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# Flood warning and forecasting system of the Slovak Republic

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The recent extreme floods in Europe and in Central Europe in particular, resulted into scientific and societal concerns about the reliability of short-term quantitative meteorological forecasts and flood forecasts also in Slovakia. The territory of Slovakia due to its geographic location and geomorphologic characteristics was often exposed to floods in the past. Recent floods endangered the health and lives of thousands of inhabitants. Besides the suffering of people in the flooded areas significant material damage was caused. The consequent flash floods in small mountainous basins affected 10 850 people in 75 villages. The flood took 47 human lives, 756 people became homeless, and 3618 people had to be evacuated, 2059 houses were flooded, 279 houses were destroyed and over 5300 farm animals perished. The total flood damages were estimated to be exceeding 20 mil. Euros. As a consequence of this and other floods, the performance of several current flood-forecasting methods was evaluated. In response the Government of Slovak Republic in 2001 has approved The National Program of Flood Protection till 2010. As part of the project “Flood Warning and Forecasting System of Slovakia (POVAPSYS)”, this is aimed at the considerable innovation of the flood warning and forecasting practices, started in 2001. One of the aims of the project is to considerably improve the quality of the information necessary for early and effective flood forecasting by the enlargement and modernization of the monitoring, processing and telecommunication systems of the Slovak Hydrometeorological Institute. In order to enhance the ability of the analysis and prediction of

precipitation fields (including quantitative precipitation forecasting) new meteorological forecasting methods and models will be implemented based on the further development of NWP limited area model ALADIN. The increase of the number of river sites subject to regular hydrological forecasting using hydrological forecasting models from 19 to 90 is planned. The existing rainfall runoff models will be upgraded by the use of LAM predictions and real-time weather radar data. As a consequence, the improvement of timeliness and accuracy of the flood forecast and warning is expected. The improvement of the operational co-operation between the flood forecasting and warning service and flood control bodies in Slovakia will also be envisaged.