INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION
(of UNESCO)

Eighteenth Session of the IOC Committee on International Oceanographic Data and Information Exchange (IODE-XVIII)
Oostende, Belgium, 26-30 April 2005

IODE NATIONAL REPORT ON OCEANOGRAPHIC DATA MANAGEMENT AND EXCHANGE FOR BRAZIL
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1. **Name of Data Centre:**

   **Banco Nacional de Dados Oceanográficos (BNDO)** is subordinate to Centro de Hidrografia da Marinha (CHM) / Diretoria de Hidrografia e Navegação (DHN) / Marinha do Brasil (MB) / Ministério da Defesa (MD).

   Brazilian National Oceanography Data Center is subordinate to Navy Hydrography Center / Directorate of Hydrography and Navigation / Brazilian Navy / Ministry of Defense

2. **National IODE Coordinator:**

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3. **Data Center Address:**

   Same as above

4. **Data Center URL:**

   [http://www.dhn.mar.mil.br](http://www.dhn.mar.mil.br)

5. **IODE Data Center Designation Date:**

   The Banco Nacional de Dados Oceanográficos (BNDO) was designed by decree since January 27th of 1971 (revised by January 5th 1994 decree) inside the Brazilian Navy which is responsible, throughout Hydrography and Navigation Directorate and Navy Hydrographic Center, for archive, control and disseminate all maritime data collected on Jurisdictional Brazilian Waters.

6. **Description of national data flow:**

   All National Oceanography data collected on Brazilian Jurisdictional Waters, by decree, must flow to end on BNDO. Universities and National and Foreign Institutions have one-year frame to send reports, metadata and data to BNDO. The BNDO works on to make a backup of data and metadata to populate a Relational Database and disseminate it back to the National Oceanographic community and COI/IODE system.
On Metadata management at discovery level BNDO do not participate in any program. At cruise level the National Oceanography Program received is sent to WDC-A. 

On monitoring/operational systems Brazil participates on GOOS, under witch GLOSS, PIRATA, ARGO etc are implemented. The DHN also hosts the IOC/UNESCO Regional GOOS Office in Rio de Janeiro.

The NOP and International Oceanography Cruises control are the mechanisms of data tracking and dissemination applied by BNDO

7. **What is the structure of marine data management in your country:**

1. How many organizations are involved? 
   The BNDO is the only one Institution with data dissemination responsibility.

2. Who does what? 
   BNDO does everything.

3. What data goes where? 
   Oceanographic Physical, Chemical and Tidal data goes on public domain. 
   Meteorological and Geological are store on BNDO. 
   Bathymetric data is interchanged with International Hydrography Bureau (IHO).

4. Are there data for which there is no home? 
   Biological.

5. What gets passed on to other organizations? 
   xxxx
6. What regional links and data centers are there?

The regional links are kept with Ocean related Universities but no stated formally as data center.

8. What are the strengths and problems of the present arrangements nationally, regionally and internationally?

The system structure is working properly depending on the Brazilian Navy support and due to severe budget constrains the data collection rate and flow is far away from operational. The lack of BNDO staff capacity and training on the new paradigms on computer and data dissemination aggravates the data management and flow problem. Unfortunately, BNDO runs into problems outside of legislation limits. Scientific result publications delay and budget constrains are samples of delaying problems for regular basis data dissemination.

9. What improvements could be made nationally, regionally and internationally?

Internationally a large global training program supported by COI/IODE on Computer related new paradigms for data management and exchange (WEB tools, XML, Open Source tools etc) will be welcome.

Regionally improving ODINCARSA with a larger support, NODC data exchange and stimulating qualified forums to discuss specifics regional problems inside ODINCARSA area mainly in South America.

Nationally, IODE could support the creation of communications links among all Oceanographic Databases spread among ocean related institutions with BNDO to allow Web data exchange.

10. What future national activities are planned?

Three main Brazilian Navy Oceanographic commissions collecting Physical and Chemical Oceanographic data are planned for 2005. Please access http://www.researchvessels.org/ to all 2005 Brazilian NOP.

11. What national, regional or international projects is your NODC involved in (both IODE and non-IODE). Examples: Argo, GTSSP, EDMED, EDIOS, Sea-Search, GODAR.

At national level: NODC is part of a national program called " VI Sectorial Plan for Ocean Resources (PSRM) " in witch ocean climate monitoring activities are implemented, according to GOOS principles.

At regional level: NODC is part of a recently formed Regional Alliance in Oceanography for upper Southwest and Tropical Atlantic, encompassing institutions from Argentina, Brazil and Uruguay.

NODC is also part to the ODINCARSA project and is represented in programs and projects to which Brazil is part, such as GOOS, GLOSS, ARGO, PIRATA and etc.