Novel RFID Application Keeps Water Flowing

Spring Water On Tap, a water delivery service, is working with AT&T to check water levels in tanks using wireless sensors, small modems with unique IDs and a cellular network.

By Beth Bacheldor

July 3, 2008— Spring Water On Tap, an Atlanta-based startup company, is employing radio frequency identification to take water delivery service to a new level. The firm plans to install large tanks and employ wireless sensors coupled with tiny cellular modems, each carrying unique ID numbers, to track water levels in those tanks, thus ensuring that homes and businesses are never left high and dry.

AT&T, as part of its AT&T RFID Service, is providing the hardware, software and wireless network communications needed for the pilot, slated to begin in August. "This isn't your traditional RFID application," says Will Hurst, a senior mobile solutions architect with the telecommunications company. "AT&T takes a very broad holistic view of RFID. The traditional view is passive or active RFID tags that you put on assets to keep track of them. What we consider RFID is tracking a pack of gum in a retail facility all the way up to tracking ships on the ocean."

The solution will leverage ultrasonic sensors affixed to 65-gallon water tanks that will hold the water and be placed at homes and, potentially, businesses. According to Hurst, the sensors—linked to cellular-based modems, also affixed to the tanks—transmit sonar signals down through the tank, measuring the return signal to discern water levels.

Each modem, manufactured by Siemens, has a unique ID number and is similar to modems used in cell phones. The modem sends the water level data and its ID number, via AT&T's GPRS wireless voice and data network, to a central server that holds all of the data, as well as the modems' ID numbers and the corresponding information linking those IDs to particular customers.

The modem can be programmed to transmit the data as often as desired. AT&T will host the server for Spring Water On Tap (which will have access to the data via a Web portal) at one of its data centers, though Hurst says companies can own and maintain the servers at their own sites. Monitoring water levels in real time, says Percy Jones, CEO of Spring Water On Tap, will enable the company to overcome some of the service problems inherent in water delivery services. Jones has worked in water bottling and delivery since 1986, and says the industry has always struggled with service.

"We all deal with the human element," Jones says. "There's the moving of water from a spring site—if that is part of the supply chain—to the bottling operation, then the bottling of the water, then moving the bottles to the customer. At any point, things can go wrong. Our score cards end up being very poor in terms of being able to provide service—having the product there when it should be there, and having it available at all times. Spring Water On Tap is going to overcome the faults in [water] delivery—and technology, that's the way to go."

Percy decided early on that the first order of business would be to eliminate the typical five-gallon jugs used

by many water delivery services. The jugs are sterilized and reused numerous times, then end up in landfills. Instead, Spring Water On Tap intends to install 65-gallon tanks at its customer sites, then refill them using a truck that delivers the water when necessary.

Still, Jones knew the human element—deciding when to deliver the water—would affect service. Therefore, he decided to approach AT&T to come up with a plan. "I knew nothing about sensors," he states. "But as we began to examine the possibilities, with the help of AT&T, it all began to make a whole lot of sense."

RELATED_ARTICLES Not only will the sensors and wireless communications help ensure customers' tanks never run dry, Jones says, the solution will also "play a huge role on our bottom line." Rather than simply dispatching trucks filled with water, he explains, "we'll know the truck is carrying product that will be delivered, because we'll already have all the numbers the data has provided for us. We'll know that Tank #10 is a 65-gallon tank and is down to 20 gallons. We'll know, when we dispatch trucks, exactly the amount of water we need to put on those trucks. And the trucks won't return to our yard with any inventory that we'd have to then dump out. We'll have no waste."

Spring Water On Tap plans to begin beta testing in Atlanta next month, and to employ 1,000 tanks as part of the pilot. "We needed a strong beta program," Jones says. "One thousand units will give us enough data and feedback to build out thousands and thousands of these tanks and sensors." Eventually, the company plans to expand elsewhere in Georgia, as well as Louisiana, Texas and Florida.