



## Customer profile

Public safety agencies throughout  
Oneida County

## Applications

- TaitNet P25 conventional simulcast
- TaitNet QS2
- TM9155 digital mobiles
- TP9155/60 digital portables

## Business benefits

- Improved portable coverage
- Law enforcement using digital channels
- Analogue channels for paging maintained

## THE CUSTOMER

Oneida County is located in the US State of Wisconsin and has a total area of 1,236 square miles (3,201 km<sup>2</sup>). The main users of the radio system are from the Oneida County Law Enforcement centre which incorporates the Sheriff's office and 911 dispatch centre; however other agencies, including volunteer fire, communicate on the system.

## THE CHALLENGE

A lack of strong county-wide radio coverage had driven Oneida's radio system upgrade. With typical portable coverage only 40 per cent, Oneida County needed a radio solution that would saturate coverage while offering capability for future upgrades.

In particular, the County wanted a solution that could provide staged migration to digital technology capable of working within the 12.5KHz bandwidth.

Public safety agencies within Oneida County had separate needs. Law enforcement agencies needed to move to P25 to become interoperable with neighboring counties.

However, the entire county could not completely migrate to P25 digital radio as some Oneida fire departments are volunteer organizations which dispatch emergency alerts via analogue pagers. For this reason some channels needed to remain analogue.

*"The Tait solution provides us with better coverage areas, continues our ability to use a secure channel, allows us to have consistent subscriber programming and prepares us for future upgrades."*

**Dan Hess**  
Lieutenant of Communications  
Oneida County Sheriff's Department

## THE SOLUTION

Tait proposed a hybrid system solution to cater to current analogue needs, while allowing for staged digital migration. The seven-site Tait simulcast system includes three QS2 analogue simulcast FM channels and one P25 digital simulcast channel.

Tait offers several modulation options for Simulcast systems, which allows a customer to choose the preferred method to suit their unique coverage challenge and budget.

Oneida chose C4FM modulation format to ensure that their radios could remain interoperable with those used by public safety staff in neighboring counties.

The implementation of a P25 simulcast system, in particular one using C4FM, needs to be designed and optimized by experienced and knowledgeable engineers. Rarely will such a system perform to expectations on several arbitrary sites without input from experienced engineers.

First analysis of the sites was completed using prediction software to verify the solution was feasible before installing any equipment. Then with a second phase of testing and system optimization, Tait engineers were able to further improve county-wide coverage by configuring the launch times of each site, minimizing the potential for dead spots in critical areas.

## THE OUTCOME

Even with a larger site separation than is preferred with C4FM, Tait engineers were able to optimize the system to exceed the requested 90 per cent coverage. This was primarily due to the improved RF design.

Oneida's law enforcement agencies have been able to incorporate Tait interoperable and rugged P25 mobiles and portables into their fleet and utilize the secure digital channel. Meanwhile, fire crews are still able to utilize the analogue channels.

## MORE INFORMATION

For news, product specifications, comprehensive technical information and contact details of your nearest Tait service facility, please visit

[www.taitradio.com](http://www.taitradio.com)

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