

THE VIRTUAL EMERGENCY OPERATIONS CENTER

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QUESTIONS BY WAY OF INTRODUCTION

The term Virtual Emergency Operations Center (Virtual EOC) is gaining currency as an emerging buzzword in emergency management. In a piece of electronic mail on 19 April 2000, Essential Technologies referred to how their new OpsCenter software allows operation of a Virtual EOC. This is but the latest in an increasing number of uses of the word “virtual” in conjunction with the primary coordination point for local and state disaster response.

Given the use of the term it becomes important to ask what is a Virtual Emergency Operations Center? How is it organized (a question that has not been fully or uniformly resolved for physical EOCs)? And how does work get done within one?

CHARACTERIZING THE EMERGENCY OPERATIONS CENTER

The Physical EOC

The familiar emergency operations center is a physical facility, for many years a facility designed to confer some measure of protection against fallout (US FEMA EMI 1993), and thus often underground. The well designed EOC achieved the ability to survive the impact of a disaster and sustain operations through hardening, back-up systems, and the capability to feed and billet its personnel for an extended period of time (US FEMA 1984).

However, emergency operations centers are more than facilities. As an empty room they have no functionality. The ability to actually do emergency management comes from the staffing of the EOC with a trained staff that is organized to do work, using standard operating procedures that ensure some level of uniformity of performance. That performance is guided by the policy direction provided by elected officials and by the jurisdiction’s emergency operations plan.

Perry (1991) lists a number of functions performed by emergency operations centers, as does the Federal Emergency Management Agency’s EOC’s Management and Operations Course (1995). When we consider the potential of Virtual EOCs, four of these possible functions become of significant interest, specifically information gathering and assessment, warning, coordination, and reporting.

Defining The Virtual EOC

The problem with the term “Virtual EOC” is that it can mean many things, to some degree depending upon the time of the use of the term and the person using it. In the late 1980s

and early 1990s simply having computers assisting in emergency operations, and later communicating by electronic mail may have been sufficiently on the cutting edge to make an EOC to some degree virtual. Considering that many EOCs today are not computerized, this may still be a possible benchmark of virtual status.

Today virtual may be interpreted as meaning that the EOC has a public presence on the Internet and uses that medium to provide information to the general public. Remote access to agency systems is possible for individuals working at home. It is therefore a small step for an initiative at Simon Fraser University that seeks to “establish an experimental virtual emergency operations center, where wireless information networks, interconnected to other fixed and mobile networks, allow managers to remain in the information loop, either until they can reach their EOC destinations, or as a substitute for physical presence at the EOC” (Anderson n.d.). The model of the future provided by Essential Technologies new software is that work can be done on a completely distributed basis without the requirement for a physical facility.

THE VIRTUAL EOC - A VOLUNTEER ORGANIZATION

In July 1999 a group of individuals organized in Virginia as a volunteer organization to establish and operate a virtual emergency operations center. Over the past 10 months, this facility has developed a capability to provide information services to emergency management and disaster response organizations. This Virtual Emergency Operations Center uses a distributed architecture with a widely dispersed staff—members have performed their duties during actual responses while being located in Colorado, various locations in Virginia, and London in the United Kingdom. Management of this dispersed workforce is achieved through use of the standard Incident Command System modified to suit virtual operations.

Strengths, Weaknesses, and Value Added

The strengths of this organization’s product is that it is tailored to the needs of its users. For example, the Virtual Emergency Operations Center has expanded its site to meet requests for additional products to provide information for Virginia Emergency Medical Services Task Forces during the development of a disaster (Kahn 2000). This site is designed only for use by emergency management organizations; it is not widely linked and is not listed with any of the popular search engines. And the site is inherently survivable. Not only is the primary site hosted on a commercial site hosting service located outside the organization’s primary Virginia service, but a backup site is located on a dedicated server in Colorado.

The weaknesses of this approach are primarily related to personnel issues. A virtual emergency operations center requires individuals who are both adept at the use of the Internet and other forms of electronic communications and fully qualified as emergency managers. Because communication is entirely electronic, a higher degree of proficiency is required than is common in most emergency operations center staffs; this drives a requirement for continual exercises to ensure currency of skills.

The primary value that the Virtual Emergency Operations Center adds to its client’s operations is the ability to widely and rapidly disseminate information to people who are not

located in a physical emergency operations center, but who require access to its information. This reduces the telephone traffic in the Emergency Operations Center, and allows units on standby to have a complete and current situation picture. The next step in this process is the development of evaluated and fused information (fusing is a process of consolidating information from all available sources) to support both field units and the support emergency operations center.

The Technological Solution

The emphasis in phase one of the development of the Virtual Emergency Operations Center has been on the use of simple technology and commercially available software in a building block approach. The primary Internet site is hosted at Tripod, a commercial site hosting operation. Chat capability, used for on-line staff meetings by the staff, a bulletin board software, used for an on-line incident log, and a listerv, available for users to provide archived automated electronic mail distribution, were all selected from commercial sources available on the Internet. This approach reduces costs to a minimum, reduces risks by distributing functions among a variety of vendors, and uses services that have incentives to have relatively robust operations. In developing this architecture the basic standard has been to find products that emulate processes for communications and information handling used in typical emergency operations centers.

One new method of handling information is being deployed to assist in the fusion process. ExlErate, a software that electronically reproduces status boards sold by PASE Incorporated, is being distributed to the staff to allow the exchange of status board information as Microsoft Excel files attached to electronic mail.

Personnel

The Virtual Emergency Operations Centers staff is all volunteer. Individuals are recruited without regard to geographical location; although most members are located in Virginia, one resides in Colorado. All have prior experience in emergency response, in emergency management, search and rescue, firefighting, and emergency medical services. A formal training program is used to initially qualify individuals, including standard National Wildfire Coordinating group Incident Command System training, and half the members hold state emergency management certifications in Virginia's Emergency Management professional Certification program. All are familiar with the electronic office environment. Probably most important is that all have an interest in experimenting with better ways to perform emergency management functions.

Processes

The staff is organized in a standard Incident Command System structure, with the size of the staff on a particular incident expanding or contracting as needed to meet the workload. All products are prepared for clients in much the same way that documents are produced in the Incident Command System. Each staff member writes his or her portion of the document, and the lead staff member produces a finished copy for posting in the site. The source of information

depends on the product needed, and may include information provided by the client or information gathered from outside sources.

Documentation

Procedures in use in the Virtual Emergency Operations Center are documented in a Virtual Incident Command System Field Operations Guide (1999) that mirrors the standard Field Operations Guides produced for the wildfire community (Firescope California 1996). Skill performance standards books are being developed to serve as the basis for formal qualification in duty positions. And documents used during operations are available as word processing templates.

Clients

The Virtual Emergency Operations Center currently supports the Coordination Teams, Emergency Medical Services Disaster Task Forces, and the Critical Incident stress Management Strike Teams of the Virginia Office of Emergency Medical Services. It provides similar support to the Virginia Voluntary Organizations Active in Disaster, including the preparation of their situation report. And it is currently working with the Salvation Army's communications system nationally to provide support to their amateur radio net control operators.

SUMMARY AND RECOMMENDATION

The State and Local Emergency Management Data Users Group is ideally positioned, with the right mix of membership and interests, to address the definition of a virtual EOC. As virtual EOC projects increase in numbers it is important to ask what value these add to emergency operations at the local and state level and to address how they can function most effectively. In a world that depends on standards as the basis for interoperability, we must ask whether the State and Local Emergency Management Data Users Group should be working to establish standards of practice, and perhaps even to develop an accreditation program, to encourage the development of current and future technologically competent emergency operations centers.

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