

Tsunami warning system and method for providing tsunami warnings

Description

In order to be effective a Tsunami Early Warning system has to rely on fast communication technologies in order to: detect a possible seismic event and allow processing of information; disseminate the seismic source information; analyse the seismic source to check Tsunami potentiality; disseminate the calculated results which help local authorities to issue warning/alerts to the public. The proposed device addresses the last point and is aimed to deliver warning messages to the people at risk in the quickest possible time ("the last mile").

A software has been developed to activate alerts based on measured seismic parameters (earthquake epicentre and magnitude) detected by seismological networks. The software relies on a pre-calculated scenario database to predict when and where a potential tsunami wave should arrive and which coastal areas need to be alerted. The proposed device collects alerting messages through several means, including SMS (special SMS that can be sent with a normal GSM phone), internet connection (if available in form of wire or wireless connection) or via satellite phone.

The alerting message is displayed on the screen and at the same time a siren is activated to raise the attention of the people. The alerting signal can also alternatively be triggered by a local water level measurement directly connected to the device, should communication failures prevent the TAD from being activated by the automatic calculation procedure or in tsunami cases of non-seismic origin (e.g. landslide generated waves).

In order to continuously check its operating status, the TAD is equipped with temperature and pressure sensors whose data are stored in the memory of the device. A global position system antenna (GPS) records the current position of the device thus it is always possible to monitor its geographical position.

Stages of development

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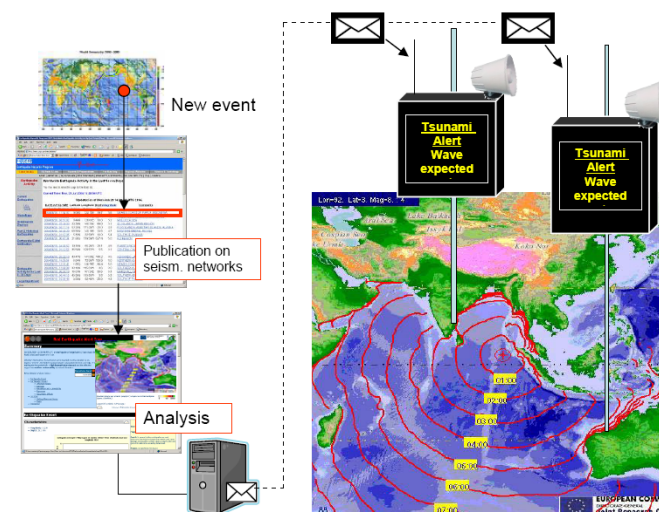
A prototype is currently operating.

Innovative aspects and main advantages

- Early Tsunami warning to the public
- Local fine tuning of the predictions
- Transfer of information signal and triggering signal via SMS, LAN or WLAN
- Three different working modes of the alerting devices

Areas of application

- Early warning of Tsunami events



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