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GIANT | LEAP **Ocean Information Services hold Federation of Indian Geosciences Associations meet**

INCOIS showcases three major breakthroughs

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HYDERABAD, OCT. 14

The Indian National Centre for Ocean Information Services (INCOIS) has made three major breakthroughs, all of which will be greatly helpful to coastal communities, INCOIS Director Satish Shenoi announced at the Triennial Congress of the Federation of Indian Geosciences Associations organised at the National Geophysical Research Institute here on Monday.

Detailing the recent launch of GEMINI (Gagan-Enabled Mariner's Instrument for Navigation and Information), he pointed out that the soap-box-sized device helps fishermen get updates on weather as well as location of fishing zones and so on. The device, deployed inside the boats, receives information directly from the satellite.

Referring to Cyclone Ockhi that hit India's west coast in November 2017, Shenoi told the gathering that until then, fishermen could only get updates on their phones as long as they had cellular service. INCOIS then worked with ISRO and the Airports Authority of India to use the GPS-aided GEO Augmented Navigation (GAGAN) system for development of GEMINI. Information broadcast via a vacant slot (null message slot) in the communication architecture can be received by fishermen on the GEMINI set.

The INCOIS Director told *Deccan Chronicle*, "We have performed all the necessary field trials and it is working really well. The instrument will cost around ₹8,000 to ₹9,000. The Department of Fisheries is exploring the idea of formulating a government scheme, so that these machines could be made available to fishermen."

REFERRING TO Cyclone Ockhi that hit India's west coast in November 2017, Shenoi said that fishermen could only get updates on their phones as long as they had cellular service.

A related breakthrough of INCOIS is its newly-found ability to monitor chlorophyll content on the sea surface, which is an indication of phytoplankton (microbial marine plant life consumed by fish). Shenoi said, "We will thus be able to accurately predict the location of potential fishing zones (PFZ). We collect satellite data and analyse currents and other parameters. Information provided also includes current speed, wind speed and bathymetry of the region (underwater equivalent to topography). The information is provided in the form of text and maps using various means -- mobile apps, text messages, and electronic boards at harbours."

The third development the INCOIS Director disclosed is the organisation's ability to predict specific locations that a tsunami might hit along the country's coast. Earlier, the country's tsunami warning system could tell where a tsunami might hit, but not how much deluge the tsunami would bring. "With the help of data collected by ISRO's National Remote Sensing Centre, we have a clear idea of the topography along the coastal lines. Now, we can predict how much of the coast will be damaged due to a wave and the inundation that follows. This data would be extremely helpful for evacuation efforts," Shenoi said.

Giving details, he explained that INCOIS would collect data of a particular wave event and interpolate it against the 300-odd data models it had with it.

"Earlier, we did not have the computing power to handle such processing. Now, we can process an event in real-time," the INCOIS Director disclosed.

This means, in the event of a seismic disturbance, INCOIS can process incoming data immediately and predict where a possible tsunami might occur.

HOW THE ORGANISATION WAS SET UP IN HYDERABAD

DC CORRESPONDENT
HYDERABAD, OCT. 14

While INCOIS is an organisation that primarily deals with oceanic research, it is headquartered in Hyderabad, a city that is hundreds of kilometres away from the sea coast on either side.

When asked about it, INCOIS Director Satish Shenoi told *Deccan Chronicle* that the location was owing to dependence on data from National Remote Sensing Centre, which is based in Hyderabad.

"We would take data from NRSC in the form of physical tapes. Back then, we did not have the means to transmit large amounts of data quickly.

THOUGH THE city was hundreds of kilometres away from the sea coast on either side, INCOS was set up in Hyderabad to minimise the distance between itself and NRSC to enable quicker transfer of data, the institute director said.

Thus, INCOIS was set up in Hyderabad to minimise the distance between itself and NRSC, to enable quicker transfer of data," he said.

"Now, we have our own data centre in the city where we collect and store data," Shenoi added.