SEISMOLOGY RESEARCH CENTRE

EARTHQUAKE ALARM SERVICE

Earthquake Preparation, Alarm & Response

- A service for owners of major structures and emergency organisations
- Risk management for lifelines and other assets
- Asset vulnerability assesment
- Timely provision of alarms
- Damage scenario generation
- Emergency simulation and training

SEISMOLOGY RESEARCH CENTRE
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MADE IN AUSTRALIA

bsi. ISO 9001 Quality Management

EARTHQUAKE ALARM SERVICE

After an earthquake the first task for a seismologist is usually to determine the longitude, latitude, depth and magnitude of the earthquake. This is not necessarily the most useful information for people responsible for managing large assets or emergency services. Of more value to such authorities would be answers to the questions.

"What are the likely effects of this earthquake?"
"What course of action should be undertaken?"

The es&s seismology research centre has developed a system designed to provide alarm, damage scenario and response information after moderate or large earthquakes. Based on a rapid determination of the earthquake location and magnitude, reports are generated and provided to authorities by phone , fax, email, sms or other means.

The first section of the report describes the earthquake and the general outcomes of the earthquake. This includes descriptions of the expected effects likely to be observed in towns near the epicentre. The second section is specific to the authority for whom the report is being prepared. It contains descriptions, in order of importance, of the effects of the earthquake on a predetermined list of assets for which the authority is responsible.
The third and final section comprises a list of tasks that should be undertaken by the authority, listed in priority order. The task list contains inspection and mitigation measures to be carried out by staff, as well as communication tasks such as informing management, public relations or emergency services.
In the majority of cases the system will be used to confirm that although an earthquake may have been widely felt, and may have caused alarm amongst members of the public, serious damage to major structures is unlikely.

PREPARATION

A database listing the following parameters is required for each report recipient:

- Asset locations (points, lines or areas)
- Asset vulnerabilities, including the importance of expected earthquake effects
- Planned task list, including priorities

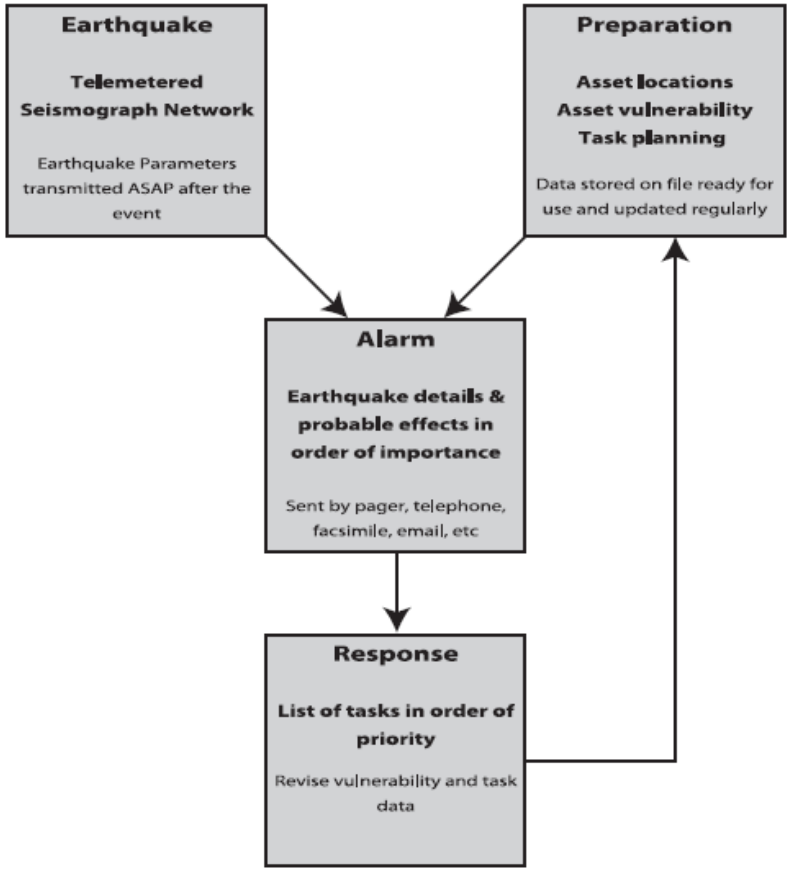
The data base is developed by each authority, possible after consultation with earthquake engineer and with assistance from seismologists.
Preparation of the data base provides excellent training for staff form the authority. Running hypothetical earthquakes through the system is useful for simulation and training exercises.

ALARM

To rapidly and precisely estimate an earthquake epicentre, depth and magnitude, data from a netw of telemetered seismographs is required. The more recordings used, the more precise the location. most reliable estimates, there should be a telemetered recorder near to the epicentre.

RESPONSE

After a reliable earthquake location and magnitude has been calculated, these parameters are fed into the earthquake damage scenario program that outputs the three part report described below. The report is generated by the seismic monitoring organisation and then transmitted to the authority for further action. Other customised outputs are also available.



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