The Charlotte-Mecklenburg Police Department (CMPD)

Southern Police Department Expands Mobile Surveillance Capabilities With Sierra Wireless Intelligent Gateways



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The Charlotte-Mecklenburg Police Department (CMPD) provides public safety services for the city of Charlotte and Mecklenburg County in NorthCarolina. The department was formed in 1993 by merging the Charlotte City Police Department with the Mecklenburg County Rural Police Department,and the 1,717 sworn offi cers now patrol the entire 438 square miles of Mecklenburg County, protecting more than 800,000 residents.

BUSINESS CHALLENGE

The sheer size of both the CMPD and the geographic area the department protects creates logistic and operational challenges in coordinatingdivisions, districts, and personnel. To streamline operations, the CMPD’s command staff has established a unique infrastructure to help fi eld offi cersby anticipating problems and providing real-time intelligence, allowing them to respond more quickly to criminal activity.

For years, the CMPD has utilized public safety technology. Automatic license plate recognition (ALPR) technology was fi rst introduced by the departmentin 2006 with the installation of LPR cameras on four marked police vehicles. As the host city for the 2012 Democratic National Convention (DNC),Charlotte enhanced their technology infrastructure to ensure public safety during the convention. Since the DNC, the Charlotte Mecklenburg PoliceDepartment has dedicated this technology to assist with law enforcement and resolving criminal investigations and has expanded its network toinclude both fi xed and mobile systems that rely on always-on cellular

communications for real-time intelligence data transfer.

SIERRA WIRELESS AIRLINK® SOLUTION

With funding from the DNC federal security grant and an Urban Area Security Initiative (UASI) grant, the CMPD was able to enhance theirinvestment in automatic license plate recognition cameras and software from Sierra Wireless Solution Partner, NDI Recognition Systems (NDI-RS).

In total, the department increased their LPR technology to 89 fi xed LPR cameras, four mobile systems, two portable Rapid Deployment System(RDS) units, and thirteen Road Warrior LPR trailers featuring the Sierra Wireless AirLink® gateways for high performance, mission-critical cellular communication and GPS capabilities.

“We evaluated a number of devices from other vendors before selecting the AirLink gateway,” explained Chris McKissick, NDI-RS’ director of sales forthe US public safety market. “We’ve always has a strong relationship with Sierra Wireless, and the gateway was the most user-friendly device that wetrialed. It best fi t the requirements we needed to fulfi ll the mission of our customers.”

The AirLink gateway’s rugged military spec design (MIL-STD 810) and waterresistant aluminum casing (IP-64 rating) enables it to withstand the extremetemperature changes, humidity, shock, and vibration found in mobile applications. Supporting 4G LTE and 3G networks, the gateway is ideal for portable fi eld deployments and offers the option to add Wi-Fi, more I/O, or Ethernet ports if required. AirLink mobile gateways also support SierraWireless’ device management cloud application, AirVantage™ Management Service, which remotely confi gures, deploys, and monitors the gateways over-the-air.

The NDI-RS Road Warrior system provides portability coupled with covert ALPR functionality. Looking and functioning as a speed or variablemessaging system (VMS) trailer, the Road Warrior houses a complete ALPR system and connects seamlessly to NDI-RS’s back offi ce platform viapersistent, reliable communications provided by the on-board AirLink GX Series gateway. The Road Warrior can monitor hotlists, collect intelligence for later investigations, and trigger alerts to patrol vehicles, dispatch centers, or offi cer emails. In addition, the GPS capabilities provided by the AirLink GX Series gateway makes it easy to keep track of Road Warrior deployment locations.

“As a member of the Sierra Wireless Solution Partner Program, when we need support we have an entire team at our disposal - from engineers to sales,” said McKissick. “We can communicate across teams to share what’s going on and work in concert to quickly get issues resolved or new devices up and

running in our systems. You can’t put a price on that kind of value.”

The NDI-RS solutions are monitored by trained patrol offi cers and supervisors in the fi eld and overseen from the CMPD’s Real Time CrimeCenter (RTCC), a 24-hour command center staffed by trained detectives who support the CMPD’s fi eld offi cers. The RTCC also monitors more than800 video cameras throughout the metropolitan area. Under specifi c policy and guidelines, the CMPD reserves the privacy of citizens by restricting theuse of their technology to law enforcement purposes and enforces retention periods for all camera and LPR footage.

The RTCC primarily focuses on crimes in progress and priority alerts. LPR cameras alert the RTCC to suspect or wanted vehicles, and theRTCC offi cers can use the video camera system to view activity. All the video cameras have pan-tilt-zoom capability, so RTCC offi cers can followincidents and relay information and intelligence to offi cers in the fi eld. A dedicated workstation provides access to the NDI-RS back offi ce system,but every workstation in the RTCC, as well as selected trained patrol offi cers in the fi eld, can access the LPR systems.

RESULTS

Through the combination of advanced ALPR technology from NDI-RS and unfailing communications from Sierra Wireless, the RTCC is able tosupport the offi cers in the fi eld with real-time crime analysis and visual reconnaissance. The center offers both a real-time awareness of conditionsin the fi eld, coupled with a wide-ranging surveillance capability. RTCC offi cers can provide fi eld offi cers with alerts and background information onsuspect vehicles based on license plate information drawn from the National Crime Information Center (NCIC) and state and local databases. In addition,they can monitor situations using video cameras, document criminal activity, track suspects on the move, and provide information to assist in pursuits.

“The AirLink gateway is one of those mission-critical cogs in the wheel that we never have to worry about because it always works as intended,”concluded McKissick. “It’s really nice to have that kind of confi dence in a partner.”

APPLICATION

- Intelligent Surveillance & Traffic System

CUSTOMER CRITICAL CHALLENGE

- Mobile communications solution for surveillance initiatives across expansive geographic region
- Required persistent, secure wireless communications, GPS capabilities, and rugged design for in-vehicle environmental conditions

SOLUTION

- AirLink® mobile gateways provides reliable, secure 3G and 4G LTE cellular communications, GPS services, and a military spec design for mobile and industrial applications

BENEFITS

- Secure, reliable connectivity for access to critical location and situational awareness data
- Reliable GPS with advanced features such as dynamic fi ltering
- Rugged design for mobile and industrial environments
- High value partner program for comprehensive support across resource areas