

Seismic network's efficacy proved during Nepal earthquake

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The April 25 Nepal earthquake, the first major tremor after the establishment of the Indian Seismic and GNSS Network (ISGN) in 2013, proved the effectiveness of the system, that provides real-time data to 100 standalone seismic stations spanning across the country.

ISGN seeks to enhance the capability in monitoring seismic activity in India, besides providing high quality data for researchers.

The Hyderabad-based Indian National Centre for Ocean Information Services (INCOIS), the nodal agency for implementing the project, is partnering with Indian Meteorological Department, National Geophysical Research Institute, Institute of Seismological Research, Snow and Avalanche Study Establishment and several other national institutions, including IITs and universities.

According to Dr. T. Srinivasa Kumar, in-charge of the In-



The VSAT hub antenna receives seismic/GPS data from remote field stations.— PHOTO: SPECIAL ARRANGEMENT

dian Tsunami Early Warning Centre at INCOIS, the 7.9 magnitude Nepal earthquake provided an “undesired” testing ground for the performance of the network. “It provided an opportunity to see how this entire system is working”, he added, while pointing out that this was largest earthquake after the network was inaugurated on November 21, 2013.

Although an earthquake of more than 6 magnitude occurred in the Bay of Bengal last year, this was the most

devastating tremor in recent times in the region, he added.

All the seismic and GNSS stations are linked through VSAT while INCOIS and IMD with state-of-the-art data centres serve as Satellite Hub Stations. In view of the critical nature of the data, the communication network has been linked with two satellites for redundancy. While half the number of stations is connected through GSAT-12 to a nine-metre Hub set up at INCOIS, the remaining stations are connected through

INSAT-3A to another nine-metre Hub at IMD.

He said both INCOIS and IMD act as mirror centres to each other by ensuring complete availability of the data as the entire computational infrastructure including hardware, operating systems, application software, processing and archival software and also monitoring programmes have been installed at both the places.

While the users earlier had to visit certain specific institutions to download data once in six months or so, the ISGN network now has come in handy for researchers as well as operational monitoring for INCOIS and IMD. All the real-time data received from various stations is archived at INCOIS and IMD and made available through the website www.isgn.gov.in.

The communication and computational infrastructure is capable of catering to up to 500 standalone seismic/GNSS stations and plans are on to achieve the same in the next few years, he says.