



Korea Seismic Networks and Korea Integrated Seismic System (KISS)

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The modernization of seismic network in Korea was motivated by Youngweol (1996, MI 4.5) and Gyeongju (1997, MI 4.2) earthquakes. KMA (Korea Meteorological Agency) has built 45 digital seismic stations which compose the National Seismic Network. KEPRI (Korea Electric Power Research Institute) and KINS (Korea Institute of Nuclear Safety) also have built 15 and 4 digital seismic stations, respectively. KIGAM (Korea Institute of Geoscience and Mineral Resources) also has made 37 stations until 2008 including Hyodongri complex seismic observatory where GPS, geomagnetic observation system and borehole seismic system.

Since 2002 Korea Integrated Seismic System (KISS) has been playing main role in real-time seismic data exchange between different seismic networks operated by four earthquake monitoring institutes: KMA, KEPRI, KINS and KIGAM. Seismic data from different seismic networks are gathered into the data pool of KISS where clients can receive data in real-time. Before expanding and modernizing of Korean seismic stations, the consortium of the four institutes made the standard criteria of seismic observation such as instrument, data format, and communication protocol for the purpose of integrating seismic networks. More than 150 digital stations (velocity or accelerometer) installed from 1998 to 2008 in Korea could be easily linked to KISS in real time due to the standard criteria.

When a big earthquake happens, the observed peak acceleration value can be used as the instrumental intensity on the local site and the distribution of peak accelerations shows roughly the severity of the damaged area. Real Time Intensity Color Mapping (RTICOM) is developed to generate a every second contour map of the nationwide intensity based on the peak acceleration values retrieved through KISS from local stations. RTICOM can be used to rapid evaluation of the intensity and decision making against earthquake damages.