



Analysis of Real Time Seismic Data Transmission Used by Slovenian Seismic Network

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In the year 2000, Seismological Office started with Modernization of the Slovenian National Seismic Network. The main goal of establishing modern Seismic Network was to set up an automatic earthquake alarm system which will be able to inform our seismology experts, proper authorities and public, about earthquake parameters in real time. In the beginning of the year 2007, 23 from 25 seismic stations are in operation. Each seismic station is equipped with a broadband three-component seismometer (CMG 40T, STS2 or CMG 3ESPC), Quanterra Q730 data logger and several communication and power supply related devices (modem, router, UPS unit Ě). Data transfer between central processing unit and specific seismic station occurs via lease line or wireless data transmission (GPS), where TCP/IP protocol is used. The main earthquake parameters (magnitude and location) can be evaluated automatically in a few minutes after earthquake had occurred, if seismic data from sufficient number of seismic stations is available. The main problem for data loss is a communication failure. In this work, the results of analysis of communication and operation for Slovenian National seismic network are presented. We were especially interested in the number and lengths of out-of-operation and out-of-communications periods for particular seismic station, where periods longer than two hours are critical (permanent loss of data). Moreover, we wanted to find out if in a specific data loss period more than one station was included. That kind of data loss would be critical for automatic procedure of earthquake parameters evaluation.