

International radio conference approves bandwidth to track ocean currents for science and disasters

February 22 2012, By Andrew W. Clegg



An ocean radar at Refugio State Beach, California. The Interdisciplinary Oceanography Group at the University of California Santa Barbara operates the radar, which is sponsored in part by the National Science Foundation. Credit: Photo courtesy Dr. Libe Washburn, University of California, Santa Barbara.

The International Telecommunication Union (ITU), charged by the United Nations with coordinating global radio spectrum use, recently came to an agreement that will foster improvements in ocean radar technology, which may eventually allow near real-time detection and tracking of tsunamis and prediction of the likely paths of oil spills, ocean debris and persons lost at sea.

Global interest in [ocean](#) radars increased dramatically in recent years due

to events such as the Gulf oil spill and the massive loss of life caused by the Indonesian and Japanese tsunamis. Friday's action by the ITU's World Radiocommunication Conference (WRC) provided specific radio frequency bands for ocean radars, which until now operated only on an informal basis and were subject to immediate shut-down if they caused interference with other radio systems.

Ocean radars are small radio systems typically installed on beaches and use [radio signals](#) to map ocean currents to distances as great as 100 miles. Users typically employ them for science, including the study of global ocean currents and their role in weather and climate change.

With further technical developments, including a reduction in the time between taking [radar measurements](#) and constructing maps of [ocean currents](#), ocean radars could be used to alert authorities to the existence of tsunamis resulting from earthquakes and follow their path in near real time, allowing better warnings of impending dangers. The radars may also be able to predict the likely path of persons or vessels lost at sea and to predict the evolution of debris fields and [oil spills](#) after shipwrecks or oil rig disasters.

"The WRC's decision to identify dedicated ocean radar bands will help speed up technological development of these radars," said Andrew Clegg, a [radio spectrum](#) manager with the U.S. National Science Foundation (NSF), who chaired the international drafting group at the WRC that developed the ocean radar spectrum solution. "Many countries, particularly those recently devastated by ocean disasters, were particularly interested in reaching a global agreement for the use of ocean radars."

A variety of agencies and institutions in the United States fund or operate ocean radars including NSF, the National Oceanographic and Atmospheric Administration, the Department of Defense, and a large

number of universities and research organizations.

The growing importance of radio spectrum use is due to intense demand for radio spectrum bandwidth by such applications as smart phones, broadband Internet access, GPS and military systems. The recent WRC action sets the stage for improved spectrum access specifically for ocean radars, but each country that desires to operate radars in the identified bands must implement the plan within their own national rules and regulations, which will require additional time.

Over 3,000 delegates representing more than 150 different countries attended the WRC, held in Geneva, Switzerland, from Jan 23-Feb 17. Similar conferences are held every three to four years.

Provided by National Science Foundation

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