

# Ag Wireless Links Multiple Farm Cooperative Sites

Northeast South Dakota



## Customer

In business for 70 years, 4 Seasons Cooperative is a major supplier of agricultural and related products in northeast South Dakota, and maintains multiple locations in several counties, including the towns of Amherst, Britton, Claremont, Doland, Hecla, Kidder, Pierpont and Redfield. The cooperative's large farm centers specialize in grain, grain marketing, agronomy and feed, and also offer vehicle repair services and parts. Customers can even enjoy lunch at the Britton and Doland stores. The cooperative grew even bigger in 2005 with the merger of Farmers Union of Pierpont and Bristol, a 600-member cooperative. 4 Seasons' mission is to provide quality goods and services and to "update and modify" its own practices to better serve its customers.

## Solution Provider

Ag Wireless Network Solutions of West Fargo, North Dakota, has a dedicated focus: Engineering multi-location computer networks for rural businesses and cooperatives. With clients in Wisconsin, Minnesota, the Dakotas and Iowa, Ag Wireless finds solutions for customers that don't have many connectivity options beyond expensive leased-lines. Ag Wireless provides the bandwidth and network reliability that meet today's needs, leveraging customer infrastructure to take advantage of tomorrow's technology.

## The Situation and Challenge

South Dakota is "big-sky" country, with wide-open spaces and fertile land. While the state is dotted with small towns and larger cities, there is little "urban sprawl," which means the multiple locations of a single large business can be many miles apart. Known for its harsh winters, South Dakota also presents environmental challenges for network communications. As 4 Seasons Cooperative grows, its need for efficient communications grows proportionately. The cooperative found it imperative that its key locations were linked to its central server in Britton and able to carry a variety of data and voice communications, including inventory and pricing updates, grain futures, Internet connections, phone service and more.

## Technical Requirements

- Connectivity with 99.999% uptime
- Fast throughput
- Ability to handle the fading and polarization challenges inherent in long-distance connectivity
- Ability to handle enterprise Voice-over-IP telephone traffic
- Ability to send large-file, high-resolution maps across the network (most larger than 40 MB)
- Rugged construction to operate in exposed areas
- Easy installation and remote operation
- Ability to co-locate with other 5.8 GHz equipment nearby

*“The Motorola wireless equipment gave us the ability to provide 4 Seasons Cooperative with a wireless solution that would not have been possible with other equipment, creating long-range, high-speed wireless links using our client’s existing structures in most cases, with the means to easily monitor, maintain and upgrade the network.”*

*~ Paul Mehl, President, Ag Wireless*

#### Deployment Detail and Interoperability

Ag Wireless deployed a combination of Motorola 5.8 GHz Point-to-Point Wireless Ethernet Bridges – 400 Series with external and internal antennas that can deliver throughput from 21 Mbps to as high as 43 Mbps. The five point-to-point links run from 15 miles (24 km) to 39 miles (63 km) to the central server in Britton – more than 100 miles (161 km) of wireless connectivity in total – and carry the VoIP phone traffic for 4 Seasons Cooperative.

#### The Results

The Motorola PTP 400 Series radios consistently get ping times in the 40 ms range (traveling more than 200 miles – 322 km – back and forth), and reach throughput of more than 20 Mbps. Most important, the installation survived a serious ice storm that took down 9,700 utility poles – without losing a second of connectivity. With Motorola equipment in place, 4 Seasons has a wide-area network that spans all of its locations, meets all of its technical requirements, and provides plenty of surplus bandwidth to meet future needs. From a business standpoint, 4 Seasons is pleased to have in place a system it owns outright, with no monthly fees.

#### Why Motorola?

- The Motorola PTP 600 Series solution delivers a highly reliable, robust, long-distance connection
- High data throughput easily carries heavy-duty applications such as high-speed Internet services and VoIP
- On-board software and an audible signal make the radios easy to deploy
- Self-managing operation keeps the radios hassle-free

#### About Motorola

Motorola is known around the world for innovation and leadership in wireless and broadband communications. Inspired by our vision of Seamless Mobility, the people of Motorola are committed to helping you get and stay connected simply and seamlessly to the people, information, and entertainment that you want and need. We do this by designing and delivering “must have” products, “must do” experiences and powerful networks – along with a full complement of support services. A Fortune 100 company with global presence and impact, Motorola had sales of US \$36.8 billion in 2005. For more information about our point-to-point products and services, visit our website at [www.motorola.com/ptp](http://www.motorola.com/ptp).



*Located in Claremont, SD, this is one of five point-to-point links to the central server in Britton, carrying data and VoIP phone traffic for 4 Seasons Cooperative.*

*“Our network and the new VoIP phone system are working well together. We are very impressed with the whole Motorola wireless installation.”*

*~ Tammy Satrang, 4 Seasons Cooperative*

At the time of this installation, the products deployed were the Orthogon Systems OS-Gemini point-to-point wireless Ethernet bridges. With Motorola’s acquisition of Orthogon Systems, the OS-Gemini products were renamed as the PTP 400 Series bridges. They are now part of Motorola’s **MOTOwi4™** portfolio of innovative wireless broadband solutions that create, complement and complete IP networks. Delivering IP coverage to virtually all spaces, the **MOTOwi4** portfolio includes Fixed Broadband, WiMAX, Mesh and Broadband-over-Powerline solutions for private and public networks.

**MOTOwi4™**



**For more information about the Motorola Point-to-Point Solutions:**

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