

Muscatatuck Urban Training Center

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Introduction

Many emergency response units are currently faced with restrictive budgets that prohibit their use of technology both in training and in real-time situations. Our work focuses on creating an affordable, mobile, state-of-the-art emergency response test bed through the integration of low-cost, commercially available products.

Mobile visual analytics provides a solution for analysts and first responders requiring advanced analytical insight by allowing in-field first responders to analyze and understand emergency situations through interactive, integrated data analysis and visualization based on mobility of the handheld devices using wireless network.

We have developed a command, control, communications, computer, surveillance and reconnaissance system that will allow small-unit exercises to be tracked and recorded for evaluation purposes.

Goal & Scope

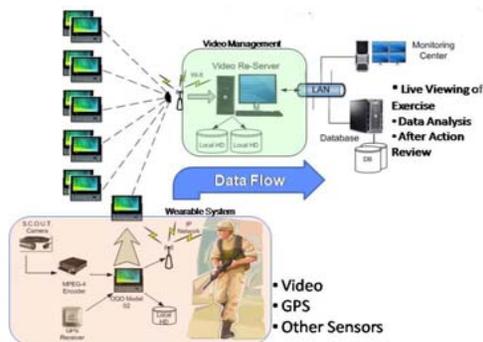
The goal of this project is to develop and demonstrate a mobile low-cost monitoring and visual analytic system for training, in-field analysis and review. Our system is focused on

1. Video / audio solutions for Urban Preparedness and Response Training
2. Visual Analytics for Situational Awareness
3. Social Networks for Emergency Response



Approach

- Visualize **simulated emergency situations** (fire evacuation using 419 intelligent agents) and analyze the results
- Visualize the **environmental information** in emergency situations to support the situational awareness of emergency
- Provide **increased EOC** and in-field **situational awareness** through integrated visual analytics
- **Track exercise responders** (up to 25) responding to and within a building
- **Display and interact** with actions and events during and after training exercises
- Provide a **national capability** to train, test and experiment with joint, interagency, inter-government and multi-national teams
- Demonstrate how aspects of **social networks** can aid in first responder scenarios (Presence and Status, Messaging, Collaboration)



Results

1. In-field Analysis

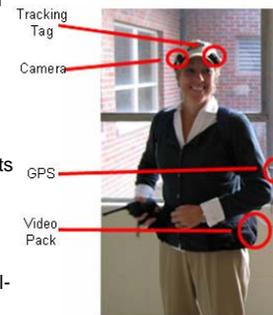
- Visualize positions, actions and status of sensors in a building
- Display detailed information of elected sensor information
- Visualize the training environment



- Provide increased EOC and in-field situational awareness through integrated visual analytics
- Analyze and evaluate effectiveness of the results of emergency training
- Suggest response priorities and plan actions

2. In-field Training

- Equip personal and assets with audio/video and location tracking system
- Track personnel responding to events in and around a building
- Monitor and record the exercise for real-time and post-operational review



3. Monitoring

- Personnel / asset tracking
- Video/audio recording & monitoring
- Integrated tracking and video display
- Real-time data, video, sensor, communications, and network integration



Future work

We have developed a prototype for mobile visual analytic system to support emergency response, planning, analysis. Our future work includes the evaluation of our training facility and visual analytics tools through planned emergency response exercises.

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For further information

Please contact dkingsmi@purdue.edu. More information on this and related projects can be obtained at <http://www.purvac.org>

