Aeris.net
Web-to-wireless remote control.

Case Study on Pivotrac.com LLC

"On-Trac"

Center pivot irrigation systems are a practical alternative to traditional irrigation techniques for watering large fields. Self-propelled and continuously moving, these super systems are typically configured to irrigate approximately 130 acres of thirsty farmland. The machine pivots around a center point in the field, and pump between 500 and 1000 gallons of water per minute.

Center pivot sprinklers are often deployed on large farms in the West and Midwest. These gargantuan agricultural enterprises often encompass thousands of acres, and can be many miles from civilization. The center pivots operate in the middle of this great nowhere where there's no one on hand to monitor them, or fix things when mishaps occur. Problems are common. The systems are wheel-driven, and the wheels sometimes get stuck in the mud. Water pressure is often lost as well, and power. The cost of failure can be very high indeed. Because un-irrigated, highly-fertilized crops stress badly in the summer months mistakes are not an option. Crop yield suffers, and in worst cases the crop may be lost altogether.

"If you have ten machines in operation you can count on at least one failure per day," says Jerry Abts, manager, Pivotrac ®.com, LLC, a provider of center pivot wireless monitoring in Denver, Colorado. "Because the center pivots operate remotely you have to check on them regularly. Driving around to check the pivots manually is an inefficient use of manpower, and because there are great distances involved you can miss breakdowns between checks. Pivotrac offers an alternative to that."

Pivotrac remotely monitors water pressure as well as pivot functionality, Abts continues. The system consists of a small radio equipped with a power supply, and input and output circuitry.

Mounted at the irrigator control panel, the radio transmits data via the Aeris MicroBurst device. Aeris then forwards the information to a Pivotrac computer through a static IP connection.

Once Pivotrac's software analyzes the information packet, it is made available to the farmer by way of three venues. He can view a full geographic analysis of his pivots on the Internet by logging on the company's website (www.pivotrac.com). Pivotrac also sends an email alert to text messaging pagers, raising the alarm when a sprinkler is running dry or is somehow malfunctioning. Finally, messaging is provided by voice telephone, both landline and cellular. The company can rotate up to ten calls in the event that the first call is not picked up.

"MicroBurst plays a critical role in all of this," Abts says. "The system transmits over the less congested channels of the SS7 network, allowing for real-time reporting. This is a tremendous advantage to farmers, and the people who work for them. Those guys are on the go all the time, and with the Pivotrac system they get regularly updated status reports on their pagers. Farming operations are thinly-staffed so the faster and more efficiently they can receive vital information the better off they are. Pivotrac and Aeris offer the people who make their living from agriculture a big payback. Bottom line, we improve their irrigation processes through automation."