



# A+OMATION

## Picking up Good Vibrations in the Tower Industry!



### **In concert with our fellow composers of innovation.**

Second Sight Systems & Atomation are tuning in to the frequency of Telecom Towers. Not the traditional AM/FM bands, but the characteristic frequency of the structure itself. Utilizing Atomation's AT-U 1.0c Atoms, we are able to provide customers, vibration, temperature, impact, position and tilt data for towers located across North America. The Atoms are rapidly deployable, self-contained sensor arrays equipped with on board 4GLTE & BLE radios enabling both local and cloud-based data acquisition management.

*"I If you want to find the secrets of the universe, think in terms of energy, frequency and vibration." –Nikola Tesla*



# A÷O M A ÷ I O N

## But tell me why?

A primary risk of owning a tower is associated with the unknown state of the structure at any given time. As many of these structures are in rural areas and are rarely visited, and the cost of sending tower crews to each site often prohibits a reduced tower inspection schedule. Further, after significant weather events tower crews must often perform visual surveys in-order-to ascertain the state of a set of towers post the weather event. These inspections can be a race against time to find towers that are seriously damaged. These broad visual inspections are expensive, time consuming and can be accomplished more efficiently if the critical data about the structural integrity of the tower could be acquired remotely. The lack of this capability places a financial burden on tower owners who are constantly looking for methods and practices to reduce the number of site visits while still maintaining safe and reliable tower systems.

## Going forward!

In future applications SSS hopes to deploy arrays of Automation's sensors that will acquire the plum, twist and guy tension of communications towers; while also monitoring the tower's safety climb cable to detect the presence of crew on the tower. This will allow tower owners to retrieve the location information of towers that may be in a compromised structural state or occupied by unauthorized personnel in real time. The acquired data will also be available for analysis in-order-to identify future cost saving opportunities and best practices.

### **The Muse!**

The idea for the application of the Atoms spawned from a late-night guitar session and a viral video about an automatic guitar tuner. We thought to ourselves if this auto tuner can pick up and record the characteristic frequencies of guitar strings to determine if they are in the desired state to produce the sought after tones, why can't we use a wireless sensor to do determine the physical state of a tower?



*"I started doing all kinds of weird stuff on the guitar, which became part of my playing. I started doing harmonics and tapping on the guitar and pulling off strings and doing all this weird stuff that no one had ever done before." – Eddie Van Halen*