New Field of Earthquake Early Warning and its Examples

Jun Saita¹, Tsutomu Sato¹, and Yutaka Nakamura^{1,2}

1. System and Data Research, Kunitachi, Tokyo, Japan 2. Tokyo Institute of Technology, Tokyo, Japan

What is the unique system for the actual earthquake disaster prevention?

Earthquake Alarm System

P-wave detection On-site

S-wave detection

P-wave detection Front detect

S-wave detection

Compact UrEDAS

1 sec for the decision for the risk

UrEDAS

3 sec for the earthquake parameter estimation

FREQL

0.1 sec for the decision for the risk

1 sec for the earthquake parameter estimation

Features of FREQL as portable device.

The all components of seismometer, sensors, A/D converter, amplifier, CPU and so on, are put together in small aluminum die case vessel of almost 5 inches cube, and the system is electrical isolated. So the FREQL is easy to install and the structure of FREQL is noise proof.

Hyper rescue teams made miraculous activities but the activity was always under a risk of large after shocks. After the activity against 2004 Niigataken Chuetsu Earthquake, the Tokyo fire department approached us to adopt FREQL for their activity, then the Portable FREQL has been developed in 2005.

At the time of the rescue activity after the 2005 Pakistan earthquake, they had reported that FREQL works in right manner.

In this time, several fire departments in nation wide equip the portable FREQL to prevent earthquake hazards during their activities.



Portable FREQL with P/U and A/U



FREQL-Light With A/U



All-in-one FREQL