GEPSUS-Geographical Information Processing for Environmental Pollution-Related Security with Urban Scale Environments
(ref. 983510)

In order to deploy adequate response measures, scientists from Italy, Montenegro, Slovenia and Israel have started collaborating since March 2011 on how to handle acute crises at an urban scale caused by exceptional pollution levels or pollutants released during a terrorist attack within an urban environment. GEPSUS tackles the emerging need for new IT technologies, improved preparedness, decision-making support, and adequate management of disasters where exceptional pollution levels may appear in or near densely populated urban areas.

The case studies tackled by GEPSUS will be located in the area of Podgorica, Montenegro. For Montenegro, the social relevance of providing tools to face air pollution crises is significant. According to governmental data sources, from 1991 to 2005 the area of Zeta has been affected by a significant 30% loss in soil fertility due to pollution caused by the nearby aluminium processing plant. The University of Montenegro will develop mathematical simulation models of air pollution dispersion. The developed models will be based on acknowledged modelling methodologies such as Lagrangian dispersion model, Box model, Eulerian model and Dense gas model assuming point and lateral release of pollutants in the area. The impact of modelling and simulation tools is very high both in social and economic terms as the availability of simulation and training tools can potentially save lives and property, with specific regard to the countries involved in GEPSUS.

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