

Project 25 Technology Interest Group



P25 System of the Month

Central Indiana Counties

City of Indianapolis, Marion County, Hamilton County, Madison County



Central Indiana Counties Partner for Interoperable Communications

Three Central Indiana Counties partner to leverage cost savings and form a regional interoperable communications network.

System Background

City of Indianapolis and Marion County

In 1985, the City of Indianapolis announced an initiative to upgrade or replace the disparate and aging communications systems that were operated independently by multiple agencies throughout the county. The goal was to create a new countywide system linking all public safety agencies on a common communications platform. The development of that system stalled out amongst political squabbles over the next few years and, unfortunately, required a few tragedies to keep the effort moving forward.

The first was the crash of an Air Force jet into a hotel near the Indianapolis Airport in late 1987. Responding agencies operating on their own radio systems could not adequately communicate with each other and many felt the response was hindered. Less than four months later, fifteen firefighters were injured when an interior ceiling collapsed in the Murat Shrine in downtown Indianapolis. Firefighters inside the building had difficulty communicating with those on the outside of the building and resorted to leaning out of windows to make contact with command staff.

As a result, a new agency was formed in 1988 to spearhead this effort. Progress began being made and in 1992, the first users on a new, countywide radio system were turned on. The system was a Motorola SmartNet II analog system that served Indianapolis and Marion County from five tower sites spread across 400 square miles and provided improved communications for all Public Safety responders throughout the area. Additionally, a five site “hot backup” system was installed that was made available to Public Works agencies, allowing interoperability between those agencies and Public Safety.

In 2006, Indianapolis and Marion County recognized that its aging SmartNet II system needed a refresh. Construction of the new P25 communications system took approximately 24 months and saw the addition of six towers throughout the county to fill in identified coverage gaps and improve overall in-building coverage.

Support of this system is managed by the City of Indianapolis Division of Public Safety Communications (PSC). PSC maintains a full-service Customer Service Desk to support their systems and all programming services for users within the City and County are handled by this team.

The City of Indianapolis owns the Master Site for the regional communications system, which is funded through PSC’s municipal budget with chargebacks to Hamilton and Madison Counties. This partnership has allowed the three counties to have a state of the art communications network without each agency fully bearing the annual support cost of a master site.

Hamilton County

In 2012 Hamilton County needed to replace its aging EDACS trunking system to support the explosive growth in population in the county as well as provide better signal coverage to their emergency responders. During 2012 and 2013 vendors were requested to submit RFPs to provide a P25 communications network that required 20 dB in the densely populated areas, 14 dB in rural areas, and 8dB coverage in neighboring Boone County Indiana using the DAQ 3.4 standard.

In 2013 Motorola was selected as the vendor for Hamilton County's upgrade. Hamilton County was able to realize cost savings on their replacement system by cost sharing expenses for the Marion County master site. This allowed Hamilton County to pursue additional enhancements to their network to support first responders.



Hamilton County's network consists of eight towers, 15 channels, and is spread across 400 square miles serving a mix of urban and rural areas serving approximately 3,500 subscribers.

Hamilton County manages their portion of the regional system via a Radio System Administrator and a Radio System Technical Committee chaired by the Executive Director of Public Safety Communications. The Radio System Administrator is responsible for all programming services, general troubleshooting, contract management with vendors, and vetting new technology for the radio network. The Radio System Technical Committee is responsible for oversight of the system making recommendations for purchases for the network to the Hamilton County Board of Commissioners. The Technical Committee is also responsible for vetting new technology, preliminary approval of new system policies, as well as requests for enhancements to subscribers.

Madison County

In 2013 Madison County realized it was time to replace their aging communications infrastructure and gain the advantages of interoperable communications that P25 provides. Madison County faced some unique challenges in getting all their respective municipal governments to combine resources for the greater good. Madison County also experienced challenges in moving users from disparate systems like stand alone UHF/VHF repeaters and a small 6 channel 800 MHz LMR system.

Madison County's system contains five sites, ten channels, and is spread across their 450-square mile coverage area providing 28dB coverage within the three incorporated cities and

8dB coverage throughout the remainder of the county using DAQ 3.4 standard serving approximately 1,500 subscribers.

Madison County's portion of the system is controlled by the Madison County Commissioner's through the 911 director and with input from the Public Safety Interoperable Communications Board. Madison County funds their portion of the system through their general fund and user agency fees.

Interoperability

The three-county system has realized many great benefits from sharing common infrastructure utilizing the P25 architecture. Previously all three counties were required to maintain radios in their respective Public Safety Answering Points (PSAPs) and create patches to the respective jurisdictions. Patching proved problematic and unreliable at best. A great many of the field units did not have direct communications with the neighboring jurisdictions, especially during large or critical events. This created a First Responder safety issue, which the counties realized needed to be addressed as soon as practical.

Since the counties have upgraded to P25, the three counties now share talkgroups including public works talkgroups to allow for greater efficiency. The counties have created several mutual aid (MA) talkgroups that can roam across all systems in the event of a disaster or large-scale event like the Super Bowl.

An additional benefit of the three counties upgrading to P25 is the ability to have interoperable communications with the State of Indiana's P25 system. This system is utilized by hundreds of agencies throughout Indiana as well as Federal Public Safety partners. No longer do officers need to have multiple radios available to communicate to these important partners.



System Demographics

Overall System

P25 Phase 1 Trunked 800Mhz

Over 24,000 subscribers on the combined system

System services over 240 agencies including local, state, and federal partners

Subscribers on the network include XTS, XTL, APX, Harris, and EF Johnson

Consoles software for all three counties is Motorola's MCC7500 product

Genesis reporting available to the three counties

Over 40 shared tactical talkgroups across all systems

Emergency talkgroups available. When activated, the talkgroups will utilize all sites on the system

Recording systems include Eventide, NICE, and Verint

All three counties share costs for the maintenance of the master site

City of Indianapolis and Marion County

- 11 sub-sites with 24 channels for public safety
- 5 sub-sites with 22 channels for public works
- Covers 400 square miles
- Location Fire Station alerting interfaced to system
- Currently provisioning Motorola PremierOne CAD with integration into P25 radio system

Hamilton County

- 8 sub-sites with 15 channels for public safety/public works
- Covers 400 square miles
- Fire station alerting accomplished utilizing Motorola's Call Alert functionality and VHF two tone paging.

Madison County

- 5 sub-sites with 10 channels for public safety
- Covers 450 square miles
- Fire station alerting accomplished utilizing Motorola's Call Alert functionality and VHF two tone paging.