



## **Korea Integrated Seismic System (KISS) and Earthquake Monitoring for Korea Train eXpress (KTX).**

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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 160 digital stations (velocity or accelerometer) installed from 1998 to 2009 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 every second contour map of the nationwide intensity based on the peak acceleration values retrieved through KISS from local stations. RTICOM can be used for rapid evaluation of the intensity and decision making against earthquake damages.

For the purpose of rapid response to earthquake hazard, Korea Train eXpress (KTX) constructed real-time monitoring system using accelerometers installed on bridges and tunnels. KTX monitoring center receives every second PGA data and monitoring system displays these data on the dedicated screen. The frequency zone of data is considered only below 10 Hz in order to reduce artificial false alarms. If a higher PGA value overcomes the pre-determined level then an alarm will happen with making sound and brightening red and yellow lights. The KTX control center would make repaid decision whether express train should be stopped immediately or not.