

GIS System for Emergency Events Management

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ISPRS Special Session GIS System for Emergency Events Management Ammatzia Peled(1), Basheer Haj-Yehia(2)(1)University of Haifa, Department of Geography, Haifa, Israel, peled@geo.haifa.ac.il(2)PELLED GIS Mapping Ltd., Haifa, Israel, basheer@geo.haifa.ac.il; Key Words: GIS, Remote Sensing, Disasters, Emergency Events, Home Front.ABSTRACT Emergency events management has become recently a very significant issue. Real-time decision-making based on spatial analyses and using valid geographical data, is critical. In contrast to hard copy maps, the geographical information systems (GIS) enables the fusion of various geographical data from different sources and, thus, using better and more current information. This is quite important to disaster management in addition to the available automatic and rapid analyses, which lead to better and faster decision-making. This article presents a National GIS system which was developed to enable implementation of spatial analyses and activating a-priori defined parameters and scenarios. This system involves various infrastructure layers from different national authorities, such as: road network, oil pipelines, electricity networks, residential and other built-up areas, rescue services, hospitals, digital elevation models, ortho-images and other layers which are required for visual cartographic representations. The developed GIS system enables a variety of emergency analyses of different events, such as fire, pipeline explosion, missile attack (conventional and other) and "suspicious objects" to name a few. Using the GIS system combined with remotely sensed data enables the visualization of the affected zone (including photo-logging); reporting on the total affected population and the special activity centers (such as schools, shopping malls, factories and other large commercial and industrial and civic centers) which fall within different strike-affected ranges; mobilizing, automatically, the nearby and the relevant rescue centers; identifying potential observation spots and control posts; etc. The system allows both "real" event managing and in parallel training and study of possible scenarios for the use of home front and other rescue services trainees and experts, alike.