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Integrated seismic monitoring in Slovakia

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Two seismic networks are operated on the territory of the Slovak republic by two academic institutions. The Geophysical Institute of the Slovak Academy of Sciences operates the Slovak National Network of Seismic Stations (SNNSS, established in 2004) and the Faculty of Mathematics, Physics and Informatics, Comenius University Bratislava operates the Local Seismic Network Eastern Slovakia (LSNES, established in 2007). SNNSS is focused on the regional seismicity and participates in the international data exchange on a regular basis. LSNES, designed to be compatible and complementary with the existing SNNSS infrastructure, is focused on the seismicity of the eastern Slovakia source zone. The two networks share database and archive. Thus the expenses and workload of the joint data center operation are split between the two institutions. The cooperation enhances the overall reliability of the data center while does not interfere with the original scopes of the two networks.
Relational database with thin client based on the standard web browser is implemented. Maintenance requirements of clients are reduced to minimum and it is easier to manage the system integrity. The database manages parametric data, macroseismic data, waveform data, inventory data, and geographic data. The database is not only a central part of the data processing of the two institutions; it also forms a core of the warning system. The warning system functionality requires development of the modules which are additional to the standard seismic database functionality. The modules for editing, publishing and automatic processing of macroseismic questionnaires were implemented for the purpose of the warning system, and the database integrates macroseismic data with other seismic data.