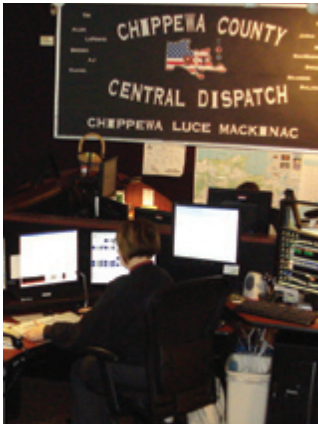


Chippewa County Improves Emergency Response in Michigan's Upper Peninsula

4.9 GHz PTP Network Ideal Solution for Regional Dispatch Center



“We needed to improve public safety communication and we wanted to achieve economies of scale. So in November of 2008, Mackinac and Luce Counties contracted with Chippewa County to form a high-performance regional dispatch center.”

– Tim McKee, 9-1-1 Director, Chippewa County

Situation: The need for reliable, cost-effective connectivity with the state's emergency response system

The eastern end of Michigan's Upper Peninsula consists of three counties — Chippewa, Luce and Mackinac — that are home to a wide range of residents. The area boasts a variety of locations and lifestyles: the bustling port cities of Sault Ste. Marie and St. Ignace and numerous rural communities as well as the tourist mecca of Mackinac Island. This mix of urban, rural and seasonal populations combines with long, hard winters and an area of 3,486 square miles to create a challenging emergency response environment.

To improve operations across the region, the three counties agreed to centralize emergency dispatch operations. Because it possessed the newest network and equipment, Mackinac and Luce Counties agreed to contract with Chippewa County to create a leading-edge regional dispatch center. There were three main objectives: help reduce response time, improve efficiency and increase safety for residents of the region. There was one major challenge: to convince the state of Michigan that wireless connectivity to the Michigan Public Safety Communications System (MPSCS) would not only be affordable, but also reliable and secure. Complicating matters was a very aggressive timetable. The goal was to have the system operational by December 1, 2008.

Solution: High-speed Motorola 4.9 GHz Point-to-Point wireless network

To accommodate additional call volume from the other two counties, Chippewa County needed to replace its existing dispatch system with a solution that delivered more bandwidth. The county explored a number of different technology alternatives for building the new network. Traditionally, Michigan dispatch operations have used licensed microwave-based solutions for data transport. But traditional licensed microwave networks can cost tens of thousands of dollars per link, well beyond the project's budget. Another possibility was leasing T1 lines from telephone providers, but T1 lines have their own issues. One is cost; monthly recurring lease costs can run from \$300 to \$1,300 per month per line. Other problems include reliability, lack of availability of T1s due

CUSTOMER PROFILE

Agency

Chippewa County,
Michigan, U.S.A.

Industry

Public Safety Dispatch and
Communications

Motorola solution

- PTP 49600
Wireless Ethernet Bridge
- PTP LINKPlanner tool
- MCC 7500 console

Solution features

- Integrated three-county regional dispatch center
- IP-based wireless connectivity
- Easily repaired indoor radios
- FIPS 197 compliant

Results

- Reliable broadband performance
- No recurring monthly leased line costs
- Substantial cost savings
- Enhanced security

MOTOROLA PTP 49600 CAPABILITIES

The Motorola PTP 49600 wireless Ethernet bridges can be configured using 5, 10 or 20 MHz channels and can serve ranges up to 124 miles (200 km) and provide data speeds up to 200 Mbps. The system delivers up to 99.999 percent availability even in non-line-of-sight environments, across long distances, over open terrain or water and through extreme weather conditions. These strong capabilities were highly valued by Chippewa County and critical in their product selection decision.

“The PTP system’s reliability was exactly what I envisioned and exactly what I wanted. I like it so much I’m looking to use a similar system to replace another existing T1 line even farther away.”

– Tim McKee, 9-1-1 Director, Chippewa County

to the remoteness of the desired location, timing of deployment and loss of control due to dependence on an outside supplier.

Ultimately, Chippewa County selected a Motorola PTP 49600 wireless Ethernet bridge, utilizing the 4.9 GHz licensed public safety spectrum. The system consists of an MCC 7500 series console and a 4.9 GHz Point-to-Point wireless Ethernet bridge for connectivity to a gateway to the MPSCS network. The MPSCS is located approximately 15 miles from Chippewa County and the link must traverse significant obstructions in the way of trees and foliage.

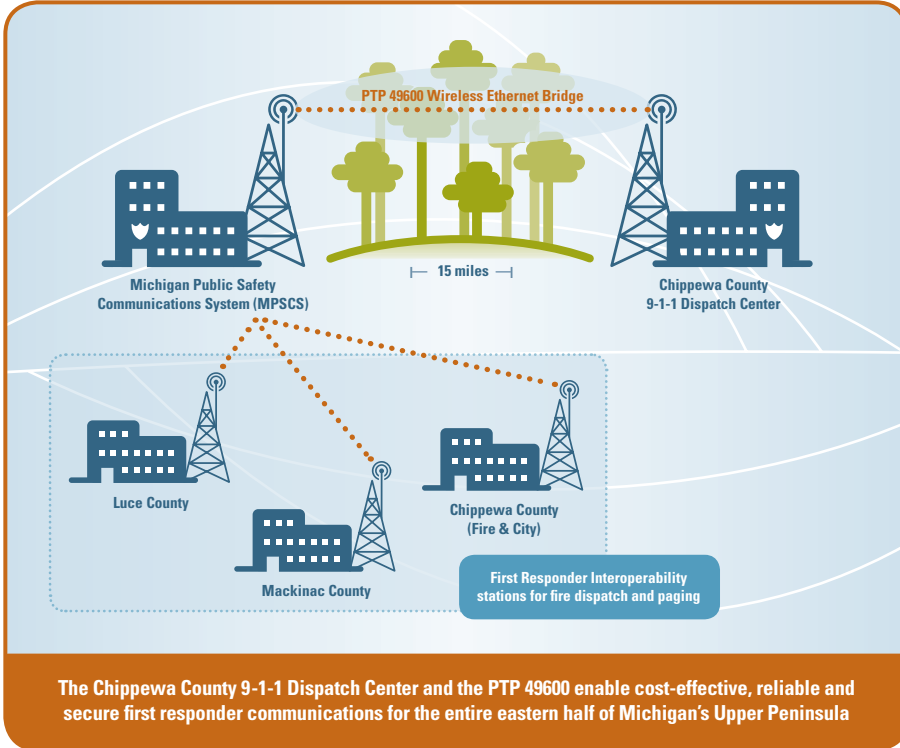
the path to prevent signal degradation due to the interior radio location.

To the counties’ delight, the system became operational in advance of the target date, on the day after Thanksgiving. Results have been outstanding, with the system seamlessly handling the increased call volume of approximately 200 calls per 24-hour period. Even more important, response has been swifter, service has been more effective and public safety has been enhanced.

Convincing the state

As provider of the MPSCS public safety communications network, the state of Michigan, accustomed to working with licensed microwave, was initially concerned about the use of an IP-based network to connect to its system. “Local communities were interested in the use of wireless as a much less expensive way of connecting to our state backbone network,” says Theron Shinew, deputy director, MPSCS. “At first, we had some security and reliability concerns.” State officials wanted to make sure the counties’ network would not harm the statewide system in any way. They wanted assurance that the IP system would not infect the MPSCS network with viruses, that it would not be vulnerable to network intrusions and that it offered advanced encryption standards to ensure communications privacy.

To validate performance of PTP radios prior to actual deployment, MPSCS tested a wireless underbuild system. (A wireless “underbuild” is a solution that cost-effectively adds capacity to a licensed microwave network using existing towers and cabling.) “We ran a month-long pilot program using a wireless PTP 6 GHz link underbuild solution,” states Shinew, “The network performed flawlessly and so we approved the use of Chippewa County’s wireless PTP solution.” The regional dispatch center system was successfully deployed and is providing exceptional performance, security, connectivity and ROI.



The Chippewa County 9-1-1 Dispatch Center and the PTP 49600 enable cost-effective, reliable and secure first responder communications for the entire eastern half of Michigan’s Upper Peninsula

VALUE ADDED SERVICES

Motorola’s local partner, El-Com Services, Inc. was critical in the success of the Chippewa County deployment. Operating for over 35 years in Michigan’s Upper Peninsula, El-Com has installed and continues to provide maintenance for 9-1-1 centers in 15 counties spanning across 20,000 square miles.

Result: Enhanced effectiveness of emergency dispatch service accomplished with outstanding cost efficiency

The new dispatch network was ordered, shipped, staged, installed and implemented in a matter of weeks. Because of the hazardous cold of long Upper Peninsula winters, the decision was made to install an antenna on a tower but to locate the radio inside a building at the base of the tower. This precluded the need for workmen to climb the tower to repair the radio when it’s 30° F below zero or in the midst of a blizzard. With the help of Motorola’s PTP LINKPlanner tool, engineers were able to design

IP-based future

Chippewa, Mackinac and Luce Counties, as well as the MPSCS, are enthusiastic about the new regional network’s performance. They’re also impressed by the significant cost savings it delivers, especially in contrast to other licensed microwave and T1 connectivity options. The success of Chippewa County’s combined dispatch center is paving the way for increased future usage of IP-based solutions for T1 replacement and last mile connectivity.



MOTOROLA

Motorola, Inc. 1301 E. Algonquin Road, Schaumburg, Illinois 60196 U.S.A. 1-800-367-2346 www.motorola.com/wirelessbroadband

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