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## 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:**

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- 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<sup>®</sup>; 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 to the civil engineering construction market with over 40 years of accumulated experience in the field. Monir is an ISO registered company and has increasingly improved its Quality Management Systems to provide clients with high quality service that differentiates Monir from its competitors.

### **Business Challenge**

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

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predetermined by engineers based on local vibration by-laws. These alerts provide the construction contractor the option to review their means and methods, thereby alleviating potentially damaging 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 return to their office to report it. Since the data was manually downloaded, it did not provide immediate response times to vibrations exceeding the predetermined limits. In the handful of locations with an automated solution, a third party company was used to provide the real time data management Monir wanted to provide their customers.

It soon became important to Monir's business plan to handle the data management in-house; the company was already managing remote data using landlines and the internet, so adding wireless was the obvious next step. To bring their product to the next level, Monir needed to update its technologies to provide clients with real-time vibration measurements. Of immediate concern was the need to monitor sensitive historic structures within the zone of influence of a construction site. This opportunity highlighted the fact that, for Monir to provide an end-to-end solution to their customers, they needed a way to perform real-time remote monitoring and had to be able to manage the remote devices in-house to control the quality of its products and services.

### **Sierra Wireless AirLink solution**

After investigating its options, Monir selected the Sierra Wireless AirLink's Raven X and Raven XT 3G cellular gateways to add real-time data collection and remote monitoring to its vibration monitoring product line. Monir was able 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 original wireless provider could not obtain any for us in a reasonable timeframe," said Mike Guin, project manager for Monir. "Once we made contact with Sierra Wireless, a rep was at our office quickly, with units available for demonstration. Sierra Wireless was the perfect fit."

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Prior to deployment, Monir put the intelligent AirLink devices through rigorous testing in its warehouse to ensure strong signal strength and reliable communication with the vibration monitoring equipment. The devices passed in-house signal strength tests in a typical installation mock-up, as well as in more isolated areas.

“The reputation of the quality products from Sierra Wireless was important to 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 communications platform that simplifies management of remote assets. A rugged design and embedded machine protocols make the Raven line ideal for industrial and infrastructure applications. Powered by ALEOS’s embedded intelligence and managed by AirLink management software, AirLink gateways enable simple integration, pervasive connectivity, and remote configuration and troubleshooting, virtually eliminating service calls to remote equipment and providing a quick ROI.

The Monir vibration monitoring product line consists of a seismograph monitor, geophone sensor, Raven X or XT gateway, antenna, and a cover to protect the equipment from natural elements, as well as tampering and/or vandalism. Monir relies on Instantel’s Blastware program to communicate and present the data in a report format and AirLink management software for remote device configuration and maintenance. The management software simplifies Monir’s equipment deployment by saving standard protocols in the system’s memory, which makes adding new inventory a seamless operation.

“The AirLink management software was a key feature for our decision to use Sierra Wireless; once installed, communication using ACEmanager is instantaneous and gives us the ability to monitor parameters, such as signal strength and functionality,” explained Guinyou. “The most important benefit is 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 of the reasons we were reluctant to try managing our own equipment in-house,” explained Guinyou. “The user-friendly interface of the Sierra Wireless gateway has been a wonderful surprise.”

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

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

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for delivery of the equipment, allowing Monir to meet customer demand. Currently, Monir is focused on developing technically sound processes around its wireless capabilities with the goal of moving wireless to other areas of field instrumentation monitoring to continue improving service and differentiating itself from the competition.

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