INTRODUCTION

Fire and EMS services across the United States still rely on paging technology to communicate emergency incident information. The infrastructure for these paging systems is typically owned, operated, and maintained by the local government or agency to ensure coverage includes as close to 100% of the jurisdiction as possible. This paper proposes the use of datacasting technology to serve the paging needs of public safety and uses North Carolina as a test case. This concept could lead to cost-sharing, greater collaboration across jurisdictions, and reduced response times for mutual aid requests. The public deserve the best possible response from the public safety sector and therefore, public safety deserves the best technology available in order to achieve their mission. Note that certain topics, such as automated voice systems, smartphone apps, alphanumeric pagers, fire station alerting, and CAD-to-CAD interfaces are not discussed here for the sake of focus and clarity.

THE STATE OF PUBLIC SAFETY PAGING

Currently, paging is still widely used in the Fire and EMS disciplines for emergency call alerting. This can be true for both volunteer and staffed/career agencies. In these instances, paging is generally only a one-way page sent from fixed infrastructure to a device worn by a member of that agency. Call alerting can occur for agency members while they are at a station, at home, or even as they go about their daily jobs. A Public Safety Answering Point (PSAP), or 911 center, send the page to a voice pager with information about the location and type of emergency. This type of pager allows the responder to hear the dispatch. These devices are also known as a Tone & Voice Pager, Fire Pager, Voice Pager, and/or by the common vendor models such as the Motorola Minitor Pager, Unication G4/G5 Voice Pager, SwissPhone Voice Pager, or Apollo Voice Pager, just to name a few.

This voice pager has a speaker listening to a specific radio channel with a ‘selective’ call setting that will keep the speaker silent until a trigger (such as a specific set of tones) is heard on that channel. When a trigger is heard, the pager will then alert the user, either with a special beep and/or vibration, and unmute the speaker so that the dispatcher can be heard. There are a number of manufacturers of these voice pagers, each with a number of different features such as audio recording (stored voice), a display screen, customized audio alerts, etc.

The selective call feature allows responders to be alerted only for emergency incidents or for other 911 Center information that is targeted for a specific group. The group being targeted can be a fire department, a particular station within a department, or even a specific fire truck or officer. The criteria used for determining how many groups is a mutual arrangement between the responding agency and the 911 Center that dispatches that agency. The criteria will often take into consideration such factors as: the number of agencies served by the 911 Center, the operational nature of those agencies (career, volunteer, staffed stations, etc.), and the call volume of both the agency and 911 Center.

Fire and EMS services have to be assured that this information will be delivered to the responders in the field. It is not viable to rely on commercial service for this type of mission critical communication and industry best practices do not recognize such systems, as they are not controlled by the agency or a governmental partner. In other words, commercial cellular or commercial paging services are not approved by organizations such as the National Fire Protection Agency (NFPA) and Insurance Services Office (ISO), who provide guidance on such communication systems. For this reason, each agency is likely to purchase (or lease) paging infrastructure and equipment to serve their response district, and multiple transmitters would be needed to serve a large area or a regional system. This is typically done in coordination with the 911 Center as the information originates there and is then sent out to responders.