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## Inauguration of Tsunami Early Warning Centre at INCOIS, Hyderabad

State-of-the-art Tsunami Early Warning Centre (TEWC), set up at the Indian National Centre for Ocean Information Services (INCOIS), Hyderabad was inaugurated by Shri Kapil Sibal, Hon'ble Minister for Science & Technology and Earth Sciences, on 15 October, 2007. Hon'ble Chief Minister of Andhra Pradesh, Dr. Y. S. Rajasekhara Reddy graced the occasion. Dr. P. S. Goel, Secretary, Ministry of Earth Sciences gave welcome remarks and spoke about the Tsunami Early Warning Centre. The project for establishing the centre was taken up after the tragic 26 December 2004 Tsunami that severely hit the coasts of India and other Indian ocean nations. This project was implemented in collaboration with Department of Science and Technology (DST), Department of Space (DOS) and the Council of Scientific and Industrial Research (CSIR).



▲ The Hon'ble Union Minister for Science & Technology and Earth Sciences, Shri Kapil Sibal inaugurating the Indian Tsunami Early Warning Centre.

The Indian Tsunami Early Warning System comprises a real-time network of seismic stations, Bot-

### New Year Greetings from Secretary, Ministry of Earth Sciences

The year 2007 has been an eventful year for the Ministry of Earth Sciences. Setting up of Earth Commission will provide a new direction to the entire gamut of activities of the Ministry. Setting up of world class Tsunami Warning System, a desalination plant with capacity of 1 million litre per day, has indeed been a technological feat. New initiatives were taken to start a new chapter of scientific research in Arctic region as a part of celebration of international polar year. Quality of short range weather forecasting has also improved. The year 2008 comes with new hopes and challenges. The cabinet approval for modernisation of Indian Meteorology will make us possible to bring weather forecast and services to world class standard. All major initiatives for 11th five year plan like new ice class ship, Oceanarium, Centre for Climate Change and new headquarter building will gather momentum.

May 2008 bring new success and recognition to each of you in the MoES family. Happy New Year.

P.S. Goel  
Secretary, MoES

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tom Pressure Recorders (BPR) and tide gauges to detect tsunamigenic earthquakes and to monitor tsunamis. The warning centre is equipped with all the necessary infrastructure to receive real-time data from all the sensors, analysis of the data, generation and dissemination of tsunami advisories. Seismic and sea-level data are continuously monitored in the Centre, round the clock, using a custom-built software application, jointly developed by INCOIS and M/s Tata Consultancy Services (TCS). Tsunami warnings/watches are generated based on pre-set decision support rules, and disseminated to the concerned authorities for action, following a Standard Operating Procedure (SOP). The coasts of India and the island regions are likely to be affected by tsunamis generated mainly by subduction zone-related earthquakes from the two potential source regions, viz., the Andaman-Nicobar-Sumatra island arc and the Makran subduction zone north of Arabian Sea.

### Working mechanism of the centre

The Early Warning Centre receives real-time seismic data from the national seismic network of the India Meteorological Department (IMD) and other International seismic networks. The system detects all earthquake events of more than 6 magnitude occurring in the Indian Ocean, in less than 20 minutes of occurrence. BPRs installed in the deep ocean are the key sensors to confirm the triggering and progression of a Tsunami. National Institute of Ocean Technology (NIOT) has established the BPRs in the Bay of Bengal and in the Arabian Sea. In addition, NIOT and Survey of India (SOI) have installed 30 Tide Gauges to monitor anomalous sea level rise because of tsunami waves. Coastal Topography data required for modelling is generated by the National Remote Sensing Agency (NRSA), Hyderabad. INCOIS has also generated a large database of model scenarios for different earthquakes that are being used for generating tsunami early warning.

### Hindi Fortnight celebrated in the Ministry

Ministry celebrated Hindi Fortnight from 14 to 28 September 2007 in order to promote the progressive use of Hindi in the ministry. Several competitions on Essay writing, Debate, Noting-drafting, recitation etc. in Hindi were organised. More than 50 officers/employees participated in the above competitions. Besides these, Hindi Divas was celebrated on 14 September 2006. The closing ceremony of Hindi Fortnight was held on 29 September 2007. In this ceremony, the Secretary distributed cash prizes and certificates to the winners among officers and staff. A "Kavya Goshthi" was also organised where six distinguished poets entertained the audience with their poetry.

### Hindi Seminar organised

Ministry has been organising a National Scientific seminar in Hindi, on the subjects related to ocean and atmospheric sciences, every year. This year the Hindi seminar was organised on 12 November 2007 in New Delhi and the topic of this seminar was "Global Warming". In order to encourage original scientific work in Hindi, scientists/experts belonging to various research organisations from the entire country were invited to participate in this seminar and present their papers in Hindi. The first, second and third prizes were awarded for the paper presentations.



▲ Shri. Prakash Kumar, Prof. V. L. Chopra, Dr. P. S. Goel, Shri B. C. Mandal, Director, Dept. of Official Languages in the inauguration of the Hindi Seminar.

## Indo-Bulgarian S&T Programme launched at NIOT Chennai

Under the Indo-Bulgarian S&T programme, NIOT and University of Chemical Technology (UCT), Sofia, Bulgaria are working on a project titled "Surface modification approach against marine fouling" with the support from Department of Science and Technology. Various silicone-based coatings have been tested in the sea. A new foul release material, developed under this joint project, has been patented in Bulgaria and PCT. Further, in order to study the shear force of marine macrofouling (barnacle) adhered to surface of substrate, a Barnacle Adhesion Tester has been jointly designed and developed.



▲ Documents of Bulgarian Patent on the new foul release formulation developed by NIOT and UCT Bulgaria are being handed over to Director NIOT by Dr. Vladkova, PI. Dr P.S. Goel, Secretary, MoES, Dr. Peter Deniff, CoPI and Dr. R. Venkatesan are seen in the picture.

## Personal Development Workshop organised



▲ Lecture session in progress.

tute of Hotel Management, Chandigarh during 2-4 November 2007. Through lectures, videos, group exercises, group discussions, and outdoor activities, the participants were trained to improve communication skills, presentation skills, leadership skills, managing self and managing relationships etc., aiming to improve productivity in office. Before this, following workshops have already been conducted:

- Two-Day Conference organised on 16-17 March 2007 at IMD, Pune.
- Orientation Workshop on Project Management at the Institute of Hotel Management, Kufri, Shimla, during 14-18 May 2007.

Training of the scientists/officers/staff of the Ministry has been one of the priority areas of the Ministry. It aims to improve the efficiency of the officers/staff of the Ministry and develop synergy between the constituent units of the Ministry in achieving the objectives of the Ministry. A brainstorming workshop was organised at Central Training Institute (CTI), Pune of India Meteorological Department (IMD) under the Chairmanship of Secretary, to take stock of training activities and prepare a road map. Accordingly, a series of training programmes were planned. In that series, an orientation workshop, "Tomorrow begins today" was conducted at the Insti-



▲ Outdoor exercise during the workshop.

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- Direct Trainer Skills Course during 20-24 July 2007 at Central Training Institute, IMD Pune.
- Direct Trainer Skills Course from 14-18 September, 2007 at National Institute of Oceanography, Dona Paula, Goa.

## Awards / Prizes / Nomination / Deputation

- Dr. R. Venkatesan of NIOT, Chennai was conferred with Tamilnadu State Scientist award for the year 2006 in the field of Engineering and Technology, instituted by Govt. of Tamilnadu on 10 October 2007 at Chennai. Earlier, he also received MOSCOT National Award from Electrochemical Society of India, at Indian Institute of Science, Bangalore on 23 August 2007.



▲ TANSa award presented to Dr. R Venkatesan by the Secretary Department of Biotechnology on 10<sup>th</sup> October 2007 at Chennai.

- The IITM celebrated its 46th Foundation Day on 17 November 2007 at its premises in Pune. Prof. U.R. Rao, Former Chairman of ISRO and Space Commission was the Chief Guest of the function. Prof. V.K. Gaur, Former Secretary, Department of Ocean Development, Government of India and Distinguished Professor, Indian Institute of Astrophysics was the Guest of Honour.
- Mr. Etienne Szymanski, Engineer from Walesch Electronic, Switzerland visited the IITM, Pune during 20-28 September 2007 to install the Dendro-2003 densitometry system.
- Prof. J. McCreary, Director, International Pacific Research Center (IPRC), University of Hawaii, USA visited IITM, Pune. He also delivered a lecture on Dynamics of Indian-Ocean circulation and Shallow overturning circulations in the Indian Ocean, during 24-25 September 2007 respectively.
- A Hindi Workshop was conducted at IITM, Pune on 28 September 2007. The Workshop was aimed to provide information on the Official Language Policy to the officers of the Institute.
- Dr. R. Krishnan of IITM, Pune received the Annual Silver Jubilee Award for research paper entitled "Coupling of Mixed Layer Processes and Thermocline Variations in the Arabian Sea" published in the Journal of Geophysical Research, Vol. 110, 2005, co-authored with Dr. K.V. Ramesh.
- Shri R.S. Sonawane, Smt.V.V. Sapre and Shri D.N. Labhane IITM, Pune received the Excellent Performance Award for the Administrative, Technical and Non-Technical Maintenance category respectively for the year 2006.
- Ministry celebrated "Vigilance Awareness" week during 12-16 November 2007.

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