

# Chapter 72

## Exercise24: Using Social Media for Crisis Response

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### ABSTRACT

*Can populations self organize a crisis response? This is a field report on the first two efforts in a continuing series of exercises termed “Exercise24 or x24.” The first Exercise 24 focused on Southern California, while the second (24 Europe) focused on the Balkan area of Eastern Europe. These exercises attempted to demonstrate that self-organizing groups can form and respond to a crisis using low-cost social media and other emerging web technologies. Over 10,000 people participated in X24 while X24 Europe had over 49,000 participants. X24 involved people from 79 nations while X24 Europe officially included participants from at least 92 countries. Exercise24 was organized by a team of workers centered at the SDSU Viz Center including significant support from the US Navy as well as other military and Federal organizations. Dr. George Bressler, Adjunct Faculty member at the Viz Center led both efforts. Major efforts from senior professionals EUCOM and NORTHCOM contributed significantly to the preparation for and success of both X24 and especially X24 Europe. This paper presents lessons learned and other experiences gained through the coordination and performance of Exercise24.*

### INTRODUCTION

New social media technologies offer organizations increased agility, adaptivity, interoperability, efficiency, and effectiveness. Social media software can be used by civilians, non-governmental organizations (NGOs), and governments around

the world for content creation, external collaboration, community building, and other applications. However, the ramifications of the proliferation of social media on national and international security exist for future operational challenges and obstacles as well as current traditional command and control systems of management for irregular, catastrophic, or disruptive events. Unfortunately, organizations are ill-prepared to move forward

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using such technologies, because of the lack of capabilities tests and exercises, not to mention the need for updated policies and funding. Failure to adopt and understand “fifth-generation command and control”—that is, the combination of technology and organizational response tools—may reduce an organization’s relative capabilities over time. Globally, social software is being used effectively by businesses, individuals, activists, criminals, and terrorists. Those that harness this invaluable resource are the innovative leaders of the future; it is imperative that this particular aspect of up-and-coming technologies be utilized to its fullest in the response efforts of citizens and organizations to disaster events.

While GIS technologies are increasingly used for practical disaster event applications, research focused on overall issues regarding the use of GIS, crowdsourcing, and social media in disaster analysis is lacking. Currently, there are inadequate tools and a lack of knowledge about the current tools for the organizational decision maker, which ultimately hampers their situational awareness and inevitably leads to preventable losses of life and infrastructural damage. It is often that during or after a disaster, we learn that what we thought would work, in fact did not, because what should have been tested beforehand was not.

Disasters can be global emergencies that affect civilizations, economies, and public health. There is a need for an international approach in order that relief efforts are effective, no matter the complexity or size of an event. This paper is an action report on an effort by San Diego State University’s Visualization Center, Google (and dozens of other companies), and the U.S. Navy to answer this call with the creation of Exercise24. The exercise tested how social media and crowdsourcing technologies could be implemented into humanitarian assistance and disaster cloud environments in an international multidisciplinary crisis simulation.

## BACKGROUND

Cloud computing and social media have contributed to the wealth of sharing information across the globe, emergency managers, NGOs, and governments alike are seeking similar information management benefits for disaster relief and humanitarian assistance. Numerous emergency managers have formed in these social networking worlds such as LinkedIn, Facebook, MySpace, YouTube, Flickr, Twitter, etc. The capabilities of GIS in cloud environments have allowed for data collection, data processing, and data sharing across the emergency management field. For emergency managers, much of the data collection and processing can be performed as part of the preparation work. Data can be imported or created to reflect what might typically be required for a responding agency to operate effectively and communicate more openly with the counterparts involved in the emergency.

When an emergency strikes, the infrastructure of the cloud environment needs to be flexible enough to work in the field and to incorporate the multiple layers of additional data that will be collected and disseminated as part of the emergency response. In such a dynamic and challenging setting, the software technologies must be easy to handle and manage for those with limited knowledge of GIS or other software technologies. An overly complex software tool that requires additional specialists to run could result in response delays or a bottleneck situation just when the need for information becomes most critical.

The potential uses of cartography and forms of GIS technologies like Google Earth have brought the need to include not only official responders, but also members of the public (Palen et al., 2010). The first uses of mapping, in response to a crisis, date back to 1845, when London was reeling from a particularly virulent cholera outbreak. At its epicenter, five hundred people died in the space of ten days. By mapping the location of the infec-

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