

# A Guide to Mass Notification Systems

by William Sako

A fire breaks out in a college dormitory. A suspicious package is found in the mailroom of a large corporation. A devastating hurricane inflicts massive damage on a large region.

These isolated events might read like the front page of the newspaper on an especially bad day, but they reflect the reality of living, working, learning and recreating in a world facing an unprecedented range of serious security threats. In response to the threat of these and myriad other potential catastrophes, the owners and managers of buildings ranging from high-rises and hospitals to educational campuses and high-occupancy venues are ramping up their efforts to protect the people who use their facilities.

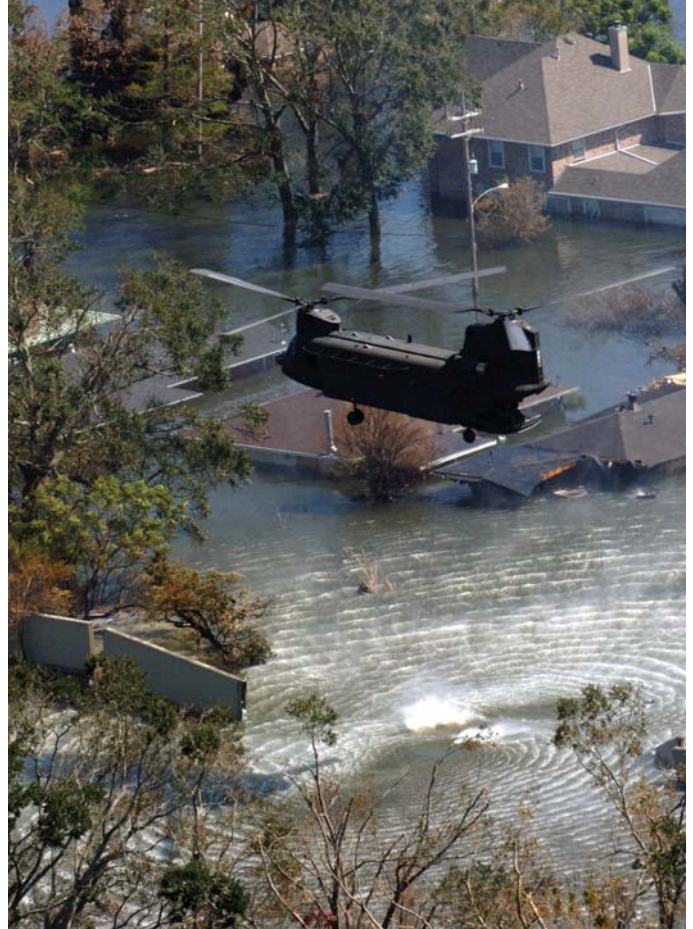
One way of addressing this pressing concern is by creating a mass notification system (MNS) combining a communications infrastructure with an emergency management strategy in order to deliver real-time information and instructions—whether within a single building, over an entire campus or throughout remote locations.

## MNS Basics

Whether the impending threat is natural or man-made, an effective MNS must be capable of alerting personnel and occupants as to:

- what is happening,
- what actions to take to maximize safety,
- when the event is over and
- when it is safe to resume normal operations.

Mass notifications systems protecting facilities in the private sector typically utilize existing high-speed voice and data networks to deliver prerecorded or live paging, text and graphical messages to wired and wireless communication devices. This alerting capability can involve the use of voice-enabled fire alarm systems, indoor/outdoor speakers,



visible signal systems, digital video/graphic signage, telephone systems, cell phones and pagers, radios, and wired and wireless computers.

A major goal of personnel alerting is to create interoperability between such various communication systems. The individuals who need to receive the mass notification message are mobile and, therefore, not always in hearing distance of a loudspeaker or vocal alarm, so other forms of communication must be included in MNS design to ensure a successful link between sender and receiver in an emergency situation. Equally important, though often overlooked, is the necessity of developing specific plans to account for a realistic range of potential emergencies. The purpose of emergency planning is to establish appropriate procedures and actions for a variety of different events. By planning ahead of time under nonemergency conditions, both general emergency procedures and situation-specific actions can be developed to provide maximum personnel, occupant and responder safety.

## Eight Steps to Building a Successful MNS

As the adage says: “Plan your work and work your plan.” The more preparation put into MNS planning, the better protected personnel, occupants and responders will be. An independent consultant with experience in the fields of life safety, security, communications and emergency response and unimpeded by ties with proprietary communication



system manufacturers can play an important role in the design and implementation of an effective MNS.

### **Step 1: Analyze the Threats to the Facility and its Occupants**

Whether it be a single facility, a campus-type complex or a global organization, threat analysis should be comprehensive. The purpose is to identify vulnerabilities and deficiencies as well as strengths. The resulting analysis will help in determining what could happen when, where and under what circumstances, and the resulting report will provide the framework upon which a workable MNS strategy can be built.

### **Step 2: Gather Input on How Your Facility Operates on a Daily Basis**

This step involves a thorough investigation of how a facility operates under normal conditions. The security of the facility should be evaluated from an architectural, technical and procedural standpoint. What communication systems are in place? Are they up to current standards? How do they interact with one another? What type of safety and security staff do you employ? Are they properly trained? What emergency response procedures are currently in place? The answers to such questions will provide the framework for the next step.

### **Step 3: Develop a Master Plan**

A comprehensive MNS strategy needs to address the both short- and long-term requirements of a facility. A comprehensive master plan provides an effective approach to personnel and occupant alerting and emergency response in a single, integrated document. The objective is to meet immediate mass notification needs while addressing the complexities of interoperability between disparate wired and wireless communication systems. An intelligent master plan also helps to satisfy longer-term emergency preparedness objectives in an organized and cost-effective manner.

### **Step 4: Design the MNS**

The alertion/mass notification system must be designed to perform reliably in all foreseeable emergency situations. That is to say that it must offer a site- and situation-specific

mass notification capability integrating many or all of the following subsystems:

- indoor/outdoor speakers;
- voice evacuation/fire alarms;
- telephones, cell phones and pagers;
- radios and wireless devices;
- digital video/graphic signage;
- LANs and WANs;
- mass notification message control; and
- digital voice/text/graphic messaging.

### **Step 5: Develop an Emergency Action Plan**

This details each potential emergency event and provides a step-by-step plan integrating the actions of multiple departments or units such as facility management, operations, security, human resources and public relations to ensure a rapid, coordinated and effective response.

### **Step 6: Create a Phased Implementation**

Implementing the proper MNS for a facility requires the same discipline as managing a new construction or retrofit project. Minimum specifications must be developed, an appropriate budget prepared, and bids from qualified suppliers and contractors evaluated. Then, once the contracts are awarded, it becomes a matter of managing the installation process—from contract administration and quality control to final testing and system acceptance.

### **Step 7: Train Staff and Conduct Drills**

An MNS team (which will ideally include senior staff of likely first-responders) needs to be thoroughly familiar with the procedures for a facility's emergency action plan, their individual roles and responsibilities under each scenario, and the operational features of the MNS employed. At minimum, training should be provided and drills conducted in which building occupants are either evacuated to safe areas or directed to shelter-in-place depending upon the simulated emergency, and the results of such drills should be used to evaluate the MNS strategy. *(continued)*

## Mass Notification Systems (continued)

### Step 8: Conduct Periodic System Reviews

In order to maintain the highest possible performance, an MNS should be reviewed regularly to account for operational, occupancy or other changes specific to a given facility as well as new potential threats and technological advances.

### Conclusion

The concept of MNS was born out of the collective inability to maintain communications and direct building occupants to safety during the events of 9/11, which prompted the U.S. Department of Defense (DoD) to develop a set of *Unified Facilities Criteria* that—among many other things—mandate the installation of MNS in all DoD facilities worldwide. More recently, President Bush signed an executive order to create a National Public Alert and Warning System in order to enhance the nation's ability to respond during a crisis by interfacing public- and private-sector MNS.

If there is a silver lining, it is that quantum leaps in communication technology offer a wide array of means for the delivery of timely, detailed information to facility personnel, occupants and emergency responders—whether across town or across the globe. From a suburban apartment complex to a sprawling college campus to the far-flung



offices of an international corporation, developing and maintaining an effective MNS is not just a hopeful ideal but a realizable goal. ♦

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