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Final Copy of Case Study

LOCATION:
Clemson, SC, US

ORGANIZATION:
Clemson University

YEAR:
2011

ORGANIZATION URL:
http://www.clemson.edu

STATUS:
Laureate

PROJECT NAME:
Emergency Management: Common Operating Picture Development

CATEGORY:
Safety & Security

PROJECT OVERVIEW

Emergency management services (EMS) increasingly require access to data and information that are integrated into a single identical display known as a Common Operational Picture (COP). A COP enables data and information to be displayed quickly, seamlessly, and in a consistent manner as opposed to one where data is transmitted and displayed using multiple systems and data streams. By having a single identical display, EMS agencies can greatly enhance their situational awareness in serving the public by increasing productivity and efficiency of critical operations. This project currently supports a consortium of five South Carolina counties providing emergency management visualization technologies and data management solutions, using Google Earth Enterprise that serves as the COP. The challenges faced in this effort have focused on understanding county administrative structures from E991 call centers to Emergency Management Departments. How to best integrate the Google Earth Enterprise Globe into existing data and information processes and work flows and developing new technologies that support mobile technologies to make these data and information available to first repsonders.. The prevailing economic environment is stressing local governments and has forced local governments to make reductions across all resources. Counties have diverse technological abilities and resources. County organizational structures and cultures vary. Ultimately, we are developing a regional COP system that is flexible and will enhance efficiencies. Discussions with EMS, law agencies, fire protection, and other first responder groups is occurring in two regions within the state to understand operational procedures, hardware, software, facilities and network capabilities and how these state entities can be integrated with county efforts both technologically and operational procedures. Achieving the project goals required a product that allowed for a comprehensive solution that captures geographic and topological data elements of South Carolina and supports real-time data and information aggregation using a variety of technologies from web services to mobile phone technologies. The ultimate goal is to enable communication both visual and textual between and among first responders in the field and emergency management command centers in

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the event of an incident. The Google Earth Enterprise system was determined to be the most optimal solution as this technology fuses local, regional and national imagery with critical infrastructure into a single globe. Additional data can also be integrated, such as 3-D models, video, environmental, plume and storm surge modes, and human communications. The Google Earth globe is ideal for emergency management operations in the field and the operations center. Critical globe data can be cached on users' computers, enabling access in the absence of Internet connections for use in the field or emergency situations when Internet access is disrupted. The Google Earth client also offers good performance in low-bandwidth environments.

SOCIETAL BENEFITS

This project increases the efficiency and delivery of emergency management services. Having accurate, timely, critical data at the fingertips of emergency personnel will result in increased response time, improved coordination and communications, effective resource deployment, and enhanced critical decision making, all of which benefit society's livelihood.

PROJECT BENEFIT EXAMPLE

Pickens County Emergency Management uses the Google Earth Globe in a number of ways but primarily for locating various infrastructure layers. For example, Fire Departments have fire hydrants, streets, roads and other infrastructure readily available. Additionally, Tier II chemical data is now being loaded which will help Fire Chiefs with Incident Command for HAZMAT spills. Recently, Pickens County used the bridge, culvert and watershed layers to assist with routing traffic during a recent exercise, which had as its cause, a seismic event. Most recently, working with Pickens County we have arranged the Google Globe layers using the Emergency Support Numbers (ESNs). This effort will allow First Responders to focus on only those layers for which they have responsibility and turn other layers on as needed. In Anderson County, Air Ambulance location data are being used to identify best solutions for critical transport victims at the scene of the incident. This differs from past solutions that were dependent upon a centralized call center having access to these data. The Google Earth Globe solution allows first responders on the ground to identify best solution for transport. The primary decision process includes identifying time difference between ground transport and air transport to the appropriate trauma center. Air ambulances in the upstate can only transport to a predetermined trauma center regardless overarching circumstances on the ground such as level of patient trauma and travel time.

IS THIS PROJECT AN INNOVATION, BEST PRACTICE? Yes

ADDITIONAL PROJECT INFORMATION

Clemson University deployed this Google Earth globe application in the Palmetto Shield 2010 / Red Dragon 2010 full-scale Weapons of Mass Destruction concurrent exercises. These exercises, conducted in Anderson County, South Carolina, was an emergency preparation drill in June 2010 that involved agencies from six counties working with state agencies, the U.S. Army, the Federal Emergency Management Agency, and the American Red Cross to simulate the coordination of efforts in the face of a real emergency. Clemson University and the Western Piedmont Regional Emergency Management Task Force were recipients of two prestigious awards: • The International Association of Emergency Managers Partners in Preparedness Award, October, 2010 • The Barrett Lawrimore Award for

Regional Cooperation, August, 2010.