



The Swedish National Seismic Network: real-time processing of data from 60 broadband stations

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The Swedish National Seismic Network (SNSN) has recently finished the expansion to 60 high-gain broadband seismic stations, covering the entire country from south to north with a station spacing of approximately 100 km. During the last year the SNSN has also moved from using segmented data transferred via dial-up telephone land-lines to continuous data transmission over broadband mobile telecommunication networks. In this talk we will share some of our experiences with mobile telecommunication data transfer and then concentrate on how the data is processed in real-time at the SNSN data center in Uppsala.

As the data arrives in Uppsala (currently using Guralp's Scream software) it is placed in a shared memory ring-buffer system. The system not only allows multiple copies of individual data streams in separate buffers but also streams of derived data, such as amplitude based energy, data deconvolved with the instrument response or detections. This buffer system allows easy access to suitable data for the application software, such as detectors, location and focal mechanism algorithms. One such application which is currently running is a magnitude estimator for energy duration magnitudes of large events. As of today only data from the SNSN stations are processed but in the near future data from stations in Finland, Denmark and Norway will be included in order to enhance the regional coverage of the location system. Additionally, stations from around the globe will be incorporated to allow fast estimates of location and magnitude of large teleseismic events.