Implementation of The Flood Warning and Management System Using an Open Source GIS Software.

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Disaster management is divided into three main parts: Preparedness, which includes activities such as predicting and identifying a hazard area before an incident, a prevention phase that includes activities such as timely prediction and warning, surveillance. Monitoring and preparation of contingency plans before or during the incident; the response and relief phases, which are carried out after the incident, include damage assessment and progress management. An appropriate flood warning system is a key element in disaster and flood management. GIS is used as a tool to create a flood warning system. In this research, the main aspects of disaster management, as well as the use of remote sensing techniques in disaster management, are investigated. The goal is to integrate an Open source GIS system (MAPWINDOWGIS) and hydrologic models and create a flood alert system. This area was selected because of the availability of topographic information on the watershed of the one of area in Iran. Using the region's DEM information and tilt maps, it is possible to identify streets and roads that are not at risk and use then to minimize the possible flood damage and as getaway route to minimize further damage after the flood disasters.
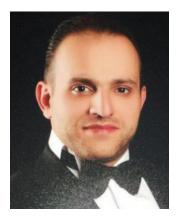
Due to the high cost of purchasing commercial GIS software and the lack of access to source codes and the possibility of expansion and further developments due to international sanctions in IRAN, with the exploration of open source software, we describe a practical example in such environment". In this article, MapwindowGIS software is selected"

In the open source world, libraries, APIs, frameworks and software components play an essential role in enabling users to develop complex application software using and combining with each other. This is especially true of spatial information systems. Since many of its complex analysis are derived from fundamental algorithms, the implementation of these algorithms and core functions is a major factor in the growth of open source software in this area.

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1. Author/s Biography

Mr. Molkaraei has over 15 years of professional experience with Geographic Information Systems (GIS), remote sensing, Laser Scanning ,photogrammetry, Facility(AM/FM) management and Urban GIS planner . He Educated Master Degree in Geomatics with an emphasis in GIS, Geodesy, and advanced spatial-temporal analysis. he has extensive project-management experience that includes budgeting; cost tracking; scheduling; and coordination with regulators, subcontractors. He is experienced in managing numerous GIS tasks to support engineering evaluation and cost analysis (EE/CA) studies; remedial investigation and feasibility studies (RI/FSs); and sampling and analysis plans. He is proficient with high-accuracy global positioning system (GPS) data collection.

Mr Mazeyar specializes in advanced geostatistical analysis and integrated calculations (3D) subsurface site models. he is skilled with GIS-based hydrologic/Urban planning/Corridor mapping analysis and with light-image detection and ranging (LiDAR) elevation data for advanced digital terrain and surface analysis. He is also Proficient in Visual Studio VB/C#, Python, Oracle Spatial, Postgresql,SQL Spatial, Microstation Development language, GML, Javascript,Inpho software,Envi,Pci,ERmapper ,ArcGIS Desk/Server 9.3,Intergraph Geomedia,OGC Standars methods, Rational rose

He also Advisor to the National Geographic Organization of IRAN For Automation of the National 1/25000, 1:50000 scale base map and Advisor to NLHO for Planning and implementation of the Tehran Municipality LIS (3,000 km2, 1/500,000 parcels)