Monir Precision Monitoring, Inc.

Instrumentation Monitoring Company Fulfills Customer Need for Real-Time Measurements With Advanced Cellular Communication

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Application:Private, Commercial Industrial + Infrastructure

Customer Critical Challenge:

- Field instrumentation monitoring for civil engineering construction market

- Required persistent wireless connectivity and remote monitoring capabilities for real-time transmission of vibration measurement data

Solution:

- AirLink™ Intelligent gateways provided reliable cellular communications for realtime data transmission and elimination of field travel for physical data collection

Benefits:

- Uninterrupted connectivity for access to critical vibration measurements

- Increased productivity and revenue by decreasing travel time

- Seamless integration with other monitoring solution components

- Improved customer satisfaction through immediate notification of potential vibration issues

Monir was created to provide the best in field instrumentation monitoring tothe civil engineering construction market with over 40 years of accumulatedexperience in the field. Monir is an ISO registered company and hasincreasingly improved its Quality Management Systems to provide clientswith high quality service that differentiates Monir from its competitors.

Business Challenge

Based in Mississauga, Ontario, Monir provides instrumentation monitoringto the civil engineering market. Its services include vibration monitoringof structures such as heritage buildings and utilities in the vicinity ofconstruction sites. Vibration monitoring allows contractors to anticipate andaddress potential issues that could arise in neighboring structures duringexcavation. The seismographs record peak vibrations, referred to as events,when they have exceeded the values

predetermined by engineers based onlocal vibration by-laws. These alerts provide the construction contractor theoption to review their means and methods, thereby alleviating potentiallydamaging vibrations at surrounding structures.

Most of Monir’s vibration monitoring installations were not automated,which required employees to travel to each site to collect data and returnto their office to report it. Since the data was manually downloaded, itdid not provide immediate response times to vibrations exceeding thepredetermined limits. In the handful of locations with an automatedsolution, a third party company was used to provide the real time datamanagement Monir wanted to provide their customers.

It soon became important to Monir’s business plan to handle the datamanagement in-house; the company was already managing remote datausing landlines and the internet, so adding wireless was the obvious nextstep. To bring their product to the next level, Monir needed to update itstechnologies to provide clients with real-time vibration measurements. Ofimmediate concern was the need to monitor sensitive historic structureswithin the zone of influence of a construction site. This opportunityhighlighted the fact that, for Monir to provide an end-to-end solution to theircustomers, they needed a way to perform real-time remote monitoring andhad to be able to manage the remote devices in-house to control the qualityof its products and services.

Sierra Wireless AirLink solution

After investigating its options, Monir selected the Sierra Wireless AirLink™Raven X and Raven XT 3G cellular gateways to add real-time data collectionand remote monitoring to its vibration monitoring product line. Monir wasable to locate a provider - Sierra Wireless partner, Baka Communications,Inc. - who had experience in the field and access to the equipment required.“We attempted to acquire devices from other manufacturers, but our originalwireless provider could not obtain any for us in a reasonable timeframe,”said Mike Guinyou, project manager for Monir. “Once we made contactwith Sierra Wireless, a rep was at our office quickly, with units available fordemonstration. Sierra Wireless was the perfect fit.”

AirLink Raven X	AirLink Raven XT

Prior to deployment, Monir put the intelligent AirLink devices throughrigorous testing in its warehouse to ensure strong signal strength andreliable communication with the vibration monitoring equipment. The devicespassed in-house signal strength tests in a typical installation mock-up, aswell as in more isolated areas.

“The reputation of the quality products from Sierra Wireless was importantto us,” said Samantha Ford, project coordinator and lead estimator for Monir.“The reliable connectivity is imperative in order for us to monitor vibrations in real-time.”

The AirLink Raven X and XT gateways provide a robust communicationsplatform that simplifies management of remote assets. A rugged design andembedded machine protocols make the Raven line ideal for industrial andinfrastructure applications. Powered by ALEOS™ embedded intelligenceand managed by AirLink management software, AirLink gateways enablesimple integration, pervasive connectivity, and remote configuration andtroubleshooting, virtually eliminating service calls to remote equipment and providing a quick ROI.

The Monir vibration monitoring product line consists of a seismographmonitor, geophone sensor, Raven X or XT gateway, antenna, and a cover toprotect the equipment from natural elements, as well as tampering and/orvandalism. Monir relies on Instantel’s Blastware program to communicateand present the data in a report format and AirLink management softwarefor remote device configuration and maintenance. The managementsoftware simplifies Monir’s equipment deployment by saving standardprotocols in the system’s memory, which makes adding new inventory a seamless operation.

“The AirLink management software was a key feature for our decision touse Sierra Wireless; once installed, communication using ACEmanager isinstantaneous and gives us the ability to monitor parameters, such as signalstrength and functionality,” explained Guinyou. “The most important benefitis the ease of integration and the management of all the devices in the field;within minutes the status of all our devices can be verified.”

Results

“The gateway operation was thought to be a daunting task and was one ofthe reasons we were reluctant to try managing our own equipment in-house,”explained Guinyou. “The user-friendly interface of the Sierra Wireless gatewayhas been a wonderful surprise.”

The Raven X and XT devices have been “a huge cost saver” by significantlydecreasing the number of trips to and from a construction site, allowing moretime to service its clients unique project requirements.“Our clients have been quite impressed with the real-time notification servicethat we can provide with wireless monitoring,” said Ford. “Now, when anevent is recorded, we notify our customer in a very timely fashion, allowingthem to evaluate their means and methods, which allows them to continueworking with little or no downtime.”

Monir is working with Baka Communications to obtain and deploy itswireless installations. As a Value Added Reseller (VAR) for Sierra WirelessAirLink products, Baka Communications was able to properly configure theAirLink devices using the template Monir provided. They also maintain aninventory to ensure short lead-times

for delivery of the equipment, allowingMonir to meet customer demand. Currently, Monir is focused on developingtechnically sound processes around its wireless capabilities with the goal ofmoving wireless to other areas of field instrumentation monitoring to continueimproving service and differentiating itself from the competition.

“We will be expanding the deployment to include a majority of our vibrationmonitoring installations as wireless and intend on migrating the technology toother product lines where we believe we will be able to provide added valueand improve our quality of service,” explained Ford. “It’s also comforting toknow that all AirLink devices are embedded with ALEOS, meaning that wecan use the hardware platform that best suits an application and still managethe devices with the same software products.”