Call for Papers

Special Issue on Spatial Computing in Emergency Management

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Emergency management aims to develop strategies and establish operations to decrease the potential impact of unexpected events (i.e., human or natural disasters). By quick response and rescue, it saves human lives from the secondary disasters and enhances the stability of communities after disasters.

Emergency management involves four stages: Planning and Mitigation, Preparedness, Response and Recovery. Geospatial applications have been extensively used in each stage of emergency management. Decision-makers can utilize the spatial computing to develop planning and mitigation strategies. Spatial computing models and simulation capabilities are used to exercise response and recovery plans during non-disaster times. They help the decision-makers understand near real-time possibilities during an event. Once disaster occurs, spatial computing will be instrumental in real time response and recovery activities. For example, in the Great Earthquake of Nepal in April 2015, the DigitalGlobe supplied plenty of remote sensing and geographic data for rescue.

Emergency management has drawn the attention of government entities and researchers. However, due to the multi-faceted complexity of emergency situations, plenty of data and models are not utilized in the whole process. How to integrate these data and models, such as the integration of the GIS data layers and dangerous chemicals diffusion data, is a big issue faced by emergency management. Furthermore, emergency management requires new geospatial technologies to support real-time response and recovery and the integrating of location-based wireless information streams under uncertainty. New research is required to address these critical challenges and advance our knowledge to effectively bridge the gap between spatial intelligence and fast, effective, efficient emergency management in the area of massive spatio-temporal data management, spatial database, spatial data analysis, spatial data visualization, data integration, model integration, cloud computing, parallel algorithms, internet of things, complex event detection, optimization theory, intelligent transportation systems and social networks to support better public policy through disaster detection, response and rescue.

The purpose of this special issue is to seek high quality research papers that contribute to the advancement of spatial computing in emergency management. Researchers and practitioners are invited to submit original research and application papers addressing topics including but not limited to the following:

- Spatial data and models for emergency management
- Data integration in emergency management
- Model integration in emergency management
- Geospatial data mining applications in emergency management
- Decision support based on spatial computing for emergency management
- Statistical analysis on massive spatio-temporal data for emergency management
- Spatial data analytics in emergency management
- Spatial agent-based modeling for emergency management
- Event detection techniques based on spatial computing in emergency management
- Opinion mining and sentiment analysis based on GIS for emergency management
- Prediction and decision based on spatial computing in emergency management
- Location based rescue resource management in emergency management
- Resource planning and scheduling base on GIS
- Cloud computing based on GIS in emergency management
- Web spatial data analysis in emergency management
- Web spatial data processing in emergency management
- Web of things based on GIS in emergency management
- Spatiotemporal intelligence for spontaneous planning

All papers will undergo the same rigorous GEIN review process. Please refer to the GEIN website for detailed instructions on paper submission. Please choose “Special Issue: Spatial Computing in Emergency Management” as the Article Type.