



# BOTETOURT COUNTY, VIRGINIA, USA

CASE STUDY



## THE CUSTOMER

Local authorities in Botetourt County, Virginia now have improved radio coverage with their new Tait Quasi-Sync System.

## THE CHALLENGE

Botetourt County is an outdoor paradise – with the 4,000 ft Blue Ridge Mountains in the east and national forests making up 22 per cent of the County.

But the same environment that attracts people to the area makes it a demanding place to provide radio communications. There are many hills and valleys and in winter the region experiences extreme weather conditions including rain, snow, heavy ice and lightning.

Botetourt County was using a low band conventional system. However, the rugged landscape meant that upgrading a conventional system or moving to a trunked system would require many sites to get the coverage required and it would be costly to install. So, the option of a Quasi-Sync system was introduced.

### Customer profile

Three agencies operating in a rugged and varied landscape

### Applications

- TaitNet QS<sup>2</sup> simulcast

### Business benefits

- Wide coverage in a rugged environment
- Shared emergency communication
- High audio quality
- Reliable communications
- Minimized spectrum costs
- Advanced computer technology greatly reducing servicing
- Simple installation

### Products used

- Four-site, seven channel TaitNet QS Simulcast system

*"Areas like Botetourt are an example of where Quasi-Sync comes into its own. We estimate we improved coverage from about 50 per cent of the county to more than 97 per cent."*

**Wes Podboy**  
Project Manager  
Durham Communications

[www.co.botetourt.va.us](http://www.co.botetourt.va.us)

## THE SOLUTION

The four-site seven-channel system is used by three main agencies in the county, including the sheriff's department, fire and rescue ambulance and the school district, which has radios in its 90 buses.

Quasi-Sync is a shared medium so it is important that the groups don't overlap. Each group has its own channel to ensure privacy and channel space. At the same time there is one channel common to all radios on the system so that the groups can co-ordinate in an emergency.

TaitNet QS<sup>2</sup>'s very high simulcast performance significantly reduces maintenance. It uses high stability oscillators to maintain a very stable transmitter frequency.

With traditional simulcast systems transmitter frequencies drift over time so regular maintenance is required at each site to avoid distorted audio signals in areas where coverage overlaps.

With TaitNet QS digital signal processing based Line Equalizer Modules, routing audio to each transmitter, analyze the characteristics of a neighboring transmitter and automatically adapt their own signals to match.

## 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)



Map of Botetourt County

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