LIVING ON THE GULF COAST, you learn to appreciate the spaciousness the water and the far-off horizon paint; that is until you need to survey on that canvas. That is precisely the challenge that coastal surveyors confront on a regular basis.

Charles Wixley, project coordinator for a predominant geospatial surveying company based in Louisiana, was tasked with researching products and developing procedures to help crews in the field improve their efficiency.

“We do work on the inland waterways,” says Wixley. “Trying to get long RTK shots out in the Gulf, or on the barrier islands off the coast, is a chore. It was then that I saw an article talking about a product used off the Gulf Coast to get 30-mile RTK shots using 900MHz direction antennas and stuff.”

The product turned out to be an RTK Bridge from Intuicom, Inc. Wixley added this piece of equipment to his inventory and immediately put it to work.

“Had they relied on a traditional base station...”

Intuicom’s RTK Bridge has come a long way, including use for hydrographic surveying.

By Michael Irvin

“...a survey vessel with the RTK Bridge installed served as our base, capturing and re-broadcasting RTK network corrections to our second vessel equipped with a rover.”

GOING FOR THE LONG SHOT
over a known control point, every so often they would have had to stop their progress and go back, pick up the base station, move it to a new control point, and then reestablish and continue from there—a time-consuming and arduous task.

“Instead of doing that, we put the RTK Bridge on one of the boats and it began capturing corrections off of the GULFNet RTK Delivery Service immediately,” says Wixley. “We didn’t have to occupy a known control point. The boat was our base at that point.

“We took the corrections from the RTK Bridge and funneled them through a traditional 450MHz Trimble radio to broadcast the RTK corrections from the RTK Bridge to the rovers. The RTK Bridge proved to be a huge asset.”

In this situation, the rovers didn’t require any special equipment. They were communicating on regular radio frequencies like they normally do. What was different was that Guidry and his crews were capturing RTK corrections and rebroadcasting them from a moving platform: in this case, two boats (Figure 1).

One boat had the RTK Bridge and an RTK rover on it, and the second boat had only an RTK rover. As each boat moved around, it was getting RTK corrections from the RTK Bridge. As the boats progressed along the coast, the RTK Bridge would simply reinitialize as needed in order to stay current with GULFNet and report its position back to the GULFNet real-time network as they traversed the waterways. This strategy saved Wixley and his teams a tremendous amount of time, enabling them to remain on schedule, even with the uncertain environment they encountered.

A Change in Mindset

In hindsight, the biggest challenge that Wixley faced was explaining to his peers how he captured accurate corrections in this mobile deployment. “It takes a little bit of time and a little bit of drawing on a whiteboard with some big old crayons to get the concept across,” emphasizes Wixley. “The challenge is that they are so traditional in their mindset that you need a known control point in order to be accurate. They understand now the flexibility and functionality the RTK Bridge brings to the job.”

This advanced functionality is not limited to mobile deployments on waterways. Another situation was on a job in a heavily wooded area: they had two crews in the field with rovers operating within a mile of a base. Everything was progressing as normal until they encountered a thicket of trees that actually was blocking radio frequency transmitting from the base. As a result, the rovers couldn’t initialize. When the party chief saw what was happening, he immediately called Wixley to discuss options, one of which was using the RTK Bridge as an alternative means of transmitting corrections (Figure 2).

“Since both rovers were using Trimble TSC-3 controllers with SIM cards inserted and had good cell connectivity, we were able to use the cellular connectivity that the RTK Bridge provided to reach over the trees,” Wixley notes. “In this case, we set up to rove off the internet using the Base-to-Socket mode on the RTK Bridge, getting corrections from the base without having to rely on the radio to do it. Without the RTK Bridge we would not have completed that project on time.”

TODAY’S RTK BRIDGE

Intuicom keeps adding new features, but the core functions come from Intuicom’s Base-to-Socket technology that lets the RTK Bridge-X host corrections directly from your base station. As your GPS/GNSS receiver generates corrections, the RTK Bridge-X hosts those corrections on the internet. These corrections can then be accessed by up to ten rovers over the internet, via the RTK Bridge-X’s cellular connectivity, and still be broadcast via radio when you need to supply RTK corrections when cell coverage is not available.

With this flexibility and ease of local deployment in the field, RTK Bridge-X users experience improved correction reliability with dramatically reduced interference. The amount of time it takes to set control is minimized because you’re already in a network. The result: quicker setup and more billable hours—which both equate to increased profitability.