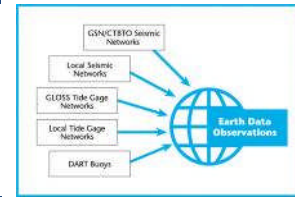


DEEP-OCEAN ASSESSMENT AND REPORTING OF TSUNAMIS (DART)



The Deep-ocean Assessment and Reporting of Tsunamis (DART) is a monitoring system that detects, measures, and reports the presence of tsunamis. The U.S.-designed system includes two components: (1) a bottom pressure recorder (BPR) that sits on the sea floor to measure differences in water pressure, and (2) a surface buoy for real-time satellite communications. DART data, along with data from seismometers and tide gauges, is processed through a forecast model that provides the information to tsunami warning centers to issue alerts and warnings—or to cancel them.

US IOTWS Contribution

On December 1, 2006, Thailand and the U.S. jointly launched a DART II tsunameter into the Indian Ocean at 9°N and 89°E. Indonesia and the U.S. launched a second tsunameter on September 19, 2007, at 0°N and 92°E. These two DART stations contribute to a planned array of 22 stations to support comprehensive detection capability in the Indian Ocean as endorsed by the ICG/IOTWS. Through its technical training on the deployment, maintenance, and operation of DART stations, NOAA and its partners have demonstrated the implementation of IOC standards and protocols for reliability, accuracy, interoperability, free and open exchange of data, and integration. DART II is the current generation of DART technology and allows warning centers to access information more quickly. DART II helped in determining that no damaging tsunami formed from the September 2007 earthquake in Indonesia, thus avoiding unnecessary and costly evacuations. In that case, the non-damaging tsunami was quickly detected, assuring that cancellation of the warning was the appropriate action. This deep-ocean sensor capability improves quality assurance and reliability of the warning system, reduces the risks of false alarms, and provides much longer warning lead times as compared to a network of sea-level gauges alone.



D. McKinnie, NOAA

NOAA's DART II system includes a surface buoy (left) and bottom pressure recorder (right) to provide timely warning

Next Steps

Indonesia and Thailand will maintain the DART stations to ensure continued transmission of real-time data to the region. NOAA will provide technical guidance to its partners and through the IOC. It will also continue to develop and strengthen partnerships with countries in the region for the installation of the complete DART array for tsunami warning and detection.

For Further Information

- Eddie Bernard, NOAA Pacific Marine Environmental Lab (eddie.n.bernard@noaa.gov)
- David McKinnie, NOAA IOTWS Coordinator (david.mckinnie@noaa.gov)

- <http://www.pmel.noaa.gov/tsunami/Dart>
- <http://www.ndbc.noaa.gov/dart.shtml>