



THREE KEY FACTORS FOR EFFECTIVE INTEROPERABILITY

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Learning Requires Repeated Exposure

When responding to an accident or natural or man-made disaster, first responders must act out of instinct, based on their past preparation and experience. Professional educators have taught us that effective learning requires repeated exposure to a subject; not just a one-time course or explanation.

Learning is a matter of internalizing a new idea, process or activity. The new activity must become natural or second nature to us. This is especially true when an individual finds himself or herself in a pressure-packed situation. If not fully internalized, one naturally falls back to old, more familiar habits.

All of those involved in an incident, whether they are field first responders, dispatch personnel or crisis managers, must be ready at a moment's notice to respond; not just react. Time is always the enemy. Although on the surface it may sound counter intuitive, the "plan" is not important, but preparation is critical to implementing the proper response. General Dwight David Eisenhower once said, "In preparing for battle, I have always found that plans are useless, but planning is indispensable."

Cross Organization Multimedia Collaboration

Without a doubt, effective communication that allows real-time collaboration is the most fundamental element in responding to anomalous or emergency situations. In the past, voice communications was the norm. With recent advances in technology, security personnel and first responders at all levels and functions have new multimedia communication capabilities at their disposal - telephone voice, cellular, land mobile radio voice, live camera video, images, text and data files.



A Current Customer's Emergency Operations Center

Unfortunately, with these advances has come a certain amount of incompatibility. Different public safety and security entities have vastly different multimedia capabilities, resulting in the problematic sharing of data which impedes the creation of relevant, useful real-time information. The sharing of this data among different groups, agencies and entities is referred to as multimedia communications interoperability.

Three Key Elements for Success

A large number of solutions have been developed and deployed to address the interoperability issue among public and private agencies. Unfortunately, most of them have focused on the core technology and little on the "softer" issues that can render these systems totally ineffective and non-usable. Independent of the technological approach, to be effective any system must address three key issues: simplicity, flexibility and familiarity. These three issues are interrelated and must be addressed simultaneously in the design, implementation and use of the any system; most importantly in the training of the personnel likely to be involved.

1. Simplicity - Any system must be very easy to use and



Three key factors for effective interoperability

intuitive. During a security breach or disaster response, there is no time to reach for an instruction book or attempt to recall what an instructor said some time ago. The man-machine interface must be obvious. With employee turnover, shift operations and, hopefully, the rarity of events, complexity will inhibit the actions of the participants.

- 2. Flexibility** - When the call comes in or the alarm sounds, no one knows what has happened. Incidents are always different. The differences may be subtle or dramatic. The available resources and the required resources may be different. As the event evolves and time passes, new responses requiring different resources or strategies may emerge. Although we can plan and attempt to foresee scenarios, as Eisenhower implied, the process, not the actual plan, is the critical ingredient to effectiveness. The unforeseen will be the rule, not the exception. The tools cannot inhibit real-time adaptability.
- 3. Familiarity** - In time-critical situations, all users must be able to communicate and then collaborate with methods that are second-nature to them. Utilizing communications equipment, systems and protocols that are used every day is the best way to insure this familiarity. Therefore, from the field personnel's perspective, interoperability needs to be established, using their primary communications equipment. Breaking out special equipment and deploying it is not practical on a daily basis. Even if it were available when and where needed, unfamiliar equipment requires time and often causes confusion, which can inhibit responses at the most critical moment.

Real-World Example

An example of a system that meets all of these objectives is in operation today in New Jersey. This system provides a common multimedia communications overlay system that links several dozen different agencies together, allowing each agency or entity to use their existing communications equipment to communicate with each other. The network consists of law enforcement agencies responsible for dozens of communities spread across eight counties,

representing a population of five million people, as well as the statewide transit agency, various agencies' command vehicles, a rescue boat, 24 hospitals, shopping malls, a sport arena and numerous schools. Expansion of the system is ongoing, with additional facilities representing first responders, critical infrastructure and places of mass gathering being added throughout the state.

With such a diverse user base, a program was developed to insure that the system and the associated personnel remain ready-and-able to respond, when needed. The voluntary program involves random roll call tests conducted several times each week. During the roll call process, the roll call administrator contacts an agency and asks them to participate in a training incident. The invitee then brings appropriate voice and video resources into the mock incident and, optionally, contacts other participant agencies who would then add their own communications resources to the incident.

If any questions arise during the exercise, the administrator can provide real-time, hands-on training to address the issue. NIMS- and ICS-compliant procedures are used in the roll call process and if operational issues arise, appropriate follow-on training is conducted. A typical roll call exercise takes only one or two minutes due to the system's simple and intuitive user interface.

By varying the types of actions requested during the roll call process, users become accustomed to responding to a wide variety of scenarios. Finally, the process, which occurs two or three times a week, and covers all shifts, insures that both new and experienced users maintain their familiarity with the system. All participants have enthusiastically embraced the system and the roll call process. The underlying technology provides the means to communicate, but most importantly, the users make the system effective and are ready to respond when the need arises through the continuous reinforcement of the system's operation.