

# Special Feature 3

## Contribution of the Preparatory Commission to Tsunami Early Warning Systems

The tragedy caused by the tsunami in the Indian Ocean in December 2004 triggered discussions on whether the CTBTO Preparatory Commission could contribute to the prevention or mitigation of such disasters. In March 2005, the Commission tasked the PTS to test the provision of data for the purpose of tsunami warning.

A number of tsunami warning institutions began receiving IMS data in near real time on a test basis. During this test phase, which lasted over a year, tsunami warning centres confirmed the usefulness of IMS data. In comparison with data from other existing monitoring networks, IMS data were found to arrive at these tsunami warning centres with less delay and higher reliability. This provides potentially vital additional warning time in which to activate alerts in the event of a possible tsunami threat.

Consequently, the Twenty-Seventh Session of the Commission, in November 2006, endorsed a recommendation of Working Group B to provide real time and continuous data to relevant tsunami warning organizations. Four tsunami warning centres now receive data from about thirty IMS stations. These centres are located in Japan, the USA (Hawaii), Australia and Malaysia.

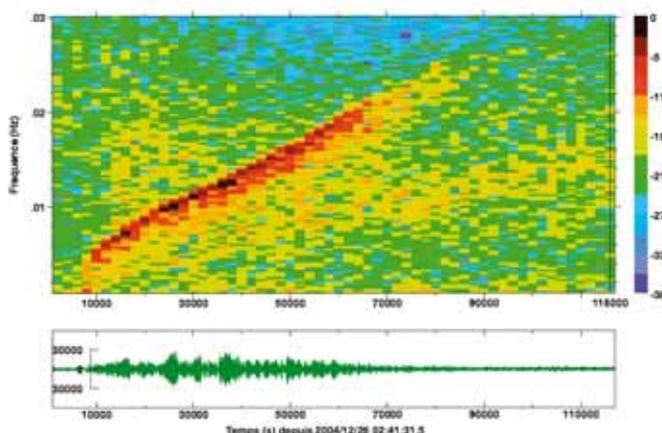
While the purpose of the global verification regime is to verify compliance with the CTBT, the use of IMS data to mitigate the catastrophic consequences of tsunamis is an example of the wide range of potential civil and scientific applications for which these data could be used.



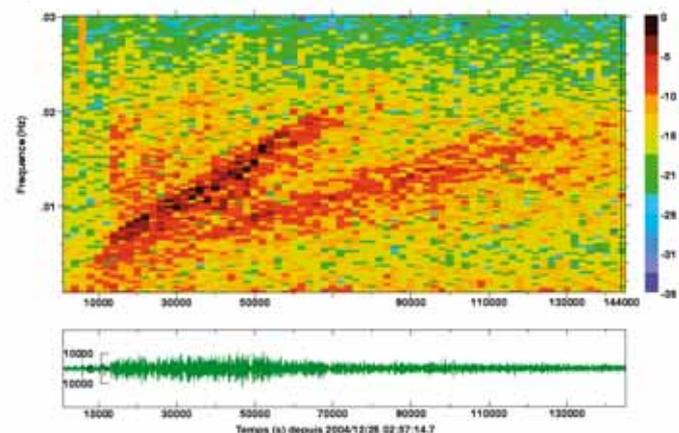
Houses in Aceh, Indonesia, destroyed by the tsunami of December 2004.



H08S1



H08N1



Spectrogram of the tsunami signal recorded on 26 December 2004 on the first element of each of the IMS hydrophone triplets H08S and H08N at Diego Garcia in the Chagos Archipelago (Indian Ocean). The primary dispersion curve is clearly visible in both plots. The right hand plot also shows more prominently the secondary curve indicating the arrival of the reflected wave. The coloured right hand scale indicates the energy of the signal in decibels relative to the peak amplitude (0 dB). The horizontal axis shows time measured in seconds.