Ocean News

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In this issue

Message from Secretary

Ministry of Earth Sciences

Dr. P.S. Goel

I am very happy to note that Indian National Centre for Ocean Information Services, Hyderabad is bringing out a Newsletter to bring awareness about its products and services provided by INCOIS to scientific community and society at large. The Newsletter may also provide information about new developments in the field of operational oceanography.

I am sure the Newsletter shall become an effective means for communication, a bridge between INCOIS and users. A large number of scientific community is now dependent on INCOIS for Ocean Information. I wish all success to this new endeavor.

Editorial message from the Director, INCOIS

Dr. Shailesh Nayak

The Indian National Centre for Ocean Information Services (INCOIS), set up in 1999 to provide operational ocean services to the country, has matured into a knowledge centre over the years and taken a lead role in the Indian Ocean region. Coordinating a wide range of scientific activities related to ocean observation, it has been successfully working on and offering advisory services for potential fishing zones and helping surmount major challenges like setting up an early tsunami warning system.

The INCOIS newsletter, proposed to be published twice a year, is designed to be its mouthpiece and aims to reach out to the public in general and the scientific community in particular. We will be glad to receive your feedback.

Early Warning Centre for Tsunami and Storm Surges is being setup at INCOIS

Recognising the imperative to put in place an Early Warning System for mitigation of Oceanogenic Disasters that cause severe threat to nearly 400 million of our population live in the coastal belt particularly the national calamity due to the Indian Ocean Tsunami of December 26, 2004, the Ministry of Earth Sciences (MoES), Government of India formulated a project on 'Early Warning System for Oceanographic Disasters: Tsunami and Storm Surges', in consultation with Department of Science and Technology (DST), Department of Space (DOS) and the Council of Scientific and Industrial Research (CSIR). The project was approved by the Government of India in October 2005 for implementation at a cost of Rs. 125 Crore with MoES as the nodal ministry. The National Early Warning System is targeted to be made operational by September 2007 at INCOIS.

An Interim Tsunami Early Warning Centre (ITWC) has been made operational at INCOIS since July 2006 on 24 x 7 basis. This Centre receives earthquake information from the India Meteorological Department, Pacific Tsunami Warning Centre, Japan Meteorological Agency and Tide Gauge Data from SOI, NIOT and other International Stations. Standard Operating Procedure issued by the MoES is being implemented at ITWC. This arrangement has proven to work well during the recent Tsunami that hit Java on July 17, 2006 wherein it was confirmed within an hour that the Tsunami was not likely to hit the Indian coastline.

Configuration of the computational infrastructure for the national early warning centre is being evolved and this will be put in place by April 2007. INCOIS has engaged the services of M/s Tata Consultancy Services to assist in finalising the computational architecture based on the functional requirements of the warning centre, application software development that will enable data reception, alerts and online display, data base management, decisions support and generation & dissemination of warnings.

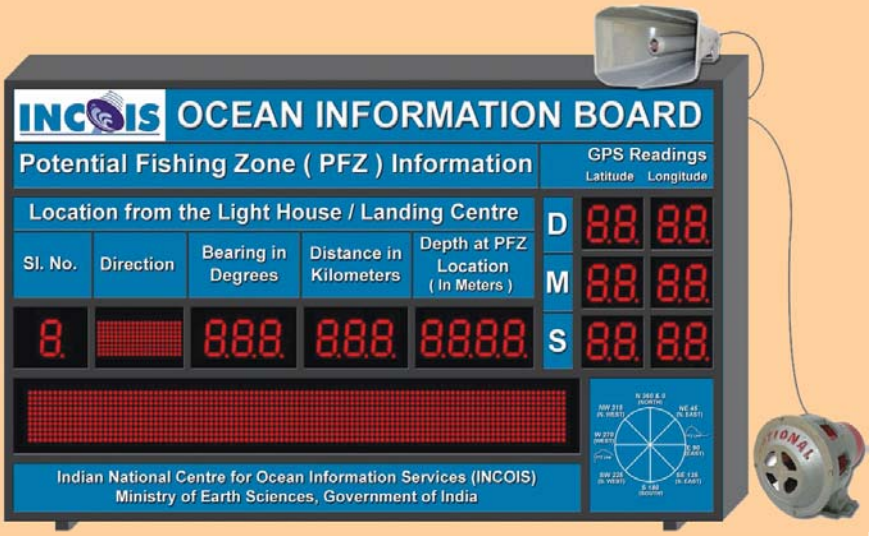
Communication of real-time data from Seismic Stations, Tide Gauges, BPR's to the early warning centre is very critical for generating timely tsunami warnings. An end to end communication plan has been worked out in collaboration with the Indian Space Research Organisation that envisages use of INSAT DRT for one way and INSAT MSS for two way communication from Tide Gauges and DART Buoys. A V-SAT Communication System was established at ITWC for receiving real time tide gauge data from NIOT.

Tsunami Buoy (TB 8) *(Continued on page2)*

Potential Fishing Zone Advisory Services

INCOIS has been providing integrated Potential Fishing Zone advisories generated using both the Sea Surface Temperature (SST) and Chlorophyll based on the features such as oceanic fronts, meandering patterns, eddies, rings up-welling areas that are proven to be prospective sites for fish accumulation. The advisories prepared in local languages and local measurement units were disseminated thrice a week (i.e. Monday, Wednesday and Friday) during non-ban and cloud free days, through innovative and novel initiatives such as Electronic Display Boards and Information Kiosks at the fishing harbours, radio, print media, emails and website supplementing fax and telephone.

The PFZ advisory service was resumed for the current season from October 17, 2006 and advisories are being and disseminated to 200 nodes along the Gujarat, Maharashtra, Goa, Karnataka, Kerala, South Tamilnadu, North Tamilnadu, South Andhra Pradesh, North Andhra Pradesh, Orissa, West Bengal, Andaman & Nicobar Islands and Lakshdweep Sectors.



A Proto-type Electronic Display Board equipped with GSM Communication and capability of multi-lingual text messages display, voice messages and siren for disaster alerts was developed and successfully demonstrated.

An Electronic Display Board was inaugurated at Srayikkad, Kerala on December 20, 2006.

INCOIS had undertaken PFZ Validation projects in Ratnagiri, Goa, Mangalore, Kerala, Machilipatnam and Gopalpur to validate the advisories and to assess the potential benefits to the fishermen. These validation projects have been extended to other coastal areas i.e. Visakhapatnam, Off Chennai, and South West Coast of Tamilnadu in collaboration with academia and institutes.

Ocean State Forecast

Reliable forecast of the ocean state is vital to the shipping sector, Fishery sector, Navy, Offshore industry, Port & harbors for the safe travel and operation in the sea. INCOIS has been operationally providing forecast of wave, swell and wind parameters for tropical Indian Ocean for five days at six hourly intervals at 150 kms spatial resolution. Forecast of tidal currents is also being provided to Gujarat and Maharashtra coast (Ratnagiri to Porbandar) for five days at three hourly intervals (7 km x 7 km grid resolution).

Ocean State Forecast products were generated and published on INCOIS website daily. OSF products were disseminated to specific users for specific locations users by e-mail and CDs. More than 60 registered users from Navy, Coast Guard, Oil Industries, Offshore industry, academia and fishery avail the OSF products.

INCOIS commenced dissemination of coastal wave forecast on pilot basis through All India Radio and Pondicherry FM station for three districts Cuddalore, Pondicherry and Karaikal in collaboration with Pondicherry Multi Purpose Social Service Society (PMSSS). The broadcast is given thrice a day in local units for different locations from the coast.The OSF information on wave height & direction, wind speed & direction is disseminated in local languages and units through public addressing system thrice a day at 20 Village Information Centres in Pondicherry.

Recently, the Ministry of Earth Sciences (MoES), Government of India identified INCOIS as the nodal agency for forecasting of Oil Spill Trajectory. The GENOME model of NOAA, USA was customized for the Indian coast and interfaced with a GIS data base of selected sensitive areas by ICMAM was setup at INCOIS. Timely information on movement of oil spill lead to timely interventions to prevent movement of oil to sensitive coastal habitats (corals, mangroves, beaches, lagoons) and damage to marine life.

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data is being received at INCOIS from NIOT through V-SAT. As part of the Virtual Private Network for Disaster Management Support (VPN-DMS), a primary node was established at INCOIS with 4.5 m antenna and video conference equipment. This system facilitates data, audio and video connectivity with other primary nodes and nodes at 22 states and Union Territories.

IOGOOS Workshop and 4th Annual Meeting

Indian Ocean Global Ocean Observing System (IOGOOS) Workshop and fourth Annual Meeting (IOGOOS-IV) was organised by INCOIS at Tanzania during October 10 - 12, 2006. Thirty participants from eleven countries as well as IOC participated in the Annual Meeting.

A science workshop was organised as part of the meeting with scientific talks by eminent Scientists. The work plan to be pursued by IOGOOS for the next couple of years for each of its activities was evolved during the meeting.

Dr. Shailesh Nayak, Director, INCOIS was elected as the new Chairman of IOGOOS.

Knowledge Partner for 94th Indian Science Congress

INCOIS has been identified as one of the Knowledge Partners to help in developing the scientific contents of the themes and be partner in the deliberations of the 94t h Indian Science Congress held at Annamalai University, Chidambaram, Tamilnadu during January 3-7, 2007.

Workshop on PFZ Mission – Present Status and Improvements

Dr. R. R. Navalgund, Director, Space Applications Centre (SAC), Ahmedabad inaugurated the Workshop and Dr. Somavamshi, Director General, Fishery Survey of India (FSI) delivered the key note address.

A workshop on 'Present Status and Improvements in the PFZ Mission' was organised on August 18, 2006. Scientists from Central Institute of Fishery Technology (CIFT), Central Institute of Fishery Education (CIFE), Mumbai, FSI, Andhra Pradesh State Fishery Department, Space Applications Centre (SAC), Ahmedabad, National Remote Sensing Agency (NRSA), Hyderabad and Principal Investigators of PFZ Validation Projects from various states have participated in this workshop.

The Workshop discussed on the improvements in the advisories by incorporation of wind parameter, species specific forecast for tuna and extending this services to the Indian Ocean countries.

150 TB SAN Based Storage Consolidation

To meet its enterprise storage needs especially in the area of Ocean Modelling, INCOIS procured 3-Tier SAN Based Storage Consolidation using Disk Storage and Three tier Hierarchical Storage Management (Fibre Channel Disk Storage, SATA Storage, LTO Gen-3 Tape Library, SAN Fabric, NAS Head System, etc) based on Sun StorageTek solution from M/s Sun Microsystems. This includes 22 TB of Fibre Storage, 50 TB of SATA storage and 80 TB of LTO. The storage solution is being configured and expected to be operational by January 2007.

PFZ User interaction meeting at Fishing Harbour, Visakhapatnam

A User Interaction Meeting on 'Potential Fishing Zone Advisory Services' was organised at the Fishing Harbour in Visakhapatnam on September 29, 2006 by INCOIS and Centre for Studies on Bay of Bengal, Andhra University.

More than 200 fishermen, boat operators and officials from Andhra Pradesh State Fisheries Department participated in this meet.

The use of PFZ advisories and benefits were explained to the fishermen.

Training Programme for Maldivian Officials on PFZ Methodologies

A training programme on "PFZ Methodologies" was conducted for the officials from the Ministry of Fisheries, Agriculture and Marine Resources of the Government of Maldives during October 3-13, 2006 at INCOIS. The training programme included series of lecturers by experts in the field of Remote Sensing, Ocean Color, Digital Image Processing & GIS and Fisheries apart from Potential Fishing Zone methodologies, generation and dissemination.

User Interaction Meetings and Training on Ocean State Forecast

A user Interaction meeting on Ocean State Forecast and Ocean Observations was conducted with officers from different institutes of Indian Navy on July 14, 2006 at INCOIS. Nine officers from different institutes of Indian Navy attended the training program.

A user interaction workshop was conducted for the officers of Indian Coast Guard, East Coast regional Centers on July 24, 2006 at INCOIS. Participants were given hands on experience on retrieval and use of Ocean State Forecast data for the operational use of Indian Coast Guards. All regional offices of Coast

Guard were registered to get the OSF Information.

A training program was conducted at INCOIS on 'Ocean Weather Forecast and Fishery Forecast' to thirty members of Pondicherry Multipurpose Social Service Society (PSMSS), a prominent NGO based at Pondicherry, during October 26-27, 2006. Lectures and practical sessions on Ocean State and Fisheries forecast were conducted. Users were trained in obtaining the information from INCOIS about the Ocean State Forecast and Potential Fishing Zone Advisories and disseminating them to the village information centers.

Web-based Services

INCOIS Website (www.incois.gov.in) matured as a prime vehicle for delivery of ocean data, information and ocean information and advisory services, especially in the areas of (i) Potential Fishing Zone Mission, (ii) Indian Ocean Argo Project, (iii) Ocean State Forecast, (iv) IOGOOS. It also facilitates users with Information Bank, various projects and programmes, Ocean Tutor, etc.

The web-based multi-lingual on-line information delivery system with Web-GIS capability enables the users to query, analyse, visualise and download ocean data, information and advisories for their regions of interest. This has been widely used website among wide spectrum of users.

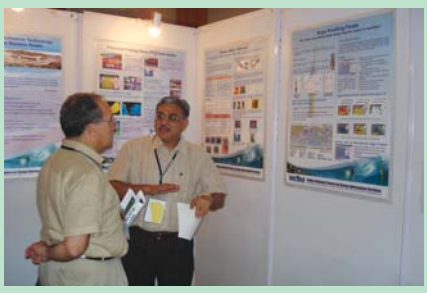
Symposium/Exhibitions

The Ministry of Earth Sciences, INCOIS and Indian Space Research Organisation co-sponsored International Symposium on 'Geospatial Data bases for Sustainable Development' at Goa during September 27-30, 2006. The symposium was organised by International Society for Photogrammetry and Remote Sensing (ISPRS) and Indian Society of Remote Sensing (ISRS) and hosted by Space Application Centre (SAC), Ahmedabad.

Dr. P.S. Goel, Secretary, Ministry of Earth Sciences inaugurated the four day international symposium.

INCOIS set up stalls in the exhibitions of the following events to showcase its activities on ocean information and advisory services, ocean observations and early warning system for the tsunami and storm surges.

- International Symposium on Geospatial Databases for Sustainable Development at Goa during September 27-30, 2006.
- International Conference on Marine – Hazards and Opportunities' organised by Federation of Indian Chamber of Commerce and Industry at Chennai during July 3-5, 2006.



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