

Finally, a Controllerless PSAP

by Harvey M. Becker

Government demand on PSAPs nationwide, to comply with E9-1-1 mandates, is increasing at a rapid pace. For many small or rural 9-1-1 centers, the cost of becoming technologically compliant puts tremendous financial pressure on 9-1-1 managers.

At the Montcalm County Central Dispatch Authority in Stanton, Michigan, our January cut-over to new 9-1-1 equipment has proven, through increases in operator efficiency and a reduction in call response time, that rural PSAPs need not miss out on necessary technology due to cost.

Time Ticks Away...

Find the Montcalm County Central Dispatch Authority, in Stanton on Highway 66. With a population more rural than urban, the center provides centralized dispatch, and acts as a primary PSAP receiving 9-1-1 calls for a surrounding area of 800 square miles. Fortunately central Michigan has no earthquakes or dense population issues to deal with, but there are many lakes. Michigan has more registered boats than any other state, including Florida. During the summer, Michigan experiences lake-related tourism that doubles the center's call volume. Tornadoes and severe weather combined with the extensive usage of lakes, have always been a safety concern to Montcalm emergency authorities.

In 1996, Montcalm County realized that maintenance on our aging first-generation 9-1-1 equipment was becoming more costly. Our primary goal as an agency was to maintain call processing speed and operator efficiency for our citizens. First, the new technology required to meet the established industry standards by the ADA and the FCC was unattainable with our existing system. Secondly, we had a system with trunks coming in from two separate selective routers and required two different transfer procedures depending on where the call came from. During times of emergency, dispatchers found the procedure awkward.

Before implementing a new system, we addressed specific issues concerning our operator and system efficiency:

- Call processing time. It took between 7-15 seconds for a call to reach a call-taker, depending upon whether the call was routed through one or two selective routers.
- Workspace clutter. Two phones were positioned in front of each dispatch position, one for administrative functions, and another for 9-1-1 calls.
- Too many screens. In order to see a caller's ANI, a separate display unit was required.
- Out of date equipment. TDD equipment was unreliable and not compliant with the Americans with Disabilities Act (ADA).

As the Director for the Montcalm County Central Dispatch Authority, I am responsible for the administration of the Central Dispatch Center, and the county's 9-1-1 personnel, equipment and training coordination. It was clear an upgrade to our system was imminent. Redundancy and inadequate response time dictated a need for equipment with more options and better communication capabilities. Although Montcalm needed an expandable system with the digital capability to provide leading-edge technology for at least ten years, we could not afford to purchase the controller and operator equipment required to

bring Montcalm up-to-speed technologically.

The Controllerless PSAP

GTE suggested an interesting approach that offered us everything we needed. By linking the Montcalm Central Dispatch Authority to their Central Office based in Alma, Michigan, our system would consist of remote answering positions hooked into a centralized selective router. The central office houses a CML ECS-1000 selective router and an HP 3000 ALI database and also provides prime service to the counties of Gratiot, Clinton, Isabella, Montcalm, and Shiawassee.

"Counties with limited financial resources cannot absorb the costs of owning their own controller equipment. Remotely connecting PSAPs to a centrally located network-based controller and data base, offers counties a workable, affordable and sophisticated 9-1-1 solution," commented Jean Levandowski, Senior Account Executive E9-1-1, GTE Telecom Marketing Corporation.

The CML ECS-1000's capabilities allow Montcalm County access to the sophisticated features of ANI/ALI control, automatic call distribution (ACD), and integrated TDD.

After careful research and product evaluation by myself and the Montcalm County Central Dispatch Authority, the County Board of Commissioners approved the selection of GTE and CML Technologies Inc. Also selected was the SeNTinel 9-1-1 Windows NT operator console with touchscreen capability, for use by Emergency Communications Officers. This piece of equipment was exactly what we wanted. Longevity and a stable open-architecture operating platform are important and with the NT environment, our applications run in conjunction with each other.

And Then It Happened...

Ten days of installation, system testing, and operator training occurred prior to system cut-over on Thursday, January 29, 1998. During installation the two obsolete radio consoles were removed and replaced with new furniture; a third answering position was added to provide additional capacity service during peak hours and disaster recovery.

The dispatchers maintained their energetic, positive attitude throughout the entire process. At times the room was packed. With three dispatchers, the continuous flow of administrative staff and the presence of three or four GTE installation technicians all in the same space...you can picture the amount of activity! Cut-over occurred smoothly.

Call transfer is greatly simplified and dispatch operations much improved with the new equipment. Touchscreen capability, Computer Telephony Integration (CTI), Intelligent Workstation (IWS), integrated TDD, and ringback are easily accessible to Emergency Communications Officers. The new system allows Montcalm County Central Dispatch full compliance with the FCC mandate for wireless, and with ADA regulations for providing 9-1-1 service to persons with disabilities.

Emergency Communications Officer Pluses. Standing in the Montcalm County Dispatch Center the most notable changes have been to what is not seen. Touchscreen versus keyboard use. Dispatch calls are transferred by touchscreen functions resulting in a 50% increase in operator efficiency. The remaining mouse and keyboard are used primarily for data entry and for changing system parameters.

Computer Telephony Integration (CTI). Where two phones previously existed, a single phone now accesses all lines, permits voice transfer through the system, and allows for one-button transfers, radio communications, 9-1-1 and administrative functions.

TDD. We were delighted to get TDD at each workstation. Prior to the new system we had an old-style freestanding TDD machine with a telephone handset. By placing the handset on a cradle the connection would be made. Having a proper connection was never guaranteed, and since we had one device for the entire center, all TDD calls had to be transferred over to the appropriate workstation. With the new equipment there is no delay. We even have the ability to handle multiple TDD calls.

Windows NT. Most of our dispatchers received PC-based training on the Law Enforcement Information Network (LEIN) prior to the GTE installation. It wasn't a challenge for the Emergency Communications Officers to pick up on the new software, especially with its touchscreen functionality.

Screen Customization and Operator Control. The ability to change and customize screen and object colors has been very important to dispatchers. They feel as if they have control over their environment and see this as a very positive change.

"Dispatch operations are a lot easier now," commented Joann Boss-Pyle, Emergency Communications Officer with the Montcalm County Central Dispatch Authority. "Screen information is better displayed and the SeNTinel's settings are fully adjustable. We use ringback capability (15% of the time at present), and can pull up call histories on previous calls. These features are particularly handy when dealing with crank callers and 9-1-1 hang-ups."

Most notably, "My dispatch partner can now join in on calls in progress simply by pressing a button. If we receive a complicated 9-1-1 call, we work together."

Upgrading into the Future

We are the first site in Michigan to use SeNTinel 9-1-1. Montcalm County Central Dispatch's new equipment has dramatically improved call processing time and center operations. In February an accident involving multiple vehicles occurred. Within 1-2 minutes after the incident, accident related calls arrived simultaneously; we handled each call quickly and efficiently.

We have already tweaked certain system parameters to suit our needs. Both GTE and CML have been very supportive in providing us with service and assistance. Our goal is to have our system in operation for more than 10 years. By using the GTE central office selective router and remote PSAP solution, we need only upgrade our existing equipment to remain technologically advanced.

Comments

The new system provided by GTE has improved the level of 9-1-1 service to the citizens and tourists of Montcalm County. Since system cut-over in January, the Montcalm County Central Dispatch Authority has seen a decrease in monthly expenses resulting from reduced toll charges. Not only have call-processing time and operator efficiency improved, but the Dispatch Authority is now compliant with the FCC 94-102 Phase I requirement for the provision of wireless service, and with the regulations in place by the ADA, NENA and the Department of Justice for TDD functionality.

Background on the FCC

In July 1996, the Federal Communications Commission (FCC) took several important steps to foster major improvements in the quality and reliability of wireless 9-1-1 services. First, by April 1, 1998, the FCC directed wireless carriers to be capable of delivering wireless E9-1-1 information to PSAPs. Second, by October 1, 2001, wireless carriers must have the capability to identify the latitude and

longitude of a mobile unit making an E9-1-1 call within a radius of no more than 125 meters in 67 percent of all cases.

Background on the ADA

The Americans with Disabilities Act (ADA) gives civil rights protections to individuals with disabilities. It guarantees equal opportunity for individuals with disabilities in public accommodations, employment, transportation, State and local government services, and telecommunications. The ADA, now almost seven years old, is one of the top priorities of the Department of Justice. At the 1997 NENA Annual Conference in Baltimore, U.S. Attorney General Janet Reno expressed her appreciation of NENA's active efforts in promoting ADA compliance.

The ADA states that State and local agencies that provide emergency telephone services must provide "direct access" to individuals who rely on a TDD or computer modem for telephone communication. Telephone access through a third party or through a relay service does not satisfy the requirement for direct access. Where a public entity provides 9-1-1 telephone service, it may not substitute a separate seven-digit telephone line as the sole means for access to 9-1-1 services by non-voice users. A public entity may, however, provide a separate seven-digit line for the exclusive use of non-voice callers in addition to providing direct access for such calls to its 9-1-1 line.

Harvey Becker is the Director for 9-1-1/Central Dispatch Authority, in Montcalm County, Michigan. Mr. Becker currently belongs to the Association of Public Safety Communications Officers and the Michigan Communications Directors Association.