Hardware – software system for simulation of accidents caused by hazardous gases

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Abstract

In this thesis is described real-time system for hazardous gases dispersion simulation in case of man-made accidents in an urban area. The system architecture, simulation methodology and preliminary results are elaborated. Emphasis is given on real-time embedded system that allow automatic data entry and on the spot responder interaction with situations. The threat zones, unsafe areas, unsafe traffic routes and emergency reports are calculated and then exported to the Google Earth and/or Google Maps browser via KML file format. The approach and system are verified in real conditions. The results demonstrate that emergency response authorities can use the proposed methodology and system as a cost effective and accurate support tool in case of industrial or deliberate air pollution incidents. It can also be used for experimental purposes, training or risk assessment.

Full version: http://www.gepsus.ac.me/2013.10.01.%20Vladimir%20Popovic%20final.pdf

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