

Deployment of new strong-motion seismographs of K-NET

Shin Aoi[1]; Takashi Kunugi[1]; Shigeki Adachi[1]; Hiromitsu Nakamura[1]; Nobuyuki Morikawa[1]; Hiroyuki Fujiwara[1]

[1] NIED

<http://www.kyoshin.bosai.go.jp/k-net/>

After the 1995 Hyogoken-Nanbu (Kobe) earthquake, the National Research Institute for Earth Science and Disaster Prevention (NIED) installed K-NET that uniformly covers all Japan with more than 1000 strong-motion accelerometers on the ground surface (Kinoshita, 1998). K-NET including accelerometers, recorders and also system of data management center (DMC) is now under the renewal. NIED has developed new instrument for K-NET (K-NET02 and updated version K-NET02A) using new technologies that has several advantages over the old system, the K-NET95. (1) K-NET02 has been officially approved as a seismic intensity meter by the JMA. Seismic intensity is automatically sent to JMA and DMC at NIED within two minutes after being triggered. This information will contribute directly to the decision and actions of administration. (2) K-NET02 will automatically call the DMC at NIED several seconds after being triggered and transmit waveform data even while recording. This function not only reduces much of the time for data collection but also helps in avoiding any overcrowding of telephone lines. The only practical countermeasure for overcrowding is to connect to the line before it becomes crowded. (3) The signal to noise ratio of K-NET02 in the long-period band has been improved by a factor of ten compare with the K-NET95. This will improve the accuracy of data analysis in the long period band such as waveform inversion analysis of source processes.

Replacement of the accelerometers and recorders at the observation stations are divided in three years. In the fiscal year 2003, instruments of 443 stations in main part of western Japan and a part of Iwate and Miyagi prefectures was replaced by K-NET02 and in the fiscal year 2005, replacement to the K-NET02A for 467 stations in eastern Japan was performed. For the rest 118 stations in western Kyusyu region including Okinawa prefecture, the replace operation is planed to be completed until the end of the fiscal year 2006.