREA	BADARO 2	Japan Sea	2000/10/04 - 2000/11/03	D,H,M
MMO/JMA	SEIFU MARU	Japan Sea	2000/10/06 - 2000/11/06	B,D,H,G,M,P
NFRDI/KOREA	PUSAN870	Japan Sea	2000/10/13 - 2000/10/16	B,H
JMA	KEIFU MARU	North Pacific Ocean, Japan Sea, East China Sea	2000/10/19 - 2000/12/01	D,H,G,M,P
HD/JCG	TAKUYO	North Pacific Ocean	2000/10/23 - 2000/11/08	D,H
NFRDI/KOREA	TAMGU 1	Yellow Sea, East China Sea, Japan Sea	2000/10/28 - 2000/11/15	B,H
KORDI/KOREA	EARDO	Japan Sea	2000/10/30 - 2000/11/09	H
NFRDI/KOREA	JEJU869	Japan Sea	2000/11/03 - 2000/11/06	G,H,P
NFRDI/KOREA	CHONNAM858	Yellow Sea	2000/11/05 - 2000/11/10	G,H,P
NFRDI/KOREA	JEONBUK868	Yellow Sea	2000/11/06 - 2000/11/08	G,H,P
NFRDI/KOREA	PUSAN890	Japan Sea	2000/11/06 - 2000/11/11	G,H,P
NFRDI/KOREA	TAMGU 2	Yellow Sea	2000/11/06 - 2000/11/12	G,H,P
NFRDI/KOREA	KYUNGNAM871	Japan Sea	2000/11/09 - 2000/11/10	B,G,H,P
NFRDI/KOREA	CHONNAM872	Yellow Sea	2000/11/09 - 2000/11/13	B,G,H,P
NMPA/KOREA	PATROL SHIP275	Yellow Sea	2000/11/13 - 2000/11/14	B,H,P
HD/JCG	SHIRASE	Indian Ocean, South Pacific Ocean	2000/11/14 - 2001/03/20	D,H,P
NIPR	SHIRASE	Indian Ocean	2000/11/14 - 2001/04/13	G
MMO/JMA	SEIFU MARU	Japan Sea	2000/11/17 - 2000/12/07	B,D,H,G,M
NFRDI/KOREA	PUSAN870	Japan Sea	2000/11/20 - 2000/11/22	B,H
NFRDI/KOREA	TAMGU 3	Japan Sea	2000/11/21 - 2000/11/23	B,H
NMPA/KOREA	PREVENTION SHIP 19	Japan Sea	2000/11/22 - 2000/11/23	B,H,P
NFRDI/KOREA	TAMGU 6	Japan Sea	2000/11/22 - 2000/11/29	B,G,H,P
NFRDI/KOREA	TAMGU 6	Japan Sea	2000/11/25 - 2000/11/29	B,G,H,P
NMPA/KOREA	PREVENTION SHIP 18	Japan Sea	2000/11/27 - 2000/11/27	B,H,P
NORI/KOREA	HAE YANG2000	Japan Sea	2000/12/04 - 2000/12/23	D,H,M
HMO/JMA	KOFU MARU	North Pacific Ocean	2001/01/12 - 2001/03/02	B,D,H,M,P
KMO/JMA	SHUMPU MARU	Philippine Sea	2001/01/19 - 2001/02/02	D,H,G,M
JMA	RYOFU MARU	North Pacific Ocean	2001/01/19 - 2001/02/21	B,D,H,G,M,P
JMA	KEIFU MARU	North Pacific Ocean	2001/01/19 - 2001/03/09	D,H,G,M,P
HD/JCG	TAKUYO	North Pacific Ocean, Philippine Sea	2001/02/13 - 2001/03/09	D,H
NFRDI/KOREA	INCHON888	Yellow Sea	2001/02/14 - 2001/02/23	B,D,H,M
NFRDI/KOREA	TAMGU 3	East China Sea	2001/02/15 - 2001/02/22	B,D,H,M
NFRDI/KOREA	TAMGU 1	East China Sea	2001/02/15 - 2001/03/07	B,D,H,M
ORI/UT	TANSEI MARU	Western North Pacific	2001/03/01 - 2001/03/07	
HD/JCG	KAIYO	North Pacific Ocean	2001/03/05 - 2001/03/09	
NFRDI/KOREA	TAMGU 3	East China Sea	2001/04/04 - 2001/04/11	B,D,H,M
NFRDI/KOREA	INCHON888	Yellow Sea	2001/04/09 - 2001/04/17	B,D,H,M
NFRDI/KOREA	TAMGU 5	Japan Sea	2001/04/12 - 2001/04/18	B,D,H,M
HMO/JMA	KOFU MARU	North Pacific Ocean	2001/04/20 - 2001/05/15	B,D,H,M,P
ORI/UT	TANSEI MARU	North Pacific Ocean	2001/05/07 - 2001/05/12	
FF/NU	NAGASAKI MARU	East China Sea	2001/05/08 - 2001/05/16	B,H
FF/NU	KAKUYO MARU	East China Sea	2001/05/16 - 2001/05/24	B,D,H,P
NFRDI/KOREA	TAMGU 3	East China Sea	2001/05/22 - 2001/05/31	B,D,H,M
HD/JCG	TAKUYO	Philippine Sea	2001/05/26 - 2001/06/25	G
NFRDI/KOREA	TAMGU 5	Japan Sea	2001/06/04 - 2001/06/18	B,D,H,M
RIAM/KU	KAKUYO MARU	Japan Sea	2001/06/04 - 2001/06/19	B,D,H
NFRDI/KOREA	TAMGU 3	East China Sea	2001/06/06 - 2001/06/11	B,D,H,M
NFRDI/KOREA	INCHON888	Yellow Sea	2001/06/06 - 2001/06/12	B,D,H,M
HMO/JMA	KOFU MARU	North Pacific Ocean	2001/06/12 - 2001/07/25	B,D,H,M,P

AGENCY	SHIP	AREA	PERIOD	DATA TYPE
FF/NU	KAKUYO MARU	East China Sea	2001/06/25 - 2001/07/06	B
FF/NU	NAGASAKI MARU	East China Sea	2001/07/18 - 2001/08/10	B,H
NFRDI/KOREA	TAMGU 3	East China Sea	2001/07/31 - 2001/08/07	B,D,H,M
NFRDI/KOREA	INCHON888	Yellow Sea	2001/08/03 - 2001/08/09	B,D,H,M
NFRDI/KOREA	TAMGU1	East China Sea	2001/08/12 - 2001/08/25	B,D,H,M
NFRDI/KOREA	TAMGU 5	Japan Sea	2001/08/15 - 2001/08/30	B,D,H,M
HD/JCG	KAIYO	North Pacific Ocean	2001/09/01 - 2001/09/07	D,H
FF/NU	NAGASAKI MARU	East China Sea	2001/09/18 - 2001/10/12	D,H,G
HMO/JMA	KOFU MARU	North Pacific Ocean	2001/09/27 - 2001/10/30	B,D,H,M,P
HD/JCG	TAKUYO	North Pacific Ocean	2001/10/03 - 2001/10/23	D,H
NFRDI/KOREA	TAMGU 3	East China Sea	2001/10/12 - 2001/10/22	B,D,H,M
NFRDI/KOREA	INCHON888	Yellow Sea	2001/10/13 - 2001/10/20	B,D,H,M
NFRDI/KOREA	TAMGU 5	Japan Sea	2001/10/16 - 2001/10/25	B,D,H,M
FF/NU	NAGASAKI MARU	East China Sea	2001/10/24 - 2001/11/01	B,H
NFRDI/KOREA	TAMGU 3	East China Sea	2001/11/08 - 2001/11/18	B,D,H,M
HMO/JMA	KOFU MARU	North Pacific Ocean	2001/11/16 - 2001/12/10	B,D,H,M

B:Biology & Fisheries
D:Physical Oceanography(Current)
G:Geology & Geophysics
H:Physical (Salinity & Temperature) & Chemical Oceanography
M:Meteorology
P:Contamination

Table 1-2 Number of Archived Data in the WESTPAC Region

YEAR	BOTTLE	STD	CTD	XBT	DBT	GEK	DRIFT
1979	7,969	47	1,282	8,896	672	5228	315
1980	8,750	675	1,014	11,640	2,311	6219	388
1981	7,835	134	1,976	9,257	2,431	5987	423
1982	8,236	214	2,011	11,202	3,076	6041	281
1983	7,842	368	3,584	12,433	3,221	6022	253
1984	6,284	3	4,193	12,524	3,872	7059	170
1985	5,099	463	4,949	16,101	3,557	5471	152
1986	8,309	269	5,091	18,137	2,366	5793	126
1987	9,635	232	6,785	17,990	1,700	4972	88
1988	9,810	0	9,721	20,181	877	2811	383
1989	8,201	0	11,521	18,730	475	1624	433
1990	9,006	328	11,652	22,702	1,093	871	443
1991	7,071	0	13,231	22,775	1,405	841	495
1992	5,246	105	14,463	25,237	18	216	371
1993	4,480	119	14,815	37,201	1,332	152	155
1994	2,169	128	1,439	30,158	193	24	0
1995	1,952	0	1,683	40,204	115	97	0
1996	2,030	0	1,717	27,505	208		
1997	2,091	0	1,701	6,379	242		
1998	1,952	0	1,484	7,573	178		
1999	856	0	705	8,681	182		
2000	771	0	758	5,007	155		
TOTAL	125,594	3,085	115,775	390,513	29,679	59,428	4,476

1.2 RNODC for IGOSS

(1) Data Management Status

JODC has been playing as RNODC for IGOSS since September 1979 with the USA and Russia.

The terms of reference for RNODC for IGOSS are introduced in Annex II.

JODC receives BATHY/TESAC data through the GTS (Global Telecommunications System) from JMA (Japan Meteorological Agency), which is one of SOC (Specialized Oceanographic Center), and applies quality control procedures for final archiving.

Data holding status is shown in Fig. 2.

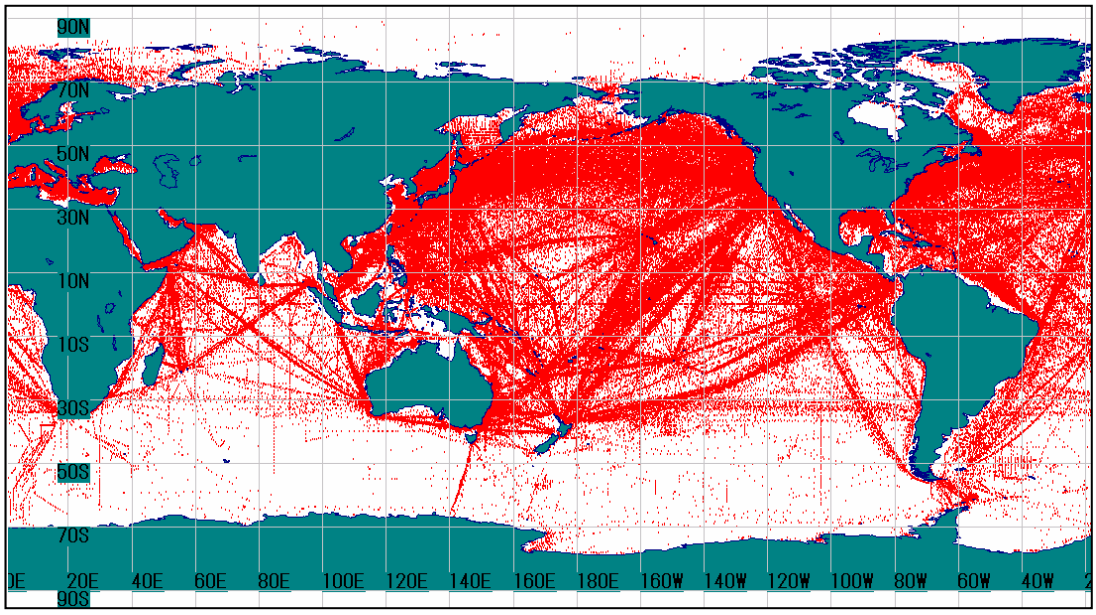

Fig. 2 Station Plots for BATHY/TESAC

(2) Recent Topics on IGOSS

The Integrated Global Ocean Services System (IGOSS) is the international operational system for global collection and exchange of oceanic data, and the timely preparation and dissemination of oceanographic products and services. The Intergovernmental Oceanographic Commission (IOC) and the World Meteorological Organization (WMO) cooperate in the planning and implementation of IGOSS. The operation of IGOSS is based on national efforts and depends on the full support of all IOC & WMO member states. The timely dissemination of telecommunicated data and/or products depends mainly on the facilities of the GTS, of the World Weather Watch (WWW), and of the WMO.

The WMO Marine Program has traditionally been the responsibility of the Commission for Marine Meteorology (CMM), with strong links to IOC and related programs. However, the Thirteenth Congress of WMO (Geneva, May 1999) and the 20th IOC Assembly (July 1999), following on recommendations of the Executive Councils of both IOC and WMO, and recalling that many areas of close collaboration already existed between WMO and IOC, agreed that a Joint IOC/WMO Technical Commission for Oceanography and Marine Meteorology (JCOMM) should be established with the status and responsibilities of a WMO Technical Commission and IOC Committee. JCOMM replaces CMM and the Joint Committee for IGOSS and acts as a reporting and coordinating mechanism for the full range of existing and future WMO operational marine activities.

(3) Outline of BATHY/TESAC data

The program for the collection and exchange of BATHY and TESAC data was initiated as a pilot project on January 15, 1972 and became fully operational in June 1975 as the BATHY/TESAC Operational Program. It involves the global collection and exchange of ocean temperature, salinity, and current data observed from merchant ships, research vessels, Ocean Weather Stations (OWS), ocean data buoys, offshore platforms, coastal stations and aircraft, and other platforms. The incorporation of new technological developments will enhance the implementation of this program.

Information used to create the BATHY/TESAC message is stored digitally and prepared in the correct format for transmission via satellite to shore. The full resolution profile or higher-time resolution surface observations are recorded on magnetic media by a computer. The recorded data are often sub-sampled to create the BATHY/TESAC message and subsequently sent ashore. When the platform returns to port, the magnetic media with the full resolution data would be forwarded to the country's National Oceanographic Data Center (NODC) or other agency willing to handle the data.

(BATHY: Bathythermograph report, TESAC: Temperature, Salinity, Current report)

1.3 RNODC for MARPOLMON

In response to a recommendation by the United Nations Conference on the Human Environment (Stockholm, 1972), the IOC and WMO agreed to jointly undertake the design, planning, and development of a marine pollution-monitoring program.

As an initial step in this direction, a Pilot Project on Marine Pollution (Petroleum) Monitoring (MAPMOPP) was launched in 1975 within the framework of the Integrated Global Ocean Station System (IGOSS) and was aimed at monitoring petroleum-derived oils.

Bearing in mind the recommendations of the IOC Scientific Committee for the Global Investigation of Pollution in the Marine Environment adopted at its Sixth Session (Paris, 25 September - 1 October 1986) on the regional relevance to marine pollution management activities, RNODC for MARPOLMON have been established in Japan for the WESTPAC region, in the USA for the Caribbean region, and in the Russian Federation for the Atlantic, Mediterranean and Baltic Seas.

The terms of reference for RNODC for MARPOLMON are introduced in Annex III

The major activities of the JODC are the collection and management of four types of data: oil slicks, tar-ball, beach tar, and hydrocarbon, since 1975. Data holding status is shown in Table 3 and Fig.3.

Table 3 Number of Archived Data for MARPOLMON

YEAR	BEACH TAR	TAR BALL	HYDRO CARBON	OIL SLICK
1973	0	328	0	0
1974	0	227	10	1,493
1975	404	1,029	158	16,712
1976	799	1,045	240	16,236
1977	740	730	387	19,683
1978	665	593	380	22,580
1979	676	381	320	14,699
1980	581	519	481	5,988
1981	570	522	409	3,948
1982	588	489	440	1,122
1983	560	603	399	584
1984	588	440	187	277
1985	582	474	300	382
1986	624	565	151	865
1987	638	627	129	1,015
1988	653	513	124	1,492
1989	679	580	87	1,948
1990	650	547	83	1,674
1991	647	481	86	1,286
1992	634	447	71	1,215
1993	618	438	72	991
1994	588	377	62	1,221
1995	583	415	54	1,517
1996	0	238	72	1,413
1997	0	148	88	1,783
1998	0	90	36	2,152
1999	0	95	65	1
Total	13,067	12,941	4,891	122,277

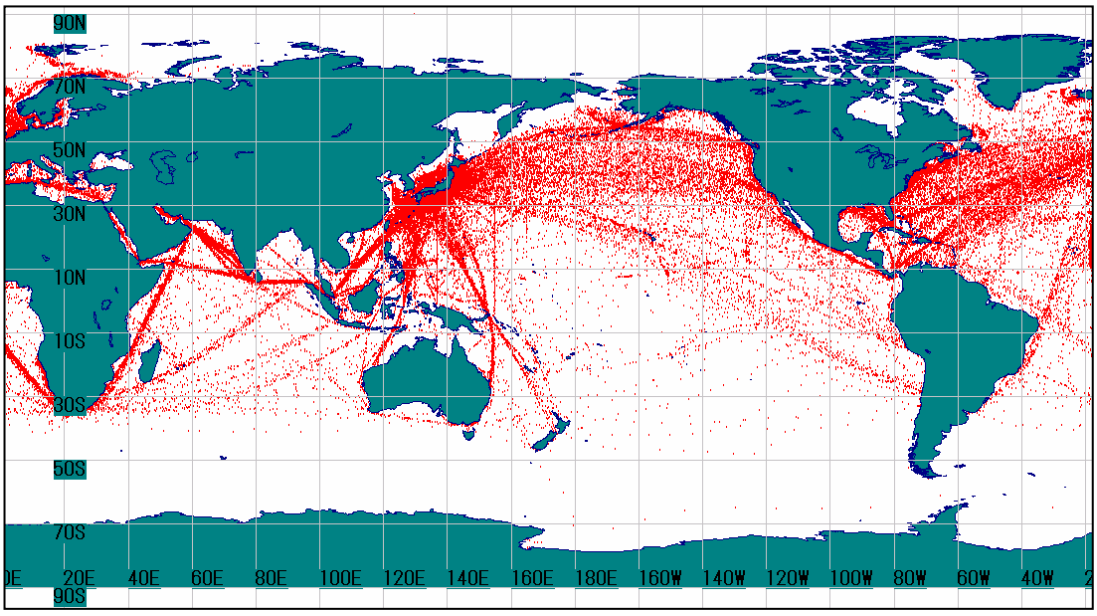

Fig. 3 Station Plots for Oil Slick

1.4 RNODC for ADCP

The JODC is RNODC for ADCP since 1991 and World Ocean Circulation Experiment (WOCE) Data Assembly Center (DAC) for Shipboard ADCP in cooperation with the University of Hawaii since 1995.

The terms of reference for RNODC for ADCP are introduced in Annex IV.

The major activities of the JODC are the collection and archiving of data and the development of the methodology of ADCP data management, plus development and usage of the ADCP data management system on the database of the JODC. Data holding status is shown in Table 4 and Fig.4.

Table 4 Number of Archived Data for ADCP

YEAR	ADCP	YEAR	ADCP
1985	3,545	1995	475,570
1986	7,849	1996	852,094
1987	9,681	1997	588,922
1988	15,456	1998	557,203
1989	64,814	1999	450,798
1990	72,799	2000	175,300
1991	58,652	2001	7,456
1992	79,060		
1993	127,629		
1994	49,046	Total	3,595,874

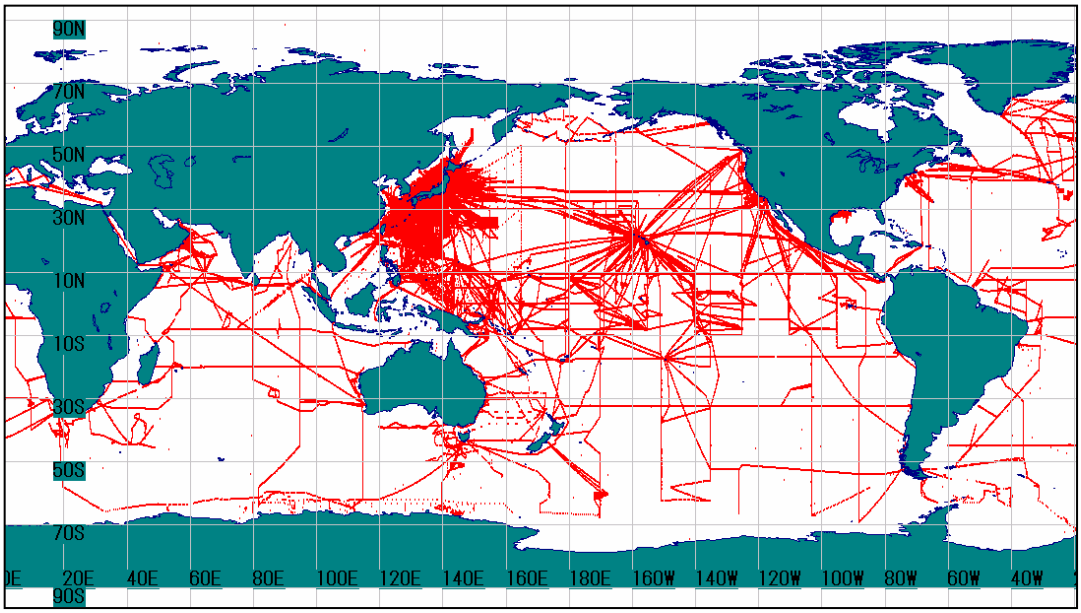

Fig. 4 Station Plots for ADCP

2. Topics in JODC

2.1 Introduction of Received Data;
Oceanographic Data Observed by Japan Fishery Agency

Every year, the JODC regularly receives oceanographic observation data from the Japan Coast Guard, Meteorological Agency, Fisheries Agency, Defense Agency, etc., which are Japan's major ocean surveying agencies.

In addition, in 2000, it received the following data in a set from the National Research Institute of Fisheries Science. These data will be made public from June 2002.

- Surveying organizations:
  Seven National Fisheries Research Institutes and Prefectural Fisheries Experimental Stations
- Observation period: 1963-1993 (31 years)
- Areas covered: Pacific and Japanese coastal areas
- Survey items:
  Water Sampling Data, STD, CTD, Current, pH, Color of Sea, Transparency, etc.

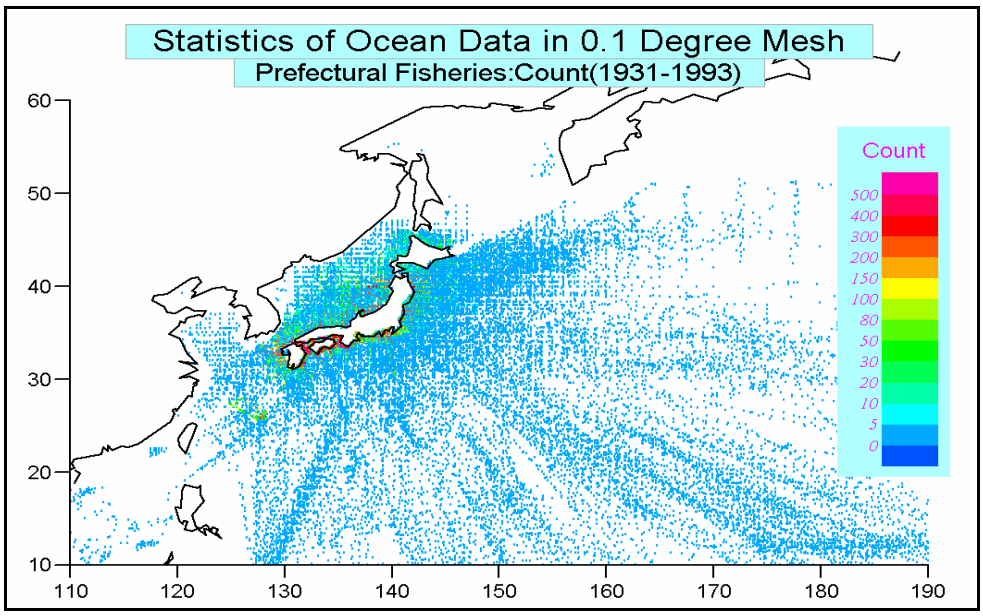

Fig. 5 Data Distribution of JFA Observation Data

2.2 Products from JODC

(1) Gridded Bathymetry Dataset around Japan "JEGG-500 (JODC-Expert Grid Data for Geography)"

JODC manages and serves several kinds of bathymetric data, with the representative ones being the MGD77 and J-BIRD (JODC Bathymetry Integrated Random Datasets).

However, the bathymetric data in these data sets suffers from error depths and accuracy discrepancies with respect to measurement of position and depth.

The Hydrographic Department, JCG had archived a 15-year quantity of multibeam bathymetric data. Although the measurement accuracy and density were high, there were numerous errors.

The department has removed errors from this voluminous quantity of data and has compiled only the quality-controlled data in order to prepare a dataset that is easy to use. The processes that have been carried out include interpolation of the absent data, and correction of bathymetric data that were not made correction of sound-velocity. The processed data has been circulated as a 500m meshed dataset on Lambert's conformal conic projection.

a) Data file structure

The data files are divided into the following three areas:

File Name	Area
Area1_wgs84.dat	Lat. 34° N ~ 46° N, Long.135° E ~ 148° E
Area2_wgs84.dat	Lat. 30° N ~ 38° N, Long.128° E ~ 144° E
Area3_wgs84.dat	Lat. 24° N ~ 30° N, Long.122° E ~ 132° E

b) Data format

Then data files are described by ASCII character with following format;

I1, FI0.5, F10.5, I6 [0 or 1, Latitude (deg.), Longitude (deg.), Depth (m)]

Notes: "0" is the measured depth, and "1", the compensated depth.

c) Index information

The data distribution charts for the three areas have been prepared, so that the data quality of the necessary spot can be inferred from the charts.

(2) New Edition of the JODC Taxonomic Code

a) Codification of marine biota by JODC

In 1985, the JODC began the construction of a “Marine Biological Data Management System” that can manage and serve with marine biological data using computer. This system has been in operation since 1987. Marine taxonomic codes were created for quick computer processing of the marine biological data collected and were managed by digitalizing by species.

b) Outline of the marine taxonomic codes

JODC first attempted to register and codify the organisms broadly classified as planktons and observed in the sea areas around Japan. This project covered protozoa excluding claspers and fungi, prokaryotes, plant kingdom, and fish. These were classified by determining the classification standards of marine organisms (planktons) with the advice, discussion, and examination by Japanese experts from university and research institutes, etc., and by determining 1) the 14-digit Taxonomic Codes in line with each specie's classification (phylum, class, order, family, genus, species and subspecies), and 2) the 5-digit Name Codes for the individual names (standard Japanese names and scientific Latin names) of organisms. These codes have been determined to enable prompt search and supply of marine biological data collected and managed by the JODC.

c) The history and future of the marine taxonomic codes

These marine taxonomic codes were reviewed for the second time in 1995. In 1998, along with marine biological observation data, they were added to J-DOSS which is the JODC's oceanographic data and information service system, for search and supply through the Internet.

Since 1999, with the help of marine biological experts and researchers in Japan, the JODC has been updating the codes for the third revision and FY2001 edition of the JODC Taxonomic Codes (planktons). This was published in March 2002.

This edition has registered 8,100 species, an increase of 2,000 species compared to the 1995 second edition.

In digitalizing reports and observation charts, the use of two types of codes can be expected to reduce input errors and improve work efficiency. An additional advantage of using two codes is that if the species has different names, such as synonym names, the species can be searched using the taxonomic codes. This is also effective in speeding up computer processing.

In addition to collecting and managing marine biological data, and for the effective utilization of the marine taxonomic codes, the JODC will examine codification of benthoses and their integration with the plankton codes, to enrich the codification of marine organism.

2.3 JODC Online Data Service System (J-DOSS)

In order to improve the user's availability on the JODC service, we have started to develop the JODC Online Data Service System (J-DOSS) since 1994. This system has been realized that user retrieve the data directly from the database system in JODC through the Internet with various keywords, such as location, data type, name of research vessel etc.

We have been continuing to improve J-DOSS. Presently, the data and information types provided by J-DOSS are counted 17 items as followings,

Table 6 Data & Information Types Provided by J-DOSS

OCEANOGRAPHY

- Serial Station Data
- CTD Data
- BT Data
- Statistics Values of Temperature in 1 Degree Mesh size
- Statistics Values of Salinity in 1 Degree Mesh size
- Ocean Surface Current Data
- Shipboard ADCP Data
- Statistics Values of Ocean Current in 1 Degree Mesh size
- Sea Level Data
- Statistics Values of Sea Level Data
- Moored Current Meter Data

GEOPHYSICS

- Grid Sea Depth

BIOLOGY

- Marine Organisms Data

INFORMATION

- National Oceanographic Program
- Cruise Summary Report
- Information on Instrument fixed on Seabed
- IOC Documents
- Oceanographic Abbreviation

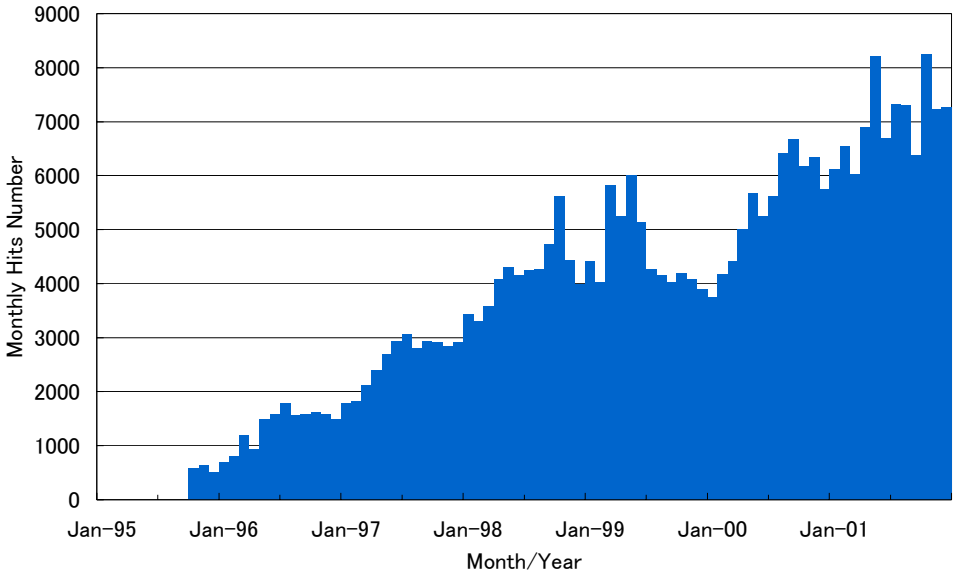

Fig. 6 Time Series of Monthly Hits of the JODC Homepage

2.4 IODE Regional Coordinator for WESTPAC

At the 15th session of the IOC committee on IODE, establishment of regional coordinator was resolved in order to effectively and more lively utilize the IODE system of IOC regional programs. Based on the resolution of the session, the system of IODE Regional Coordinator was established mainly for the objectives

of accelerating infiltration of the IODE activities and policies in eight regions in the world. The Director of JODC accepted the request from IOC for assumption of the IODE Regional Coordinator for WESTPAC in1997. The terms of reference for IODE Regional Coordinator has revised, and strengthening of the Regional Coordinators Mechanism was recommended at the IODE-XVI meeting held in Lisbon, Portugal, November, 2000. The terms of reference for IODE Regional Coordinator are introduced in Annex V.

In 2001, in order to survey oceanographic research and data management activities in the region, Mr. Toyoshima visited oceanographic research institutes and data center in Vietnam on behalf of the IODE Regional Coordinator for WESTPAC. His survey summary was introduced as following;

Report on Oceanographic Research and Data Management Activities in Vietnam

Institute of Oceanography (IO)

IO is located in Nhatrang City in mid-southern Vietnam and has a long history, having been established in 1922. With the establishment of the National Center for Natural Science and Technology (NCST) in 1993, IO came to belong to NCST, and two additional branches of IO were established in Hanoi and Haiphong. NCST is the same class of agency as the central government ministries, and has 17 institutes and other organizations.

IO has a staff of about 150, as well as an oceanographic museum and aquarium, library and small research vessel operating in coastal waters. IO is conducting research in physical, chemical, geological, and biological marine in the field of oceanography.

In oceanographic data management, IO has implemented a national project entitled "Establishment of the Vietnam Oceanographic Data Bank the Oceanographic Database of the South China Sea and Adjacent Waters" as a five-year project starting in 1996. In this project, oceanographic data management software "VODC (Vietnamese Oceanographic Data Center) for PC version 2.0" was developed and is being used for data processing and database construction. The second phase of the project started in 2001, and its sea area has 6,731 cruises of which 679 are Vietnamese.

Vietnam National Oceanographic Data Center (VNODC), Hanoi Institute of Oceanography

VNODC was established in 1985, and since June 1993 it has been located in Hanoi as a branch of the Institute of Oceanography (IO) as mentioned above.

VNODC is made up of 32 staff and the Department of Marine Data Management, Department of Remote Sensing & GIS and National Environment & Resource Information Center. It controls the data centers of the oceanographic institutes and carries out data exchange operations with domestic and foreign organizations.

Investigations of the oceanographic data kept by domestic marine research organizations have been carried out by the National Committee for IOC of Vietnam, and as a result, data catalogs have been submitted from these organizations. VNODC has supplied these organizations with the software "VODC for PC version 2.0" and requested them to make data files using it.

Center for Hydrometeorology of South Vietnam

This Center belongs to the Hydro Meteorological Service of Vietnam (HMS). With a staff of 31, it is surveying primarily the marine meteorological conditions in the coastal and river areas in southern Vietnam and providing information. There is another similar center in Hanoi, which is called Marine Hydrometerological Center.

HMS has a full-scale marine research vessel (length overall: 70 m, width: 13 m, draft: 4.2 m), which is also used for joint studies by researchers of various institutes.

2.5 GODAR-WESTPAC

The 16th Session of the IOC Committee on International Oceanographic Data and Information Exchange (IODE-XVI), held in Lisbon, Portugal in November 2000, adopted to promote the Global Ocean Data Archaeology & Rescue (GODAR) type project in the WESTPAC region (GODAR-WESTPAC). The draft work plan of the project is outlined in Annex VI.

The GODAR project was established by the IOC in 1993 in order to save oceanographic data from the risk of loss by degradation of recording media or by disaster, etc., and also to increase the volume of historical data available to climate change and other research. The large volume of data is collected through the program under the cooperation of IOC member states, and has been made available internationally, without restriction, via CD-ROM and online as the World Ocean Database by US-NODC/WDC-A.

However, as reported at the GODAR II, in Tianjin, China, 1994, there is a large amount of data still in manuscript form in the WESTPAC region.

The GODAR-WESTPAC project has been planed as a 5-year plan from 2001. We would like to actively promote the project in this region as RNODC-WESTPAC.

In order to start the project and to succeed, it is important to establish cooperation between the member states and related organizations and to get a common feeling. Therefore, JODC will hold the International Workshop for GODAR-WESTPAC at Japan Hydrographic Department in Tokyo, Japan from March 5-7, 2002 with support from the Ministry of Land Infrastructure & Transport in Japan. At the workshop, representatives from the countries in the region will report on the oceanographic research activities and data management status in each country, and discussions will be held on the draft work plan and the cooperation in the region.

3. International Projects and Meetings Participated in by the JODC

3.1 North-East Asian Regional GOOS (NEAR-GOOS)

NEAR-GOOS is a regional pilot project of GOOS in the North-East Asian Region, implemented by Japan, the People's Republic of China, the Republic of Korea and the Russian Federation as a WESTPAC activity. The goals of the NEAR-GOOS are as follows: i) to improve ocean services in the region; ii) to provide data and information useful in the mitigation of the effects of natural disasters caused by waves, storm surges, and sea ice; iii) to increase the efficiency of fishing vessels; iv) to provide information useful in pollution monitoring; v) to monitor parameters useful to mariculture, particularly regarding harmful algal blooms; vi) to provide information on the health of the coastal zone for recreation purposes; and vii) to provide datasets required for data assimilation, modeling, and forecasting.

JODC has operated Regional Delayed Mode Database (RDMDB) since October 1996, based on the recommendation of the first meeting of the NEAR-GOOS Coordinating Committee in 1996. The total volume of data received from Regional Real Time Database (RRTDB) operated by Japan Meteorological Agency (JMA) and various research institutes collected up until the end of November 2001 was approximately 3,500 MB. The types of data files handled by RDMDB totaled 24 as of November 2001. Since May 28, 1999, when the new system began operating, 14 organizations have registered. This brings the total number of registered organizations to 107 (Japan: 66, other countries: 41) when combined with those previously registered (as of December 2002). Last year the number of monthly accesses exceeded 400. The total number of times accessed surpassed 13,000 since October 1996. Moreover, the total number of data files downloaded reached 4,306 files as of December 2001.

The data holding status on the NEAR-GOOS RDMDB is indicated in table 7.

The Sixth Session of the IOC/WESTPAC Co-ordinating Committee for NEAR-GOOS was held on August 31, 2001 in Seoul. Mr. Sato from JODC participated in the session as a member of the committee. He is a successor of Mr. Nagai.

The committee discussed the procedure to formulate the medium-term NEAR-GOOS strategy plan, and subsequently agreed that separate working groups would be established in specific areas, namely (i) observation and data management and (ii) application, forecasting, and prediction.

Table 7. Data Type and Volume of NEAR-GOOS RDMDB *(as of May 2001)*

Type of Data	Description of Data	Data Volume
BATHY	Regional Data Sets of BATHY Report	8.3 MB
BATHY_G	Global Data Sets of Bathy Report	5.2 MB
BUOY	Regional Data Sets of BUOY Report	64.3 MB
BUOY_G	Global Data Sets of BUOY Report	354.7 MB
SHIP	Regional Data Sets of SHIP Report	96.4 MB
SHIP_G	Global Data Sets of Bathy Report	247.8 MB
TESAC	Regional Data Sets of TESAC Report	0.7 MB
TESAC_G	Global Data Sets of TESAC Report	14.2 MB
TRACKOB	Regional Data Sets of TRAKOB Report	0.4 MB
TRACKOB_G	Global Data Sets of TRACKOB Report	0.8 MB
SSTANL (JMA)	Grid Daily Sea Surface Temperature data in the Western North Pacific	97.3 MB
GLBSST (JMA)	Monthly Mean Sea Surface Temperature	0.5 MB
WNPSST (JMA)	10 days Mean Sea Surface Temperature	0.6 MB
ADJSUBS (JMA)	Monthly Mean Subsurface Temperature in seas around Japan (100m, 200m, 400m)	0.3 MB
SUBST	Sub Surface Temperature decoded at RRTDB	173.7 MB
SUBST_ ERROR	Sub Surface Temperature decoded Error Report	2.5 MB
PACSUBS (JMA)	Monthly Mean Subsurface Temperature in Pacific (100m, 200m, 400m)	2.0 MB
WIND	Wind decoded Data at RRTDB	46.9 MB
WIND_ ERROR	Wind decoded Error Report	0.4 MB
RYKOV/ FERHRI	Marine Meteorological observation data on board by FERHRI, Russia	2.5 MB
JAFIC	Sea Surface/Sub surface Temperature from JAFIC, Japan	17.4 MB
PALACE	Sub surface temperature profile observed by PALACE float operated by ORI, University of Tokyo, Japan	0.1 MB
TOHKU_Uv.	XBT data observed by Tohoku University, Japan	0.1 MB
30s*	30 sec interval tide data at the JCG tidal stations, Japan	1,678.0 MB
Total of Data Volume		2,837.8 MB

3.2 World Ocean Circulation Experiment (WOCE)

The World Ocean Circulation Experiment (WOCE) is an unprecedented effort by scientists from more than 30 nations to study large-scale ocean circulation.

The field phase of the project lasted from 1990-1997 and is now being followed by Analysis, Interpretation, Modeling and Synthesis (AIMS) activities, which will continue until the year 2002.

JODC has been the WOCE Data Assembly Center (DAC) for Shipboard ADCP data, which is co-located at the University of Hawaii. Its aim has been to compile the ultimate WOCE database as the final product, WOCE Global Data Set Version 3.0 with the WOCE Data Products Committee (DPC). Complete WOCE data will be available for use through the Internet and on disk. The disk edition of the WOCE Global Data Set, Version 3.0 will be available from World Data Center A for Oceanography, US-National Oceanographic Data Center in the USA. DPC adopted netCDF format for the dataset. Because the netCDF format is self-describing format, users will be able to have access without being conscious of the data format using many common application such as ncBrowse, Ferret, GMT, GrADS, IDL, and Matlab, etc. DPC has also considered users who may prefer to work with ASCII format, so the dataset will contain instructions and some programs for extracting ASCII format from the netCDF format.

The WOCE Global Data, Version 3.0 will be issued in time for the WOCE Conference in San Antonio, Texas, to be held November 18-22, 2002.

3.3 Joint Global Ocean Flux Study (JGOFS)

Report of JGOFS North Pacific Synthesis Group Meeting

The JGOFS North Pacific Synthesis Group (NPSG) meeting was held at the Victoria Conference Center, Victoria, Canada on October 13, 2001, with the participation of JGOFS-NPSG members, Dr. A. Bychkov (chair), Dr. T. Saino (vice-chair), Dr. A. Chen, and Dr. K. Denman, and as observers, Ms. S. Oguma and Dr. T. Suzuki from MIRC, Japan and Mr. N. Baba from JODC.

JGOFS NPSG discussed publication of a special issue on the synthesis of JGOFS North Pacific Process Study (NPPS) and of a CD-ROM dataset of JGOFS-NPPS.

The decisions made regarding the preparations for the CD-ROM publication of the JGOFS NPPS data are as follows:

- The CD-ROM dataset of JGOFS-NPPS is scheduled to be published in December 2003;
- JODC, as a host of JGOFS Data Management Office (DMO) in Japan, is to take charge of data assemblage and publication of the CD-ROM;
- The Japan JGOFS Data Management Advisory Group (DMAG) will help DMO in organizing and editing the dataset for publication;
- Datasets from each participating country in JGOFS NPPS are to be sent to JODC by the end of December 2002;
- The CD-ROM includes archived datasets utilized for JGOFS NPPS, obtained before the observation phase of JGOFS NPPS;
- The policy of the datasets will be fully open, including usage for commercial purpose.

Dr. A. Bychkov, who also serves as an executive secretary of PICES, remarked that PICES would cooperate in the activities on this dataset preparation.

As mentioned in the above, the NPSG discussed only a very rough plan; a detailed work plan will be made by the JGOFS in Japan in consultation with NPSG. The JODC would like to contribute to the oceanographic community for future studies on ocean biogeochemistry by providing high quality and comprehensive CD-ROM datasets on JGOFS NPPS. To make this possible, support and cooperation of the JGOFS researchers will be essential.

3.4 North Pacific Marine Science Organization (PICES)

PICES, the North Pacific Marine Science Organization, is an intergovernmental scientific organization that was established in 1992. Its present members are Canada, the People's Republic of China, Japan, the Republic of Korea, the Russian Federation, and the United States of America.

PICES 10th Annual Meeting was held at the Victoria Conference Center, Victoria, Canada from October 5-13, 2001. Mr. S. Sato and Mr. N. Baba from JODC attended this meeting. Mr. S. Sato is a successor of Mr. T. Nagai who was a member of the Technical Committee on Data Exchange (TCODE). Mr. N. Baba gave a presentation on JODC activities at the electric poster session.

In commemoration of this 10^{th} Annual Meeting, many joint sessions with the international research programs were held and the meeting was very successful.

The meeting of TCODE was held on October 10, 2001 and chaired by Mr. R. Brown.

TCODE was formed to 1) identify the data management requirements of PICES; 2) develop strategic plans to meet these requirements; 3) recommend establishment of ad hoc task groups to deal with specific functions of TCODE; 4) review the progress of task groups and provide annual reports to the Science Board on the work of TCODE; and 5) advise the PICES Secretariat on its data exchange activities.

There were reports and discussions on the following topics:

- Little activity was undertaken on the creation of an inventory of GLOBEC data collected in PICES;
- The status of the TCODE web page was discussed. Entries for the inventory of longtime series have been integrated into the Bering Sea Ecosystem Biophysical Meta-database maintained by NOAA/PMEL. The assistant TCODE member was requested to update the entries in this database;
- The TCODE Workshop on Data Management Methods and Issues for the 21st Century was cancelled due to travel problems for some of the organizers and participants;
- An Electronic Oceanographic Atlas of the Bering Sea, Okhotsk Sea and Japan Sea has been prepared by Dr. I. Rostov and co-workers. The oceanographic atlas also contains analyzed grid data. Support was requested for translation of the text material into English and publication of CD-ROM disks;
- Working Group 13 has been formed under the Physical Oceanographic Committee (POC) in order to 1) review the present level of knowledge on the processes controlling CO_2 in the North Pacific, and identify the gaps and problems; 2) review the existing methodology of the CO_2 measurements including the preparation of standards and reference materials, and advise on the inter-calibration and quality control procedures; 3) identify and encourage ongoing and planned national and international CO_2-related scientific programs in the North Pacific region, including long-term time-series observations; 4) identify available and suitable datasets on the oceanic CO_2 system, and recommend mechanisms of data and information exchange in coordination with TCODE; and 5) develop a symposium, workshop, or annual meeting session on the CO_2 study in the North Pacific. However, WG13 will be disbanded in 2002 after the publication of a final report.
  One of the results of the WG13 activities is shown as a web-based inventory of North Pacific CO_2 measurements. This contains inventory records for bottle data for 170 cruises, and underway carbon data for 194 cruises in the Pacific Ocean.
  The establishment of a new working group on CO_2 data integration was proposed. The committee noted the progress made on method inter-comparisons, metadata requirements and carbon data inventories by the WG13/TCODE team and were strongly supportive of taking the next step in data integration. This is an area in which PICES shows true leadership in the international arena.

The proposed new WG was adopted as Working Group 17 on Biogeochemical Data Integration and Synthesis at the 10th Annual Meeting.

The terms of reference of WG17 are indicated as the following:

1. Develop a North Pacific database for ocean CO_2 and related parameters in association with existing data centers. Advise data centers which of the available historical datasets should be assigned a high priority for acquisition and conversion to an electronically readable form.
2. Prepare a written guide of best practices for oceanic CO_2 measurements and data reporting. Carry out, as needed, inter-laboratory method comparisons to assure future measurement quality. Encourage the availability of suitable reference materials.
3. Develop a strategy to co-ordinate the planning of future North Pacific measurement programs to ensure optional use of resources to obtain appropriate temporal and spatial coverage, as well as maximum comparability with historical data. Efforts should be made to encourage timely availability of the “new” data.
4. Organize a symposium or an annual meeting session on the impact of climate change on the carbon cycle in the North Pacific.

3.5 General Bathymetric Chart of the Ocean (GEBCO)

GEBCO Meetings in Japan April 2001

GEBCO Meetings were held in Japan, April 17-25, 2001 for the first time in Asia.

14th Meeting of GEBCO Sub Committee on Undersea Feature Names (SCUFN) was held April 17-20 2001, and 18th Meeting of GEBCO Sub Committee on Digital Bathymetry (SCDB) was held April 18-21 2001. Both meetings were held at the Hydrographic Department, Japan Coast Guard, Japan.

And, 18th Meeting of Joint IOC-IHO GEBCO Guiding Committee (GC) was held April 23-24, 2001, 3rd Meeting of GEBCO Centenary Organizing Committee was held on April 24, and 1st Meeting of GEBCO Strategic Planning Committee was held on April 25, 2001. These three meetings were held in Kobe, Japan following SCUFN and SCDB.

23 people participated in these meeting from abroad 7countries and international organization such as International Hydrographic Organization (IHO).

"GEBCO" stands for General Bathymetric Chart of the Oceans. It covers the entire world, having 18 charts with a scale of 1/10,000,000. The GEBCO series bathymetric charts are the most authoritative in the world and are prepared through joint IOC and IHO projects. The charts have been revised several times, with the present edition being the fifth edition. The digital edition of the GEBCO charts has also been published as the GEBCO Digital Atlas (GDA).

The SCFUN meeting reviewed more than 550 proposals which had been submitted through its secretariat at the IHB. SCUFN eventually selected about 400 new names for inclusion in the GEBCO Gazetteer. Draft new editions of IHO-IOC Publications B-6 "Standardization of U.F.N" and B-8 "GEBCO Gazetteer of U.F.N." (presented in a new format) were also considered and approved by the Meeting. They will soon be published and posted on the IHO web-site.

The SCDB has been the power house behind GEBCO. Since the decision to exploit IT within GEBCO and the production of the GEBCO Digital Atlas (2nd issue in 1997), experts from around the world have contributed to the updating and improvement of the GDA.

With regard to new issue of the GDA, after several years of plans to issue a revision of the 1997 GDA, in Japan emphasis was put on ensuring that it would be issued in 2001. This issue will be a considerable advance on the previous issues.

Computer contouring of the gridded database will be compatible as far as possible with vector contours on the GDA. However there may well be differences in areas where the data is scarce. The gridded database will enable modelers to input the best available bathymetry and to manipulate the data more efficiently.

As part of its mandate the SCDB reviewed advances in contoured or gridded surveys from around the world and debated whether they could be available to GEBCO.

Contributions from the IOC-IBC series were considered for inclusion. Concern was expressed that these were not always easily available for GEBCO in spite of earlier agreement.

Many countries have undertaken extensive and intensive surveys of their own continental margins in relation to possible claims for an extended legal continental shelf under UNCLOS, and to assess resources in their EEZ. In some countries these data are not available pending legal decisions under UNCLOS and for security reasons. Potential commercial exploitation of the data has also restricted their availability.

When data have been made available, there have often been copyright constraints laid on GEBCO when they are incorporated, whereas in some countries freedom of information legislation insists that data are freely available on the Internet, whereas others recognize the constraints imposed by agreements where copyright is involved. Free access might prevent the acquisition of new data. This debate continues.

To celebrate the centenary of the initiation of the GEBCO program by Prince Albert 1st of Monaco in 1903, a conference on ocean mapping is being planned for April 14-16, 2003 in Monaco. This will be hosted by the IHB with the support of the Monegasque Government and the Palace.

In spite of the digital format of GEBCO products as CD-ROMs, there is still a demand for paper products

for display, for teaching and for publicity. However it is not realistic nor are funds available to repeat the conventional chart production method on the 5th edition. At the meeting, it was discussed to prepare on demand from digital –files to the customers need.

Discussions on the future of GEBCO in the Guiding Committee in Japan led to the formation of a GEBCO Strategic Planning Committee. The Committee will examine the fundamentals of the GEBCO program including what the users of today and tomorrow need, what participants can bring to the program, what role IT will play in the decades ahead, the organization of GEBCO within or outside IOC/IHO, funding issue, products to be prepared etc.

3.6 Intergovernmental Working Group on IOC Oceanographic Data Exchange Policy

The First Session of the Intergovernmental Working Group on IOC Oceanographic Data Exchange Policy was held in Brussels, Belgium, May 29 - 30, 2001 and was attended by 21 IOC member states, as well as by observers from ESA, EU, ICSU, IODE, SCOR and WMO. Dr. Angus McEwan chaired the meeting. Dr. Y. Michida, Ocean Research Institute, University of Tokyo, and Mr. S. Sato, JODC, participated in the meeting as representatives of Japan.

In view of the need for an IOC Oceanographic Data Exchange policy that will enhance implementation of the IOC programs and will further improve cooperation between member states, the Executive Council decided to establish this working group at its 33rd Session in 2000. The purpose of the working group is to discuss and assess existing agreements and practices, both within and outside IOC, with regard to the exchange of oceanographic and related environmental data and products, and then to draft a resolution that defines the future of this issue.

During its three days of deliberation the group reviewed the results of the ad hoc Group of Experts' (2000) discussions during the 33rd Session of the IOC Executive Council, the 16th Session of the IOC Committee on IODE, and were informed on the status of implementation of WMO Resolutions 40 and 25, as well as on the views of the ICSU on data exchange policy. The participating member states were also given the opportunity to provide information on national policies. The meeting then split into three sessional working groups: one dealing with the issue of a two-tier approach (as used by WMO Resolution 40, distinguishing between ‘essential’ and ‘additional’ data), and two dealing with the elements to be included in the revised policy statement. Reports of the groups were collated by the Chairman who prepared a composite statement for discussion. After substantial discussion, the First Session of the Intergovernmental Working Group on IOC Oceanographic Data Exchange Policy prepared a draft statement, “Towards an IOC Oceanographic Data Exchange Policy,” for submission to the 21st Session of the IOC Assembly.

“Towards an IOC Oceanographic Data Exchange Policy” is attached as Annex VII.

3.7 NOWPAP/1 Coordinating Working Group

The Action Plan for the Protection, Management and Development of the Marine and Coastal Environment of the Northwest Pacific Region (NOWPAP) was adopted at the First Intergovernmental Meeting (Seoul, September 1994), as one of the United Nations Environment Programme's (UNEP's) Regional Seas Programme. Its geographical scope covers the marine and coastal zones of the four countries of Northeast Asia: Japan, the People's Republic of China, the Republic of Korea, and the Russian Federation. The Fourth Intergovernmental Meeting (Beijing, April 1999) adopted the proposal for the second phase of the implementation of NOWPAP. Resolution 1 adopted at this meeting requested that the member states designate necessary members for participation in the NOWPAP/1 (Establishment of a Comprehensive Database and Information System) Coordinating Working Group. The Coordinating Working Group is composed of two

experts from each NOWPAP member state. In order to implement NOWPAP/1 activities, the Data and Information Network Regional Activity Center (DIN/RAC) was established in China.

The first meeting of NOWPAP/1 was held in Beijing, May 23-24, 2001. Mr. Sato from JODC participated in the meeting as a member of the Coordinating Working Group.

The meeting included discussions on the technical arrangement and work plan for the Coordinating Working Group. The terms of reference of the Coordinating Working Group was adopted. And, in view of the terms of reference, the Coordinating Working Group agreed that UNEP will request that the NOWPAP focal points in each state reconsider, and if necessary, re-nominate the country representatives to the NOWPAP/1 Coordinating Working Group. The meeting adopted a work plan and budget for the next biennium (2002-2003). DIN/RAC will design the Internet network of NOWPAP and prepare the web site of the NOWPAP/1 by the time the next meeting convenes. DIN/RAC will also prepare the draft of NOWPAP guidelines and policy on data sharing by the next meeting.

3.8 Fifth IOC/WESTPAC International Scientific Symposium

The Fifth IOC/WESTPAC Scientific Symposium, entitled “Ocean Science at the Dawn of a New Millennium,” was held at the Seoul National University Hoam Convention Center in Seoul, August 27-31, 2001. IOC and the Ministry of Maritime Affairs and Fisheries of the Republic of Korea organized the symposium.

Approximately two hundred marine scientists from 15 countries participated in the symposium. The symposium consisted of sessions of keynote speeches and nine other themes: Ocean Dynamics and Climate, Marine Pollution and Monitoring, Marine Ecosystem Dynamics, Marine Geology and Sediment Dynamics, Harmful Algal Bloom, Atmospheric Inputs to the Marine Environment, NEAR-GOOS Ocean Environment Forecasting, Regional Graduate School in Oceanography, and First Implementation Planning Meeting for the Establishing of SEA-GOOS.

Mr. Sato from JODC participated in the symposium and presented an oral report on the recent activities of the JODC.

3.9 The Fifth Environmental Management of Enclosed Coastal Seas (EMECS) Conference

The Fifth Environmental Management of Enclosed Coastal Seas (EMECS) Conference was held, November 18 - 22, 2001 in Kobe Japan, and was hosted by the Ministry of the Environment, Hyogo Prefecture and Kobe City. In this conference, the JODC presented its recent activities and the progress it has made in the area of marine biological data management.

The first EMECS conference was held in Kobe in 1990 with the theme of protecting the environment of enclosed coastal areas in the world. Subsequently, the conference has been held in various parts of the world every two years (with the second one in Baltimore, USA, the third in Stockholm, Sweden, and the fourth in Antalya, Turkey). The fifth conference returned to Kobe.

Presentations of research reports and discussions were actively carried out regarding the goal of conserving the enclosed coastal seas for the next generation with five subcommittees.

JODC has not presented reports or made releases in past conferences. It participated in the conference for the first time in this fifth conference. In one of the subcommittees, entitled “Roles of Monitoring and Environmental Information on Coastal Areas,” the JODC presented its Internet-based oceanographic data and information service system (J-DOSS) as well as the fiscal 2001 edition of the JODC Taxonomic Codes (planktons). In the discussions, JODC answered questions concerning the method of use of J-DOSS and the

merits and advantages of marine biological data codification. This turned out to be a good opportunity to publicize JODC activities. It was confirmed the importance of JODC continuing its activities as an oceanographic data and information collection, management and service center, and for JODC to actively participate in conferences such as this. It was also confirmed the necessity of JODC and the need to further enrich oceanographic data and information.

ANNEX I

Terms of Reference for RNODC-WESTPAC (24 February 1979)

- Produce a work plan to define i) the procedures of JODC in acquiring, processing, reformatting and archiving, distribution of data, and inventory of research cruises in the WESTPAC region with reference to the WDC system and ii) the implementation of this work plan;
- Provide a mechanism for registration of WESTPAC cruises with RNODC-WESTPAC;
- Work closely with national coordinators for IODE and any other national contact points for data management within WESTPAC who might be appointed by member states;
- Publish a guide for WESTPAC data management for distribution to member states through national contact points.

ANNEX II

Terms of Reference for RNODC-IGOSS (September 1979)

- Acquire BATHY, TESAC datasets and sub-surface temperature data from drifting and moored buoys from the IGOSS Specialized Oceanographic Center (SOC) for areas of responsibility;
- Apply supplementary quality controls to acquired data, and provide services to users after 30 days from receipt of that data;
- Archive, and make available to users, selected data products from SOCs and analysis centers;
- Acquire non-operational BATHY, TESAC, and sub-surface temperature data from drifting and moored buoys and/or datasets for areas of responsibility;
- Apply quality controls to non-operational data, prepare integrated datasets, and provide services to users;
- Provide for exchange of IGOSS data in GF-3 format with other RNODCs or to other users as requested;
- Maintain a database and inventory for areas of responsibility;
- Prepare products based on operational and non-operational IGOSS data, as appropriate;
- Annually transmit to the WDCs datasets in GF-3 format, inventories and selected data products;
- Prepare summaries and BATHY, TESAC, and sub-surface temperature from drifting and moored buoys database plots, and transmit to the IOC Secretariat every 15 August and 15 February for data received during the previous 6 months;
- Participate in efforts to monitor data flow;
- Participate in IOC training programs, as feasible;
- Provide, wherever possible, for exchange of documentation and software regarding quality control and processing procedures, with other RNODCs.

ANNEX III

Terms of Reference for RNODC-MARPOLMON (3May 1987)

A. Referral

The RNODC-MARPOLMON will:

- Provide a referral capacity to worldwide holdings of marine pollution data.

B. Access

The RNODC-MARPOLMON will be expected to demonstrate:

- A capability and willingness to perform automated data processing functions for marine pollution data;
- A willingness to accept marine pollution data which may not be received in automated form, and to

convert the data to such a form;
- A capability for performing quality control (format and/or environmental) checks;
- A capability to work with discipline-oriented codes (biological and chemical);
- A capability for converting marine pollution data to GF3 format or other internationally recognized format.

C. Products

The RNODC-MARPOLMON will:
- Provide copies of processed data to World Data Centers A and B (Oceanography);
- Provide machine listings and simple statistics of marine pollution data;
- Produce graphics of marine pollution data, for usage by concerned member states.

D. Training

The RNODC-MARPOLMON will conduct formal or informal training sessions for data center personnel involved in the program and who actively submit marine pollution data. Expenses of trainees will not, however, be borne by the RNODC concerned. Selection of trainees will be jointly arranged by the IOC and RNODC.

ANNEX IV

Terms of Reference for RNODC-ADCP (27 June 1991)

- Compile, evaluate and keep updated information on existing datasets held by member states already active in ADCP measurements;
- Produce, and keep updated, a catalogue of ADCP users which will include information about ADCP instruments, related instrumentation (GSP, Loran, measurement of ship motion, etc.), procedures for averaging and sampling (temporal and spatial, vertical and horizontal), quality control methods, formats and products;
- In consultation with other NODCs, ICES and SCOR, establish and maintain standards and procedures for the reduction, quality control, archiving, and exchange of ADCP data;
- Assemble an archive of ADCP data received from other member states so as to assess the effectiveness of the proposed standards and procedures;
- Prepare guidelines concerning different performance characteristics and data documentation relevant to each instrument type in order to formulate adequate data documentation and quality control procedures;
- Report on the progress of RNODC ADCP to the Group of Experts on RNODCs and Global programs and to the IOC Committee on IODE.

ANNEX V

Terms of Reference for IODE Regional Coordinator (rev. November, 2000)

- Carry out actions targeted to strengthening co-operation in the area of marine and coastal data and information management in the regions with a view to meeting the user needs effectively. This includes advising the existing NODCs within the region on new developments within the IODE system and helping to establish national data and information management systems including NODCs in the countries where the infrastructure has not yet been developed;
- Promote communication and collaboration between the data and information centers in the region, and exchange experiences with other regional coordinators;
- Establish links with the IOCs and other relevant regional and global science and services programs in order to be informed about on-going activities and keeping them informed of IODE developments;

- Liaise, at the regional level, with the relevant subsidiary bodies of IOC in order to promote the IODE system, services, and products to the widest possible audience;
- Support the efforts of the IODE Officers and the IOC Secretariat in implementing the fundraising process in the regions;

ANNEX VI

Draft Work Plan of GODAR-WESTPAC

1. INTRODUCTION

The Global Ocean Data Archaeology and Rescue (GODAR) program has been established by the Intergovernmental Oceanographic Commission (IOC) in 1993 in order to save oceanographic data from a risk of losing by degradation of recording media or disaster etc., and to increase the volume of historical data available to climate change and other researches. The workshops related the program were held in each region to promote the project.

The large volume of data showed as followings, are collected at US-NODC/WDC-A through the program under the cooperation of the IOC member states,

- 2.0 million temperature profiles;
- 120,000 Chlorophyll profiles;
- 600,000 plankton taxa.

These data have been made available internationally without restriction via CD-ROM and on-line as World Ocean Database 1998 by US-NODC/WDC-A.

However, there are many data that were reported at the GODAR II, in Tianjin, China, 1994, still in manuscript form in this region.

The importance of promoting the GODAR program in the region was recognized again at the International Conference for the International Data & Information Exchange in the WESTPAC region 1999 (ICIWP'99) held in Langkawi, Malaysia, Nov. 1999. And ICIWP'99 recommended the establishment of a working group chaired by the representative from Malaysia in order to start a GODAR type project in the WESTPAC region. This paper describes a work plan to support the development of the GODAR type project according to the recommendation of ICIWP'99.

2. PURPOSE

The project aims to locate, rescue and make available marine data from the WESTPAC region that is in danger of being lost. Data that is stored on paper or on old media and is not presently available to the WESTPAC scientists will be sort for this project. Work will be undertaken to digitise the data or re-write the data onto modern media in an effort to safeguard it for future use. The data will also be quality controlled and then made available.

3. PROJECT AREA

The project target area is the WESTPAC region; with a specific focus on the Southeast Asian region.

4. PROJECT TERM

It is anticipated that the project will run over a period of five years.

5. DATA TYPES

The project will focus on the data types that are exchanged routinely within the IODE system, especially focussing on the following data,

- Hydrographic casts including all chemical and biological observations,
- Salinity/Conductivity Temperature-Depth casts,

- Expendable Bathythermograph casts,
- Mechanical Bathythermograph casts

6. WORKING GROUP

The project will establish a working group to develop a work plan and to evaluate the progress of the project. The working group will consist of the IODE coordinators from in the region, and from agencies participating in the project.

7. PROJECT OFFICE

A Project Office will be located at a National Oceanographic Data Centre from within the region. The Project Office will develop a web site to promote the project, providing information on the projects activities and results.

8. BROCHURE

The Project Office will publish a brochure describing the GODAR activities in the region as a mechanism to promote the project within ocean research institutes of the region. The brochure will also include information on the full range of IODE activities to help promoting the IODE program in this region.

9. INFORMATION RELATED TO MARINE RESEARCH INSTITUTES

The Project Office will collect information on the various marine research institutes in the region. Much of this information will be collected using the IODE's metadata system – MEDI and will be made available on the project's web site.

10. INFORMATION ON DATA LOCATED

The project office will collect information on data that is in need of 'rescue' also using the MEDI software. This will assist in the development of priorities for the data rescue process. Details of these data sets will also be made available on the project's web site.

11. CHECK OF DUPLICATION

It is important that duplication of effort should be avoided and every effort will be made to ensure that the data identified for rescue has not already been digitised. This will require close cooperation with other IODE centres and the World Data Centres.

12. COLLECTION OF DATA

The project office will identify data from the previously mentioned location processes and will attempt to obtain this data from the researchers or institutes through the IODE coordinator or directly. Information on the data acquired for digitisation will be presented on the web site.

13. DIGITISING OF DATA

It is anticipated that assistance with the digitisation of the paper-based data will come from NODC's and DNA's within the region. It is anticipated that:

1) If NODCs or DNAs are able to digitise other country's data, they inform the project office. So that, the project office will make arrangement for data digitising plan.
2) NODCs and DNAs may send the digitised data to the project office. The project office will inform users via the web site that new data is available.

14. DATA POLICY

The data gathered by the project will be made available to users according to the IODE data policy, "Full and Open Sharing".

15. TECHNICAL COOPERATION

It is anticipated that the developed countries in the region will provide technical assistance to the developing countries for this project. The assistance will be based on existing cooperative schemes and training courses and provide a transfer of technology. One area of support that will be investigated is the provision of equipment to countries to assist with the digitization of rescues data. Other equipment such as CD-ROM drives to provide access to rescued data sets are also an option.

16. SEMINAR

At the end of the project, a seminar will be held in order to:

- Evaluate the success of the project and establish a follow-up plan.
- Share new knowledge and products from the project among the IODE data centres, coordinators and marine researcher community.

After the seminar, the coordinators will be expected to disseminate the results of the project in own countries.

17. ESTIMATED COST AND TIME FRAME

The estimated cost and time frame of the project are indicated as following,

	2000	2001	2002	2003	2004	2005	COST	Possible Sources
Establishment of WG	✓							
Establishment of Project Office		✓						Donor
Establishment of Web page		✓						Project Office
Brochure		✓					US$2k	IOC or PO
Information Collecting		✓	✓	✓	✓	✓		Donor & PO
Data collecting		✓	✓	✓	✓	✓		Donor & PO
Digitising & QC			✓	✓	✓	✓		Donor & PO
Training		✓	✓	✓	✓	✓		IOC & Donor
Product						✓		Donor & PO
Seminar						✓	UD$20k	IOC & Donor

ANNEX VII

Towards an IOC Oceanographic Data Exchange Policy

The Intergovernmental Working Group on IOC Oceanographic Data Exchange Policy, at its First Session, noted the needs of Member States to:

(i) Provide free and open access[1] to data[2] that are collected, produced or exchanged as part of programmes conducted in association with IOC;

(ii) Freely contribute data and metadata from all sources to the IOC/IODE system to gain maximum benefit from the coordination of observing systems and the integration of data gathered, creating a truly global observing network in order to contribute to monitoring and forecasting the present and future state of the planet;

(iii) Submit to the appropriate IOC/IODE data centres or suitable national archive linked to the IOC/IODE system, all publicly funded data and encourage the submission of data that may have a withholding period or other restrictions, with minimal delay;

(iv) Where restrictions need to be applied on access to nationally acquired data relevant to IOC

[1] Freely and openly accessible means being made at available without restriction at a charge no more than the cost of reproduction and delivery.

[2] 'data' consists of observation data, derived data and gridded fields

programmes, submit all metadata to the appropriate IOC/IODE data centre or suitable national archive linked to the IOC system, to facilitate the exchange of metadata and to expedite its rapid inclusion in international inventories;

(v) Assist in building national capacity to manage oceanographic data and information and to develop relevant products and services.

The Intergovernmental Working Group on IOC Oceanographic Data Exchange Policy, at its First Session, recommended that the following 'elements' be adopted as a basis on which the oceanographic data exchange and archival policy of the IOC will be formulated:

(i) All oceanographic data and their metadata which are capable of contributing to the beneficial public use and protection of the ocean environment, resources, protection of life and property and for the prediction of weather and climate shall be freely and openly[1] accessible;

(ii) The IOC should promote, through its programmes and Member States, the reciprocal value and benefits of free and unrestricted exchange of data and metadata;

(iii) Data available from IOC programmes should have no re-export restrictions;

(iv) Data and metadata should not be delayed or withheld deliberately and arrangements for their timely transmission should be implemented using the most appropriate technology;

(v) The IOC/IODE system of data centres should be developed as the main repository for the long-term preservation of data, metadata and related information. Data collected by IOC programmes should be preserved by IOC/IODE data centres and are provided with the understanding that (i) will apply;

(vi) Member States shall work to enhance the capacity in developing countries to participate and benefit fully from the exchange of oceanographic data and products through IOC's Training Education and Mutual Assistance (TEMA) programme and other mechanisms;

(vii) IODE, GOOS and (other) programmes of IOC will work with data contributors to ensure that data can be accepted into their systems and meet quality requirements;

(viii) IOC Programmes will, where appropriate, identify their requirements for data on which no conditions of access apply (in conformity with (i)) and also identify further data and products to be made available to which the originator may attach conditions.

The Intergovernmental Working Group on IOC's Oceanographic Data Exchange Policy, at its first session, recommended that all the above recommendations and content be regarded as informal working information with no official status, to be submitted for guidance to IOC Subsidiary, Technical Bodies, WMO, ICSU and other appropriate organizations and programs, and for review by the IOC Assembly. The response from these bodies will provide guidance for the further development of the Policy at a second session of the Intergovernmental Working Group.

FURTHER INFORMATION

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