



# **Security Beyond Alarms and Into the Connected World**

A New Look at  
Environmental Monitoring  
in a Connected World

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## Overview



Many people think of security as being alarm systems in the home or office, video cameras, and firewalls that protect ones assets; however in a connected world security means so much more. The connected world is a place where every machine or piece of equipment has the potential to provide information about itself to people who have a vested interest in the equipment. When we think of all the machines in our lives we can easily see how they affect the environment we live in. The ability to tap into the various machines in our life not only helps to prevent loss by theft, it can help protect the equipment by notifying you of potential failures or help you maintain the equipment for peak performance, which in the end will have a positive effect on our environment.

Until recently most monitoring was done on a digital basis; the equipment was either off or on. But now with the cost of wireless data becoming more and more affordable machines are able to provide us with more intuitive information by sending analog readings from the equipment. An analog reading would be any data such as numeric values representing temperature, humidity or even speed, or text values that can provide current status of equipment.

In this White Paper we will show how Machine-to-Machine (M2M) is being used in various wireless monitoring applications to not only save companies time and money but also add an extra layer of security to current practices.

## Environmental Monitoring

When we think of the environment we instantly think of the green initiative, which is very much, a part of our lives now. Monitoring our environment can supply us with critical information regarding the machines around us. These can include machines such as our vehicles, the temperature/humidity in the classrooms or office, the depth of water levels in rivers or lakes, and especially the depth and condition of oil tanks and water tanks. AVIDwireless takes monitoring the environment in a connected world to the next level by offering solutions that can be used by anyone to help protect them and our environment. AVIDwireless offers a variety of solutions to monitor machines from vehicles to appliances, to oil/gas well sites to generators and pumps. These solutions can provide instant feedback to individuals and businesses alike to help make faster more informed decisions and protect the environment.



- Time Savings:
  - Wireless sensors can be installed to monitor various equipment without the need to run wires
  - No need to travel to the site to maintain the equipment or take readings
- Money Savings:

## Achieving Efficiencies With Remote Monitoring and Control

- Saves the cost to wire infrastructure to support the applications
- Saves fuel cost required to support remote sites
- Security Feature:
  - Track stolen equipment
  - Prevent losses from malfunctioning and non-maintained equipment

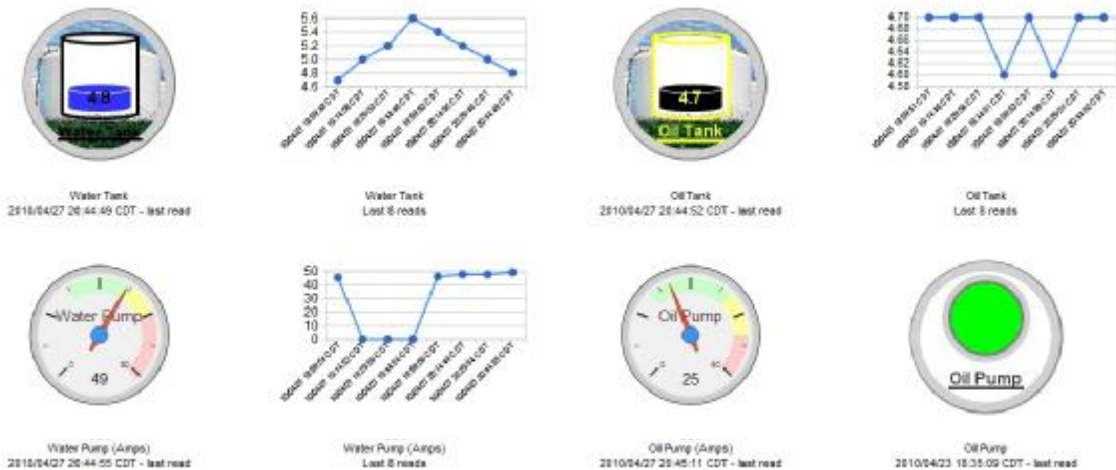


In the oil fields monitoring of tank levels provide constant monitoring and keep the owners and their support personnel (roustabouts) aware of any out-of-range conditions at the site. This saves the companies considerable amounts of money each year by:

- Decreasing the amount of fuel used by the roustabouts traveling to each site daily to check tank levels and equipment.
- Helping with the maintenance on the equipment. By tracking the equipment's performance

and looking for any abnormalities the roustabouts can maintain the equipment before it breaks and must be replaced. This not only saves replacement cost but also decrease losses from downtime.

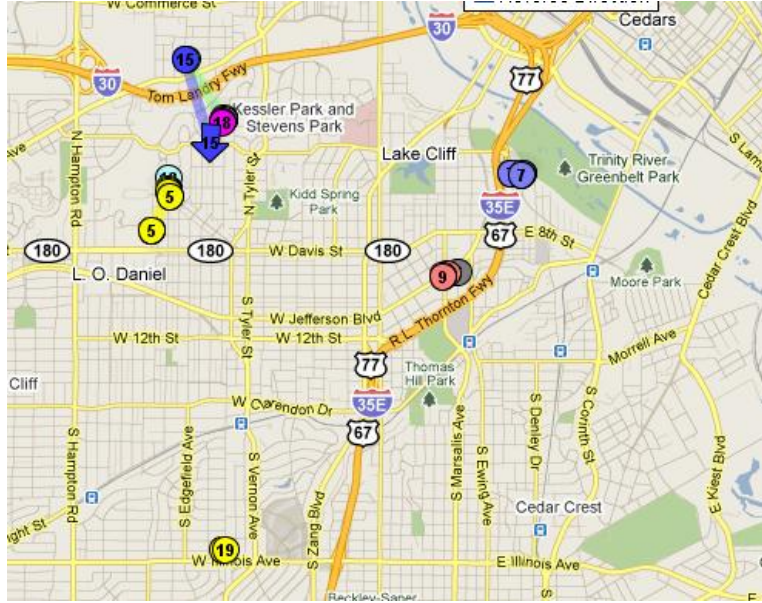
- Helps to eliminate EPA fines. An oil or contaminated water spill can cost the company anywhere from 10 thousand to 50 thousand in clean up cost and EPA fines. By allowing the site support personnel to track the tank levels and also be able to turn the equipment off/on remotely this can save thousands of dollars and basically pay for the equipment by eliminating just one spill.



Above shows an example of one oil site being monitored. The water tank, oil tank, water and oil pumps are constantly being monitored. Any anomalies in the equipment sets of an email or text message to the appropriate person for immediate attention. This provides the customer in thousands of lost dollars in fuel charges and wasted support time.

## Tracking and Security

Many companies are experiencing rapid growth by utilizing GPS to provide vehicle and equipment tracking. Tracking of assets especially mobile assets can provide additional security by being able to track down the assets should they be stolen. However it can provide many other benefits such as helping to maintain the equipment by tracking hours of operations, help to manage idle time, and provide a constant visual for where your remote employees are and where they have been.

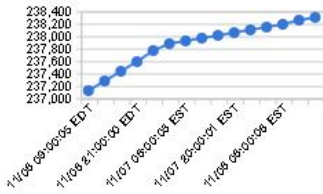


AVIDwireless provides several solutions for intelligent plug-and-play solutions to handle various monitoring requirements. For instance vehicle owners and fleet managers can easily monitoring their vehicles or heavy equipment and this can be as simple as a GPS device that plugs into the OBD (diagnostic port) of the vehicle or quickly installed under the dashboard. These solutions constantly monitor the vehicle location and performance to provides users with information about the vehicle or equipment. Manage your whole fleet or in groups from a single screen.

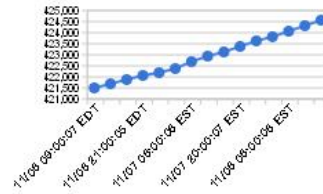
For parents of teen drivers this is a way to help monitor their driving habits and know where they are when they are not with you and check the performance of the vehicle to help them learn to maintain their vehicle. For fleet managers you can know exactly where your employees are at all times and get help with minimizing costly idle time on the equipment which has a huge impact on our environment, plus it provides the extra benefit of being able to track the equipment should it be stolen.

- Time Savings:
  - Equipment is easy to install, the OBD device plugs directly into the diagnostic port installation is less than 1 minute
  - Know where your fleet/equipment is without having to spend hours on the phone or driving to locate it
- Money Savings:
  - Many states are fining companies which vehicles that are idling too long, using intelligent tracking allows you to track employees that are in violation and re-train them
  - Maintain your equipment based on hours of operation instead of guessing how long it has been since maintenance has been performed, this saves wear and tear on your equipment
- Security Feature:
  - Track stolen equipment/vehicles
  - Monitored 24/7 with email or text alerts being sent for out of range conditions such as the equipment starting after hours
  - Track your teens or elderly parents and monitor their driving habits, provides peace of mind in knowing they are safe

## Energy Monitoring



Factory 1 Gas Meter  
Last 15 reads in last 3 Dys



Factory 2 Gas Meter  
Last 15 reads in last 3 Dys

Another area that is currently receiving extra visibility is the ability to monitor utility usage. For large factories utility monitoring can save thousands of dollars in energy cost each year by allowing users to better negotiate with energy providers for lower rates. By monitoring the energy usage these companies are able to sell unused energy back to the grid. With AVIDwireless' power monitor sensor utility monitoring is as easy as attaching the sensor and logging into the cloud-based portal to see the readings. This provides you with the security of knowing exactly how much energy you are using, when and where your high-energy usages occur plus the assurance that you are not paying too much for energy that you may not be using.

- Time Savings:
  - Equipment is easy to install comes ready to plug in and turn on
  - No need to constantly send employees to monitor the meter and log usage
- Money Savings:
  - Purchase fuel at a lower rate
  - Return un-used fuel to the grid
- Security Feature:
  - Know which locations are using the most energy and determine factors that can improve usage
  - Know that you are not being charged for more fuel than you are actually using

## Other Environmental Monitoring



“Most think of environmental monitoring as being a quality of air or water issue. While those are important considerations there are other forms of environmental monitoring that fall into this category that can be even more important” says Rod Montrose CEO and founder of AVIDwireless. Enclosed environments such as classrooms and office spaces are in need of constant monitoring of temperature, humidity and VOC (Volatile Organic Compounds) such as CO2 levels. Productivity is heavily linked to the environment around us. Temperature, humidity and CO2 levels

have a definite impact on productivity and the capacity to learn/work. In a connected world all these environmental values can be monitored and critical readings can immediately be sent to maintenance and administrative personnel to adjust HVAC systems. Additionally the information could be transmitted directly to the HVAC unit to adjust itself to correct the imbalance.

To further expand on environmental monitoring new advances in RFID technology is fast approaching where sensors included inside RFID tags will provide critical information such as temperature. These tags can be placed on products that are climate sensitive such as drugs or products containing volatile ingredients.

- Time Savings:
  - Equipment is easy to install comes ready to plug in and turn on
  - No need to constantly send employees to adjust environments based on human desires
- Money Savings:
  - Government funding is received based on performance in schools
  - Employees are more productive during work hours
- Security Feature:
  - Know that temperature and CO2 levels are appropriate and protect from critical conditions
  - Ensure that environmental conditions will not adversely effect products

### Conclusion

These are all examples of the ability to provide more security by monitoring our environment. As you can see there are many areas in the connected world that can improve our day-to-day quality of life, making us more safe and secure, protect our environment and at the same time save us money simply by adding monitoring to the equipment. AVIDwireless has plug-and-play solutions that can address any of these connected world environmental monitoring applications. Wherever there are machines that need to be monitored there is a way to implement an economical best in class solution using the AVIDwireless products. These solutions are easy to quickly implement and easy to use. Information in the form of readings collected from the equipment is transmitted directly to the cloud based server where users can view the information about their machines from any web based PC or Smartphone. To learn more about our solutions visit the website at <http://www.avidwireless.com>.

Receive a free consultation on your specific application; let us show you how AVIDwireless can help you feel more secure and better monitor your environment.

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