The ProSoft Magazine

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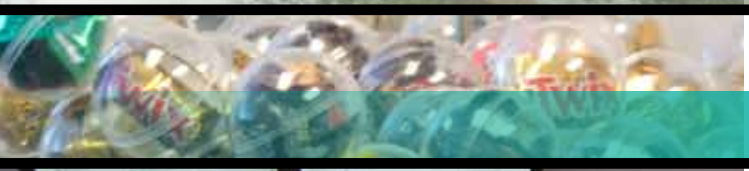

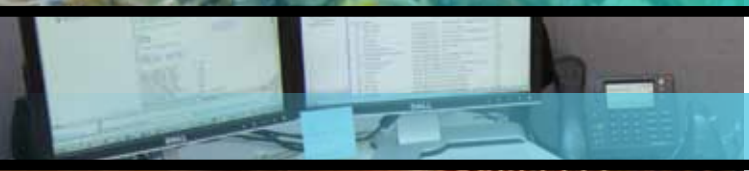

The ProSoft Magazine

FALL 2012

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From the President

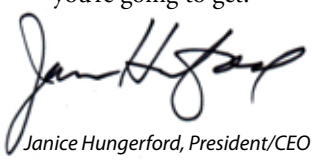
Change!

Most people who work in the automation field know that change comes slowly to our industry. Control engineers are very methodical types who are concerned with getting something running and keeping it running. So, once they latch onto something that works, they have a hard time switching to something new. How else do you account for so many 20-year-old processors still plugging away in plants around the world? They work. They aren't broken, so why change them?

Most people resist change. Yet, every company, individual or group goes through change. As a company grows it can go through steps from an entrepreneur's idea; to adding a few initial employees; to a corporation with multiple layers of management. The changes that occur along the way can include new processes, adding new product lines, or adding people with new skill sets, with each step changing the complexity of the organization.

How do we grow through change?

1. Communicate, communicate, communicate. Make sure everyone involved understands the need for the change and what their part in the change requires. It's like being on a football team. If all the players in the huddle don't know what the play is, it's likely to end in a fumble.
2. Get buy-in. This is especially important from your key people. They can help bring a sharper focus on the steps required for a successful change.
3. Stay nimble. Your team needs to be nimble enough to recognize that change will occur. Don't fight it. Embrace it with enthusiasm and collaboration. Recognize that life is not made of unbendable steel. The winds of change are always blowing and can change direction very quickly.
4. Recognize that change can be hard. Work with your team to constructively support those who find change a particularly hard challenge.
5. Remember: Change is one of the few constants! A company, individual or group can't escape it. Change will occur for better or worse. Communicate, get buy-in and stay nimble. As Forrest Gump would say, "Life is like a box of chocolates. You never know what you're going to get."



Janice Hungerford, President/CEO

Editor's **Notes**

MVI56E*nhanced* Migration...

By Danetta Bramhall
Editor-in-Chief
The ProSoft Magazine

Let me tell you a secret…

I read a survey recently that said most people actually get an adrenaline high when they get a deal on something they have purchased. The survey actually said that the rush this created was equal to or better than (Insert three-letter word here). Really! I'm not making this up!

If that is true then I would like to let all of our customers in on a secret that will give you that kind of rush and you don't need to leave your chair to get it.

Ready?

ProSoft's Modbus Communication Module for ControlLogix (MVI56E-MCM). "What?" you say, "That isn't anything new and it's certainly not a secret." That's true. Our Modbus Communication Module for ControlLogix is still one of our best selling modules. "So, what's the secret?" I'm glad you asked!

We took our flagship module that you have all been using for years and (drum roll please) made it **BETTER, FASTER AND CHEAPER**.

Look what we've added:

1. Faster communication ports and a faster CPU
2. Built-in diagnostic debug port, eliminating the need for HyperTerminal using a serial port
3. Built-in LED display for status and alarm data
4. Compact Flash memory card contains all the configuration for fast, in-the-field module replacement
5. Completely backward compatible with our original MVI56-MCM module

Oh and did I already mention, it's cheaper. Yes, we made it better and it costs less. How's that for a deal?!

Now let me put you veteran users at ease. Since the MVI56E-MCM module is completely backward compatible with the MVI56-MCM, you can still use the same easy-to-use add-on and ladder that you've always used. I'm not fond of the term "easy-to-use" because quite frankly I have found that when products are referred to with that phrase, they are anything but "easy-to-use." So, I had Chris Hines, our Technical

MVI56 Catalog Number	MVI56E Catalog Number
MVI56-GSC	MVI56E-GSC
MVI56- MCM	MVI56E-MCM
MVI56-MCMR	MVI56E-MCMR
MVI56-MNET	MVI56E- MNET
MVI56-MNETR	MVI56E-MNETR
MVI56-MNETC	MVI56E-MNETC
MVI56-MNETCR	MVI56E-MNETCR

If you have been using any of these modules...

Then you need to chnge the part number in your system to these!

Better. Faster. Cheaper.

Since the MVI56E-MCM module is completely backward compatible with the MVI56-MCM, you can still use the same easy-to-use add-on and ladder that you've always used.

Support Manager for North America, give me step-by-step instructions on how to replace an existing MVI56-MCM module with one of our new MVI56E-MCM enhanced modules. Here they are:

1. Make sure that your system is in a safe state for maintenance.
2. Remove the MVI56E-MCM module from the packaging.
3. Remove the original MVI56-MCM from the rack and replace it with the MVI56E-MCM.
4. Now, step number four is very critical so pay attention…Go back to what you were doing before steps one through three because YOU ARE DONE!

Got it? OK, now that's settled.

So which would you rather have? Old, boring and expensive OR New, enhanced and cheaper?

Now remember, this is a secret. I'm sure to get some grief if you tell anyone. But, the next time you place an order for our Modbus Module for ControlLogix, make sure you tell them you want the "enhanced" version.

Oh and let me know if that adrenaline thing really works.

Scan to view the web page.

Flying High On a Motorized Zip Line

ProSoft's wireless radios prove to be the solution on Missouri thrill ride

The thrill seeker prepares for his adventure on the flight deck. He decides whether he will surf, ride a magic carpet or be a superhero several feet above the ground at speeds up to 50 miles-per-hour through the scenic Ozark Forest and Branson, MO.'s Country Music Boulevard. He is then harnessed safely and securely, before he sets off on his SkySurfer journey.

By Victor Garcia

This isn't your ordinary zip line. SkySurfer is a zip line and a roller coaster combined into one. People ride SkySurfer standing, sitting or laying flat on one of three open air carts, without cages or handrails, as it goes up and down around the nearly one-mile cable through the urban and wooded area. Two other adventurers are also going along the rollercoaster-zip line hybrid on their own separate carts as the three are moving simultaneously at different spots on the course. This requires the utmost safety measures to be in place.

Before people were able to experience this thrill ride, it had to pass several tests. One of the tests required each slave Programmable Logic Controller (PLC) on the three carts to communicate with the Allen-Bradley MicroLogix 1100 master PLC on the flight deck. The master PLC has an HMI connected to it so an operator can start a cart and monitor data.

The Problem

The original wireless radio communication system that was installed to communicate the distance between the two carts wasn't working properly. There was a 40 second delay in data reception, which is an eternity when it comes to safety. The main purpose for the wireless system is collision avoidance.

Continued on page 8


MOTO
ZIP
1

"I wasn't prepared for it to be that easy to fix," said Jared Story, SkySurfer project manager, who had spent months looking for the solution. "We did a couple hours of testing, and the guys went home to dinner by five o'clock."

Flying High

Continued

Each cart has an encoder on it, which tells how far along the cart is on the track based on each time the wheel spins. Each slave PLC is doing the math and the radio is supposed to send the encoder signal to the master PLC, which can tell the cart to slow down if it gets too close to another cart. The original radio communication system wasn't performing its job.

Project Manager Jared Story spent months of time trying just about everything he could to get his original radio communication system to work. He originally thought it was a software issue. It wasn't. Story's troubles lasted through early November. Originally, Story wanted to open by the 4th of July last year. That didn't happen. His next goal was to open in time for the holiday crowds. Time was running short. It was early November and Story still couldn't get his original wireless radio system to work.

Technical support from the original radio system company was non-existent. Their excuse for not sending out technical support was that Story didn't buy the radios directly from them. "They refused to help me. It didn't make me happy," Story said.

The Solution

The solution was ProSoft Technology's RadioLinx RLX-IFH9E 900 MHz Industrial Frequency Hopping Ethernet radios. One was installed on each of the three carts, with one at the Master PLC.

Story heard about ProSoft Technology through an engineer who had used ProSoft solutions. He then contacted a distributor in Springfield, MO. who also suggested he contact ProSoft.

Chuck Stanley, a Wireless Support Engineer who works out of ProSoft's Madison, WI. office, received a call on Nov. 4 and performed onsite support only a few days later. In what had taken months of time just to find a solution using the other radio system, Chuck had the ProSoft Technology radios performing the job in a mere four hours.

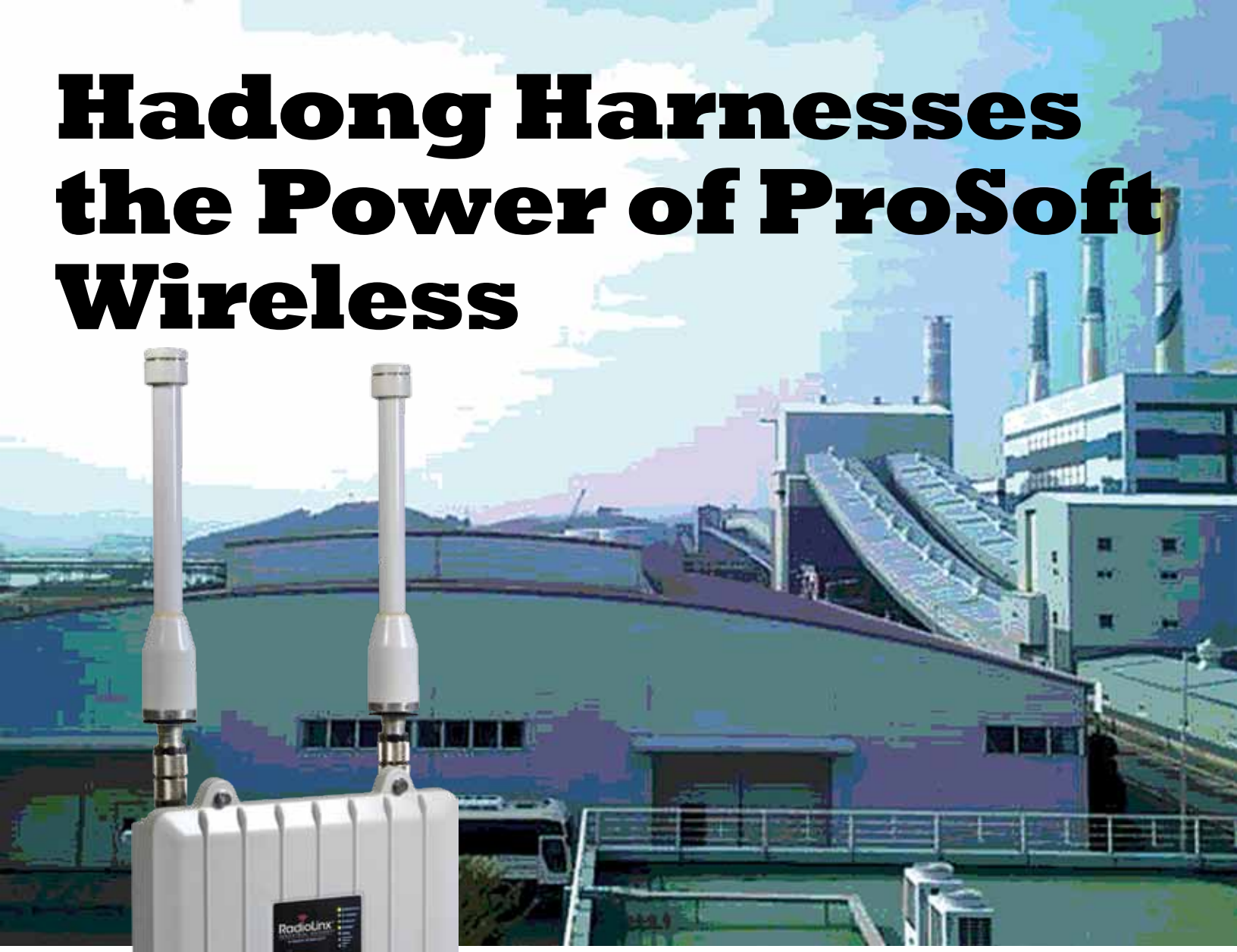
Once Chuck arrived, he performed a site analysis and installed three temporary radios. A ping test showed there was connectivity all the way around the track, as Chuck and the SkySurfer crew sent the carts off along the course. Chuck had received satellite views of the area a few days before.

"There was full signal all the way around," Chuck said. And that was with only a small gain antenna. "Even with the small gain antenna, it did well." Story bought the radios from the distributor, SMC Electric out of Springfield, Mo, immediately that day.

"When we were there and things started working Story said, 'I don't know whether I should be happy or upset,' because he was happy they were working and upset he took so long to find the solution, SkySurfer of Branson to open in time for the Thanksgiving and Christmas holiday vacationers.

Now superheroes, magic carpet riders and air surfers can fly safely on SkySurfer thanks in part to Prosoft's radios.

Hadong Harnesses the Power of ProSoft Wireless



ProSoft radios help move coal from conveyor to power plant

By Victor Garcia

With ProSoft Technology's RadioLinx Industrial HotSpot Radios, the solution turned out to be an easy one....

An average person turns on his TV set with the simple push of a remote, after turning on the light in the kitchen and grabbing a cold sandwich from the refrigerator. Most people don't think of where the electricity powering their light bulb, refrigerator or TV is coming from or the processes involved producing the electricity.

Ships dock continually each day at the Gwangyang Harbor adjacent to South Korea's Hadong Power Plant transferring tons and tons of coal. Bucket after bucket, carrying tons of coal from each carrier ship's cargo area, is then transferred via a conveyor that leads to the coal testing and analysis process. The coal testing and analysis process is a very important part of the power plant's operation.

Rocks of bituminous coal are measured for quality, a determiner of whether it is good fuel or not. Coal quality determines whether it will burn effectively, therefore generating maximum electricity and reducing plant maintenance. The fewer impurities in the coal, the better it

Continued on next page

Hadong

Continued

burns in the boiler. Impurities include ash, phosphorous, sodium and sulfur, among others, which can also cause problems with the coal plant's boiler system.

"This processing is very important. It works to capture coal samples before they are input into the boiler, said Kyungkoo Cho, Deputy General Manager for distributor Ajin Systech.

The Hadong Power Plant, operated by Korea Electric Power Company, produces six percent of South Korea's electrical supply, making it a vital source of energy in the country that produces many of the world's consumer electronics from companies such as LG and Samsung, among many others.

Construction of the plant began in 1993, with the first two coal units producing power. In subsequent years, six units have been added to the plant.

In 2009, power plant engineers faced a challenging decision. Should they lay more than 600 meters of costly fiber optic cable at the plant's coal handling and testing area, or ditch the wire and use Industrial Hotspot radios. The solution was simple. Industrial radios were surely the way to go in this aspect. Meters and meters of fiber optic cable would have been costly, and likely would have been time consuming.

With wireless, there were concerns about signal strength around the plant. There had to be a good connection between each area of the wireless system. ProSoft Technology provided a cost effective, strong signal solution for the Hadong Power Plant.

With ProSoft Technology's RadioLinx Industrial Hotspot radios, the solution turned out to be an easy one for Ajin Systech, a South Korea distributor, contacted by the power company.

"ProSoft Technology's wireless technical solution is stronger than other radio makers in terms of long distance," Cho said.

In the coal handling testing and analysis process, a ControlLogix PLC is connected to a FLEX I/O system at remote coal handling stations, which are used for testing and analysis purposes. ProSoft radios were installed on the conveyor tower, which controls the buckets moving and discharging the coal and the Master ControlLogix PLC. Real control input and output data is transferred between the two radios.

Data is consistently and securely transferred between the radios. Plant engineers know at any minute whether or not the bucket and conveyor system transferring the coal that keeps the plant operational is moving smoothly, as ship after ship unloads valuable cargo. The coal is then inputted into the boilers, where the energy is converted into steam, passing through a turbine that generates the electricity that is added to the country's power grid.

The person continues to watch the TV, eat his cold sandwich, as the Compact Fluorescent Lamp above keeps the room bright. And it all started at a power plant somewhere, possibly with the unloading of coal from a bucket to a conveyor.

The "Age" of Automation

By Victor Garcia & Ken Roslan

Industrial automation is changing. Just go to any major tradeshow and you will see things that would have only been a dream a five-years ago. But all the glitz and glamour on a tradeshow floor is usually vastly different in the real world of a plant floor. For instance, communicating via Ethernet is certainly not new to industrial automation, yet how many of you reading this still have some RS-232/RS-485 Modbus devices working out there? Now RS-232 communications in the automation world is like the equivalent of a 5 ¼" floppy disk in the PC world. Yet, how many of you own a computer that still has one of those? (The non-functioning one in your garage doesn't count.)

For those who may not remember or may not be familiar, an RS-232 port was big on the consumer level in oh, about 1987-1994, before the advent of USB ports. Yes, let's flashback to 1988. Gas was about $1.05 per gallon, George H.W. Bush was President and the Macintosh Plus computer or IBM 486 graced people's desks at home while they played on their original Nintendo. Yes, times have changed drastically and quickly on the consumer level. Today we have smartphones and tablet PCs using wireless connections that run circles around consumer technology from 1988.

So, why are automation engineers slow to embrace the latest and greatest technology? The reason is simple. Many automation products still come with an RS-232 port, even though a 100Mhz Ethernet, which is already showing its age in the consumer world, would be a much faster option. The answer lies with a simple phrase: If it ain't broke, don't fix it. We've all heard the tried and true saying 'time is money.' That couldn't be any truer in industrial automation.

Aging automation equipment has the risk of increasing downtime. Downtime can result in the loss of millions and millions of dollars. Migrating over automation equipment has its own set of challenges. Having enough scheduled downtime to completely upgrade a control system is not always available. Automation suppliers, including ProSoft, have developed products to allow a phased migration, allowing old and new control components to work together thereby

minimizing the risk of extended downtime during the upgrade.

But, still, many are slow to change.

Recently, and you may read about it in this very magazine, ProSoft Technology's technical support team received a call about a module failing after a hurricane. Well, that module was 20-years-old. In 20-years, the company who called to report the failing module didn't replace it. Why? Because it was working just as good as it was when it was opened out of the box until a hurricane. Oh, and what did they wind up replacing it with? A spare module exactly like it they had in storage.

Speaking with some engineers here at ProSoft, I was told automation manufacturers are now only able to produce most of their new PLCs with a 10-year lifespan due to component obsolescence issues. That used to be 25-years. A shorter lifespan means newer, faster, more powerful products will be available.

Marketing directors in the automation world are faced with a slightly different predicament. Nearly two decades ago, digital wasn't an option. Now marketing directors have to choose between how much print vs. how much digital.

Many of today's control engineers were in their prime in the 1980s and 1990s and prefer holding the printed word in their hands rather than reading it from a screen. Do we continue to print magazine after magazine, catalog after catalog, because the majority of automation engineers are veterans in the industry? What happens when they retire? It's only a matter of time, so we slowly inch forward and grasp online marketing, including social media. After all, online marketing, for the most part, is cheaper. But does it make dollars and sense? In time it will, so it is important to be a part of it early. But change is slow in the automation industry, even on the marketing side.

We have to tailor the message to our audience and there is a fine line when it comes to change. You don't want to alienate your tried and true customers, but you also don't want the newer generation of engineers to feel left out on their electronic devices.

Recently, I was at IMTS 2012 in Chicago, and observed the show and several companies, ProSoft Technology included, using social media and interacting with each other. But one thing caught my eye. While there were boards showing the Twitter feed with the IMTS hashtag, there weren't many people glued to their smartphone. Not being glued to a smartphone or tablet, equals very little, if any, Twitter interaction. Yet the Tweets from IMTS officials and several companies kept posting. Oh, and those fairly new things called QR codes were plastered on several booths and displays, yet it didn't seem as if people were clamoring to scan them.

The mere fact that we are seeing QR codes in our industry advertising and social media starting to be utilized shows that the change will happen. You could think of it as a crystal ball. In five years, these marketing tools will be more prevalent in industrial automation, but currently they are a mere speck compared to the hundreds of thousands of magazines, catalogs and other printed material being produced.

But one thing is for certain. Change, although slow, is bound to happen. The RS-232 port may not go away completely, but sooner or later its use will diminish, just as will print marketing materials. It's only a matter of time.

Dam Fast

By Victor Garcia

Fourteen seconds.

Certainly not the type of performance you want from an automobile going zero to 60. Though for a wireless radio system gathering data from more than 70 sites spanning 85 square miles, at extremely varied terrain levels, fourteen seconds is the *crème de le crème* of performance.

The geographical representation is that of the Padre Dam Municipal Water District, located in Eastern San Diego County, which serves several communities from Santee to Alpine. Its terrain ranges from 100' to 2,600' elevation. Padre Dam MWD decided to go wireless with ProSoft Technology Industrial Hotspot Radios in mid-2010, because it was becoming difficult to maintain its then current system.

Its old system, which used RS-232, had a maximum baud rate of 4,800 and took some whopping 90-seconds to get data from all sites. Yes, you read correctly, once every 90 seconds. The software to drive the original radio system was a custom program written in 'C' by outside contractors. "The original authors of the program were no longer available," said Rich Mellor, Padre Dam MWD SCADA Technician. "There was a great desire to replace the system with one that could be installed and maintained with in-house staff, eliminating dependence on outside contractors."

Between the difficulty maintaining the old system and its speed of response, Padre Dam officials knew it was time to upgrade. After a path study was performed with relatively few issues, installation and configuration of the radios went smoothly, Mellor said. "Along with the radios, we replaced the

entire Remote Terminal Unit, including new MicroLogix 1400 PACs, power supplies, terminal blocks and wiring."

There were some challenges with the terrain. "There are many natural and man-made difficulties, which made line of site an almost impossibility, even though some of our sites are on the highest points around the county," Mellor explained. "Using some ingenuity and the radio's repeater ability, we were able to use some of the 900MHz radios as repeaters allowing us to pass information through very difficult terrain."

ProSoft Technology's wireless engineers came on site for two days to assist Padre Dam officials with the field study and verify connectivity. After the study, Prosoft helped Padre Dam MWD evolve the system by creating a communications "backbone" using their 2.4GHz radios. Nine radios linked in a circular pattern which allowed Padre Dam MWD to drive communications in either direction should a failure of one radio ever occur. Seven of the nine 2.4GHz radios are positioned at key sites around the district working with the local 900MHz radio and PLC to transfer the Remote Terminal data gathered back to the office at high speeds. The final two radios are at the office collecting data and storing it in a ControlLogix PLC.

ProSoft Technology's wireless radios deliver data fast for Padre Dam Municipal Water District

At some of Padre Dam's remote locations there is no AC power. It was decided to go solar in those remote locations. "This was a learning curve, between the size of the panels and the type of batteries. Parabolic antenna mounting also became an issue due to size, angle needed, mounting them back to back, and providing a weatherproof splitter to tie them into a single radio."

The wireless radios were phased in over time. The final radio was installed in mid-2012.

"We had to be careful to not interrupt operations too much," Mellor said. "Water delivery and storage is a balancing act between demand and weather."

Data from seventy sites in a mere 14 seconds allows the Padre Dam Municipal Water District to respond immediately should one of its RTUs shut down, just as what happened in April.

"A person driving near one of our RTUs lost control; hit a hydrant and completely destroyed our RTU. Within a just a few seconds, the HMI recorded an alarm of low pressure and total loss of communications with that site," Mellor said.

Knowing what happened and where the incident took place was quick and easy, he added.

Data from seventy sites in a mere 14 seconds: quick and easy.


Allen-Bradley
POWER
RUN
FAULT
FORCE
COMM
IN
OUT
ProSoft

North American Managing Director Scott Sibenac unveils the new "Texting Gumball Machine" to some of the staff in ProSoft's Bakersfield office.

Can you text and chew gum at the same time?

By Victor Garcia

New gateways, new in-chassis devices, new SMS texting modules, gumballs ---- there was a lot on the minds of ProSoft Technology engineers this year. 'Wait, gumballs?' you may be asking yourself. After all, ProSoft Technology is an industrial automation communications company, not a bubblegum manufacturer, but stay with me here.

As ProSoft Technology prepared for the rollout of our new Micro800 SMS texting module, discussion about Rockwell Automation Fair 2012 was just starting to heat up. It was only April. Planning for Automation Fair never starts too early.

Just as we in the marketing department started to rack our brains and discuss what could steal the show at Automation Fair, North America Managing Director Scott Sibenac had an idea.

"What about a gumball machine?" he asked, to which members of the marketing department replied, somewhat shocked, "A gumball machine?"

> "We thought back to how fun it was putting a penny in a gumball machine," Scott said. "Who would have thought it 35 years later; we'd have a device where we could text to have a gumball."

Scott wanted to wire an Allen-Bradley Micro800 PAC coupled with our ILX800 SMS Plug-In Texting Module to a four foot gumball machine. With this setup, a text message could be sent to it, triggering it to pop out not gumballs, but small plastic capsules containing cold hard cash or other prizes. Who doesn't like winning?

But would the idea work? That was the question. Yes, the Micro800 and our

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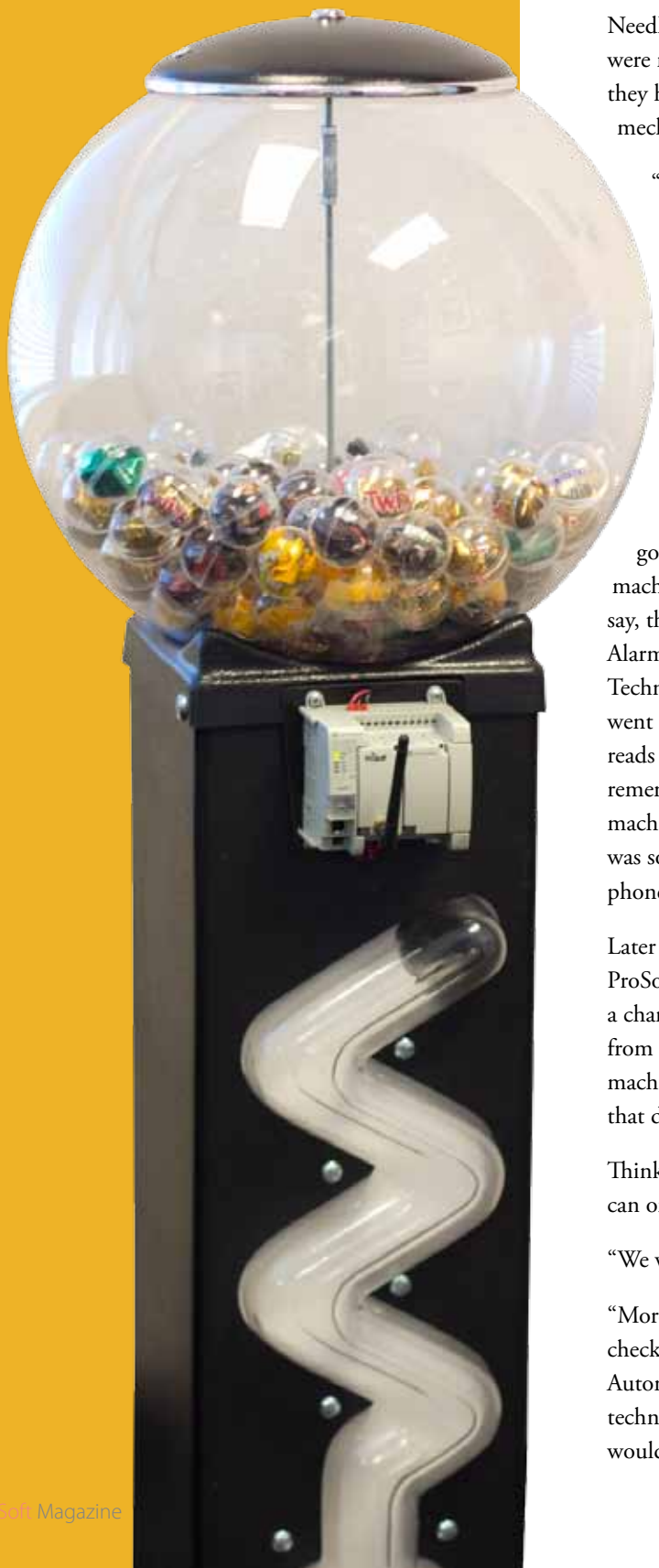
"The most fun part was buying a gumball machine and tearing it apart the moment it showed up."



Texting...

Continued

ILX800-SMSG Texting Module are designed to work in a variety of OEM machinery, from vending machines to HVAC systems, but an old-fashioned rotary gumball machine that spits out a gumball as soon as a quarter is cranked through? This would definitely take some tinkering, and tinkering they did.

Needless to say, several of our engineers tasked with the challenge were ready for it. After receiving the old-fashioned gumball machine, they had it dismantled in 15 minutes and had removed the quarter mechanism.

"They got real excited," said Danetta Bramhall, Commercial Marketing Manager.

Clay Maxwell was one of four people to work on building the gumball machine, who were successful in putting the first machine together within a matter of hours once all the parts arrived.

"The most fun part was buying a gumball machine and tearing it apart the moment it showed up," Clay said.

The commercial marketing department, this writer included, got equally excited, thinking of how to setup the gumball machine with the Micro800 SMS at Automation Fair. Needless to say, there was talk of alarms and flashing lights originally involved. Alarms were going off just about every other day in the ProSoft Technology Bakersfield office earlier this year. The first time one went off, this writer was about to head for the stairs --- as the sign reads by the elevator of what to do in an emergency --- before remembering that an alarm was being installed on the gumball machine. The alarm, which may or may not be on the final machine, was so people couldn't send multiple texts at random from the same phone number.

Later in May, the gumball machine was the center of attention at a ProSoft Technology lunch in our conference room, as everyone had a chance to show off their texting skills in a live demo of sorts. Staff from every department had the opportunity to text the gumball machine. It was like a slot machine for gumballs for about an hour that day once people were given the number.

Thinking you'd like to have a texting gumball machine? Well, you can order one.

"We would be happy to make you one," Scott said.

"More importantly," Scott said, "ProSoft Technology hopes you check it out either at Rockwell Automation Fair or the Rockwell Automation On The Move events next year to see how this technology, the ILX800 SMSG coupled with a Micro800 PAC, would be beneficial for you."

TECH SUPPORT

Living the modern day version of Sherlock Holmes...

By Victor Garcia

Whether it's from a ship crossing the Atlantic or an ultra-luxury European automobile manufacturer, ProSoft Technology's global technical support team fields a variety of calls from around the world.

Our global technical support team has one goal each time a member picks up the phone, and that is to service the customer and give the customer the solution he or she is looking for.

Pre-sales support, check. A module that doesn't seem to work, check. Module doesn't seem to work on a Sunday at midnight, check. Our technical support team, which has hubs on every continent minus the one covered in ice, is there to serve you.

Chris Hines, North America Technical Support Manager, said the philosophy of the technical support team is what makes it one of the best in the industry.

"We basically do everything in our power to get the customer up and running," Hines said. "A customer may tell us what hardware they're using, and we will go read their manual and see how it interfaces with our product."

Many companies won't do that, he explained.

Kentaro Seki | Tech Support

But whether it's North America, including Bakersfield, CA and Madison, WI; Europe, Asia or South America, one thing is universal, everyday is a different story and our technical support team likes a challenge.

Each technical support engineer receives about 15-20 calls each day.

"It's like roulette," Technical Support Engineer Jason Sanders explains. "Every day is different." Sanders has been at ProSoft for seven years. Jason explained how he loves a challenge.

"The calls I love the best are the ones where the customer is telling you facts and the more facts he is telling you, the less it comes to a reasonable conclusion," he said.

That's when Sanders puts on his detective hat. "You have to be Sherlock Holmes," he said. "You have to formulate questions to figure out what's true." His ultimate goal is to find the root of the problem, so he can find the solution.

Our Europe, Middle East, and Africa Technical Support office, based in Tolouse, France, handles everywhere in those regions from Cape Town, South Africa to Reykjavik, Iceland. Its goal, like our other regions, is to offer world class technical support.

"This requires good communication across our technical support teams," said Bruno Forgue, EMEA Managing Director. Jerome Prat, ProSoft's EMEA Technical Support Manager, wasn't available because he was on holiday hiking in the dust of volcanos in

Continued on next page

Jason Sanders | Tech Support

"You have to formulate questions to figure out what's true."

TECH SUPPORT

Continued

Iceland. No cell phone service there.

Cheong Hon Slong, a technical support engineer in our Kuala Lumpur, Malaysia office, and Douglas Alarcon, a technical support engineer based in Brazil, each enjoy helping the people who call their tech support centers.

"It's a very interesting job," Douglas said.

Jose Victor, a Latin America technical support engineer based in Mexico, said he enjoys being one of the main contacts with the customer who has ProSoft products.

"I think the goal in tech support is to know that the customer is satisfied with our job," Jose said. Jose added that he has assisted customers as early as 1:00 in the morning.

Another North America technical support veteran is Steve Crippen. He also likes the adventure of not knowing what he is going to step in next.

"It could be anything from amusement park rides to something on a warship. There are a variety of applications," Steve explained. Steve wants the customer to understand the product. "I get as much satisfaction from helping explain to the customer how it works, as I do in solving the problem," he said.

Douglas Alarcon | Tech Support

There's rarely a slow time in the any of our global technical support centers. ProSoft Technology technical support is always being proactive, explained Technical Support Engineer Brian Gray, shortly after assisting a customer.

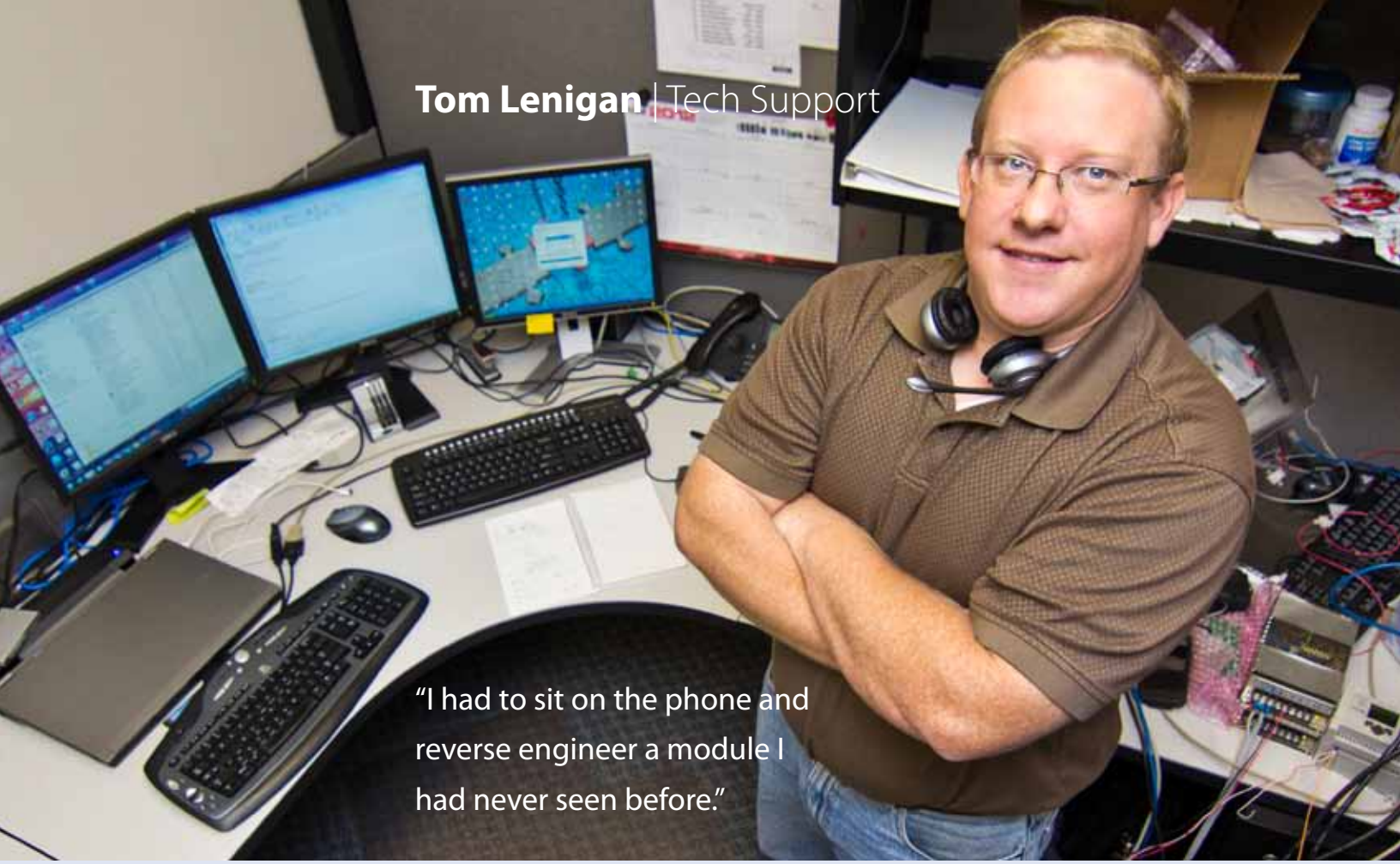
Chris Hines said that the technical support team, when they are not on the phone talking to someone, are working on other things, such as setting up someone's Ladder Logic and helping debug that.

Our wireless technical support team in Madison, WI, may be doing a path study or a field study for a customer, where they analyze the terrain where the radios would be installed. "Path studies aren't easy. They take a lot of time and resources."

Wireless Technical Support Engineer Chuck Stanley said he enjoys working on path studies South of the border. "The terrain in Peru is incredible–sea level to 15,000 feet, mountains in 30 miles," Chuck said.

The goal, though, remains the same, to help the customer find the solution that works for them. A great example is SkySurfer (See page 6) . The user tried time and time again to get help from his old wireless radio manufacturer. Then he called ProSoft. Our team had his issue resolved with our radios in less than a day.

ProSoft Technology's technical support team: global, 24/7.



A hurricane, two diapers and a pot of coffee.

By Victor Garcia

It started in early-2012 with one of our weekend on-call technical support engineers waking up in the morning and having to change two diapers on the west coast. Meanwhile, a hurricane had just happened on the east coast.

Tom Lenigan, Technical Support Engineer, thought his day would be normal; wake up, have a BBQ, and maybe field a couple routine tech support calls which would normally take 10 to 15 minutes each. Then, a hurricane hit the Southeast coast of the U.S. That's when the phone rang. The caller was with a major U.S. utility company, reporting a module failure in one of their plants. Tom then knew it was going to be a long day. "I had to change diapers on my twin girls and start a pot of coffee before I called them back," he said.

The module that had stopped working because of the hurricane was a 1201-MBS. Yep, you read right, a 1201-MBS. Now, you may or may not know ProSoft Technology history, but that's one of the first modules we created more than 20-years ago. "Calling it an antique would be nice," Tom said. "The storm went through and knocked the power out of a module that was more than 20-years old."

Yes, you read correctly, 20-years old. It hadn't skipped a beat in 20-years, and it took a hurricane to knock it out, and that's likely after surviving many other hurricanes that had preceded the one that knocked it out.

Needless to say, a 1201-Modbus Serial Module wasn't on the top of our manual charts, so Tom went digging for a user manual.

"I literally had to call my boss and ask, 'What is a 1201-MBS?'" The utility had a remote station down that was using PLC-5 and I/O. "I had to sit on the phone and reverse engineer a module I had never seen before."

Tom discussed the various options with the company, none of which were what you would call a piece of cake. They took time, but it certainly wasn't mission impossible for a member of our technical support team.

There was a Plan A, a Plan B and a Plan C. The utility company had a backup module stored hundreds of miles away on the other end of the state. They send a driver north to meet a driver who was heading south to pick up a 1201-MBS. It was like a relay race with the module in the pouring rain. Meanwhile, they had a newer 3100-MCM on-site. Tom assisted the caller to change the LadderLogic to convert the program to use the 3100-MCM, as someone was picking up the 1201-MBS miles away.

"Hours later, we are almost done with our 3100-MCM conversion when the person arrives back with the replacement 1201-MBS," Tom said.

This was about 7 hours later. His wife had given him eggs and toast and took their children to the park long ago that day.

The customer then powered down the rack, plugged in the replacement 1201-MBS and downloaded the hardware.

Success – a hurricane, two diaper changes, a pot of coffee, and seven hours later.

First Metro Line in Suzhou

By Victor Garcia

Picturesque gardens dot the city of Suzhou, in eastern China's Jiangsu province. Some of these gardens, known as the Classical Gardens of Suzhou, date back as far as the 11th century, and were designed by some of China's renowned scholars. Nearby, numerous canals crisscross the city that is known as the Venice of the East. Forty-two percent of the city is covered in water through its canals and waterways.

"Suzhou City is one of the most famous tourism cities in China," said Gary Zhang Zhen Hua, ProSoft Technology China Sales & Technical manager.

But while the area is likely one of the more picturesque in the world, thanks to its gardens and canals, it is also highly populated with more than 10 million people and is largely industrial. Like many cities in China, automobile congestion is a problem. The city needed to install its first subway system to help alleviate its traffic congestion.

After more than four years of construction, the Suzhou Metro Line I opened in April 2012. It encompasses 24 stations that connect the east side of the city to the west side over about 16 miles. The line extends from the Mudu station in the eastern portion of the city to Zhongnan Jie station in the west, near Suzhou Industrial Park. Metro Line I is the start of a larger subway system in Suzhou. Later this decade, the city will construct Metro Line II, which travels north and south.

"The Metro Line I is the first Metro Line in Suzhou, which goes from west to east, connecting two economic development zones and the downtown," Gary Zhang Zhen Hua said.

More than 150 ProSoft Technology Modbus to 'C' Programmable communication modules were installed in the Metro Line's Building Automation System, which plays a vital role in the underground tunnels and stations that make up the subway. The modules allow Rockwell Automation ControlLogix and FLEX I/O systems to communicate and gather data from ventilation systems, air conditioners, as well as monitor the overall environment inside the subway system.

Most people think of a train speeding down an underground tunnel when they think of a subway. A Building Automation System is likely the last thing that comes to mind, but without this critical piece, a subway would not be able to operate.

"The ProSoft Technology solution is a good one," said Jianshui Gan, the Building Automation System engineer working on the Suzhou Metro Line I. "We chose ProSoft Technology's product because they are the communication adapter between field devices and the ControlLogix controller."

More than 200,000 people per day, tourists and Suzhou residents alike, now use the Metro Line to get from one end of the city to the other and avoid automobile congestion. The train rolls on – in part thanks to ProSoft Technology's modules.

Water Water Everyw

...and data where it's supposed to be thanks to ProSoft Technology gateway

By Victor Garcia

Management of water resources in a state with large urban areas in addition to many acres of agriculture isn't an easy task, no matter what part of the world you are in.

HidroLara is responsible for administering drinking water in the Venezuelan state of Lara, which has a population of 2 million people, and includes the urbanized area of Barquisimeto. This may seem like an easy task, but water resources are somewhat scarce in the state, and special management is essential.

Besides the urbanized areas, such as Barquisimeto, the state of Lara is largely agrarian.

HidroLara began a pilot project in 2011 where the company installed a supervisory system based on Rockwell Automation's Factory Talk coupled with wireless communication at its Los Dos Cerritos water substation, which collects water and distributes it from the Los Dos Cerritos reservoir. At the time, the Venezuelan water company was having a difficult time integrating the SCADA system and end devices because of the multiple communication protocols involved including Modbus and PROFIBUS DP.

Gathering data from the Los Dos Cerritos Reservoir and its substation is critical. "It's a fundamental part of the city, as a large amount of water is taken through these two facilities," said Juan de Sousa of LS Innovaciones, the integrator who devised the solution.

LS Innovaciones proposed a new communications architecture at the Los Dos Cerritos Water Substation using ProSoft Technology's gateways to communicate

where...

between the PROFIBUS DP and Modbus RTU network. Their solution involved both wired and wireless communication. On one end, radios were transmitting signals from pumps into the Hidrolara network, while the gateway was controlling and gathering data for the discharge valves on the other end of the network via PROFIBUS and Modbus.

HidroLara can see all the variables in the water substation and check very important variables, such as the flow levels from the Los Cerritos Reservoir.

"Hidrolara is very happy with this project," de Sousa said. "They can see all the variables in the substation. They want to do this project in five additional substations."

De Sousa chose ProSoft Technology's gateways because they support a variety of protocols that can be used in many different applications.

"ProSoft Technology offers several products that interface different communication protocols," De Sousa said. "Our company often connects different devices and having a platform like ProSoft is very important. We have used different ProSoft gateways with different protocols including Modbus, PROFIBUS, DNP 3.0, EtherNet/IP and Modbus TCP, and they all work correctly. We have also used ProSoft wireless devices, which have given us very good results."

De Sousa also added that ProSoft Technology products are easy to configure and its technical support is top notch. "Latin-American Support Engineer Jose Victor provides excellent support when there is any question about the product."

Wireless Automation allows you to HAVE A SEAT.

By Victor Garcia

When most people hop into their new car for the first time, the first thing they do is adjust the position of the driver's seat. Moving it forward or backward, they either automatically or manually adjust the seat by pushing a button or two, or pulling levers, while getting it into a comfortable position.

Many of those seats were manufactured by Johnson Controls in Tlaxcala, Mexico.

In Tlaxcala, Mexico, forty-three carts go through what's known as a urethane process as they move around a production carousel. Johnson Controls had difficulties with the wired communication system, because the wires were starting to break, and when a wire broke, production was hindered until the wire was fixed. This resulted in unexpected downtime. Johnson Controls wanted to improve the system and chose ProSoft Technology's wireless radio solutions.

Johnson Controls had four requirements of the new system. These include having the capability to monitor and control the process in real-time and obtaining seamless and robust communication between carts. In addition they wanted the ability to bring data to a PC in the field office and control the robot permission to run urethane injection, based on information transmitted via the radios.

Johnson Controls' system integrator and distributor chose ProSoft Technology, because they wanted fast wireless communication. Each of the 23 carts now has 1734 I/O from the Rockwell platform physically connected to an IHN radio with an IHN Master connected to a ControlLogix platform. ProSoft Technology IHN radios can transfer data at a high rate of speed up to 300Mbps.

"Johnson Controls found in ProSoft Technology the best option for wireless communication based on the testing results and presale tech support provided on-site," Johnson Controls Project Leader Adrian Torres explained. ADEPI, the systems integrator, and Risoul y Cia, the distributor, worked with ProSoft Technology technical engineers to make the project successful and get past a hurdle involving the data transfer rate. ProSoft Technology engineers, including Hugo Amador and Jose Victor, helped streamline the installation process.

"It took only a couple of days to have it completely optimized," Hugo said.

Speed is now optimized and broken communication wires are a thing of the past at the Johnson Controls plant. With that, so is the downtime that occurred as a result. Data is transferred at a high rate of speed between each of the carts and the ControlLogix platform.

Twenty-three radios were installed and the company plans to install wireless on the remainder of its carts, likely by Jan. 2013. With the successful implementation of the radios, Johnson Controls is also looking at installing a similar solution at its plant in the United States.

Need real-time data?

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ProSoft Technology introduces our new family of Ethernet and Serial Gateways. These new gateways will amaze you with their blazing fast performance and easy-to-configure interface.

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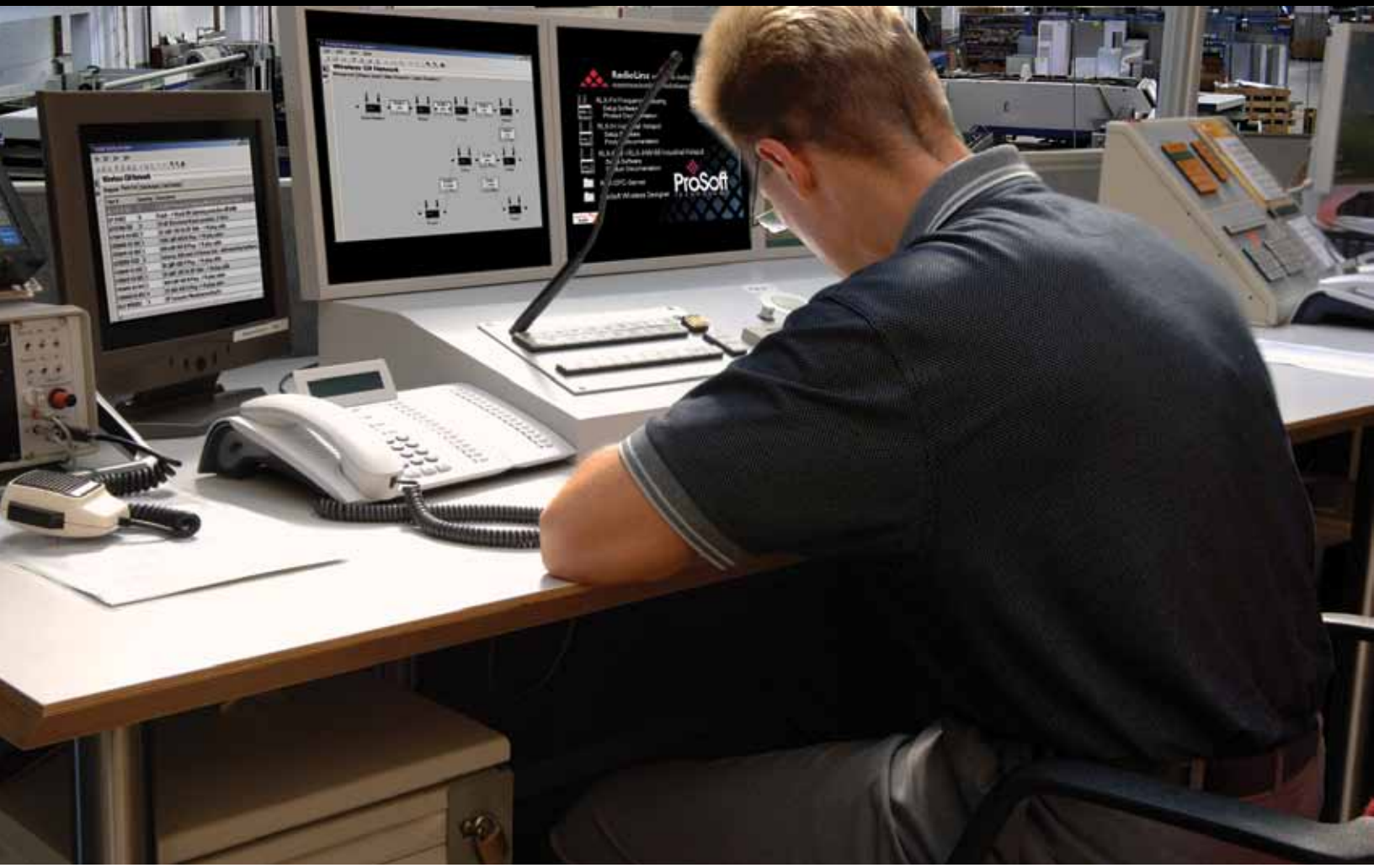

Wireless adaptation in industrial automation

By Bruno Forgue

Industrial Automation engineers like to adopt and adapt existing IT technologies for a variety of reasons including the benefits of interoperability and the benefit of producing products in volume.

Consider computers, Ethernet switches, touch screens and many other IT peripherals, for instance. They all have their industrial equivalents, and today every automation engineer is using these technologies.

Wireless Local Area Networks aren't an exception. The 802.11x series of standards came down to the factory floor and rapidly found multiple applications. Early adopters are using 2.4 and 5 GHz wireless technology in many aspects of their factory automation applications. There are hundreds of thousands of industrial radios transmitting important data worldwide. Getting to this stage took not only ruggedizing wireless devices, but making them so they could operate in noisy RF-environments.

Why do automation engineers adopt wireless standards?

When automation engineers say "wireless" or "industrial wireless," as a consensus they refer to 2.4 and 5 GHz license-free bands. These bands are used by Wireless Local Area Networks, which are usually based on the IEEE 802.11x series of standards.

Industrial Automation Engineers are using wireless in the network architecture of their automation systems: cranes, conveyors, press

machines, etc. These engineers are machine builders, system integrators and end users. These people can't suffer downtimes. They depend on reliability and security. Each device they use should be easy to configure and reconfigure by non-expert technicians. They need robust solutions that are simple and efficient, reliable and supported by the vendor. Most like their systems to be installed for more than 10 years.

When asked about their main motivations for going wireless, Automation Engineers refer to, in short:

- Reducing engineering and installation time
- Reducing maintenances operations and increasing reliability
- Improving machine performance
- Costs

Wireless impacts applications, in terms of cost reduction, time savings and increased reliability, resulting in greater productivity. With wireless, network engineering is simplified and installation is made easier. There is less hardware to consider, to look for, and install.

Maintenance

We can consider moving machines with rotational and linear movements where, compared to cables, contact-rails or slip-rings, there is less maintenance. There are no more cable stresses and breaks and no parts to clean up or replace.

Conductor-rails are expensive, not easy to install, need frequent maintenance and don't allow high speed communications. Typically, on machines where cables are suffering from repetitive high-speed movements, wireless reduces the risk of cable damage and communications issues.

As a result, the whole application is gaining in reliability and production times are increased due to the wireless networking option.

Benefits can vary depending on the industry where the wireless application is used.

How can wireless standards be adapted to automation specificities?

In the early years of the adoption of 2.4 GHz license-free solutions by automation engineers, they began to use Frequency Hopping Solutions (FHSS). Today FHSS solutions are still preferred for their very high security levels, and for use in areas with very high levels of interference.

Soon, there came a need for high speed industrial automation protocols, such as PROFIBUS or EtherNet/IP, to be transported wirelessly. The IEEE 802.11abg standards were rapidly considered as a good opportunity to provide an acceptable solution. This is where wireless started to become "Industrial Wireless." Some of the key and expected specifics of "industrial wireless" solutions are in filtering, signal processing and data processing, among others. In addition to supporting the 802.11x specifications, some particular algorithms had to be embedded inside the radio.

Industrial 802.11x radios have to operate despite constraints of the tough industrial environment. In terms of temperature gradient, vibrations, dust and humidity, they respond to similar standards as other electronic devices such as PLCs and PACs, motor drives and other actuators and field devices. They are installed just about everywhere, from on the machines, to in the electrical cabinets, to outdoor and washed-out areas. This is one point.

The second point is related to Radio Frequency propagation. At 2.4 and 5 GHz, waves are propagating on straight lines, just like light does. These waves are reflected on metal parts in factory automation applications. There are many cases where an obstacle can take place between two antennas, and on a factory floor metal is almost everywhere. As a result, propagated waves are following multiple paths for going from one emitting antenna to a receiving antenna. All these echoes are generating noise. When two or more radios are emitting at the same time, just imagine that the level of RF noise is rapidly increasing.

Finally, developing wireless technology for use on the factory floor has required special care, expertise and experience, which the end-user can benefit from. Because at the end of the day, the user is looking for a networked solution for transporting his critical data, most of the time specific to his industrial protocols, and for good operation of his automation system.

How do technology improvements bring additional value?

With the arrival of the 802.11n standard, automation is moving quicker, with much faster transmission speeds, more robust RF transmissions and easier separation of control traffic and computer traffic. Key specifications of 802.11n, such as MIMO, allow multiple antennas to be used on the radio. The processor inside the radio optimizes the use of one or the other antenna, depending on the quality of the detected signal. The possibility to define Virtual LANs also will help simplify deployment of networks using these radios. Industrial and automation class 802.11n radios offer very high speed, up to 300 Mbps. In short, new industrial applications can now benefit from the IEEE networking standard options.

And what about the future?

Let's consider the evolution of industrial protocols over the last three decades, and the improvements of "industrial wireless" solutions for about 10 years. From automation engineers' point of view, standard wireless solutions offer a better fit to their requirements over time. They have expectations to satisfy, but they also believe electronics and wireless chipset developers will go-on improving the technology. While wireless will not replace all of the cabling and contact solutions, automation engineers believe wireless solutions will continue to improve, and the spectrum of potential applications will expand.

The Funny Page

Fred the Frequency Hopper presents The SMS Texting Module

Fred the Frequency Hopper, your wireless superhero, to the rescue. Remember me? Well, in case you don't, I am the superhero here to rid you of those pesky, expensive wires. Today I present you with the newest member of my tools to fight unnecessary wires. Yes, my friends, I present you with the SMS Texting Module for the Micro830 PAC. Yes, no longer does one need to be right at a machine when it has an alert. Alerts can be texted to any cell phone, smart or otherwise, to anywhere on the globe. Vacationing in Hawaii and need to know the status of a vending machine in Maine? Yes, the SMS Texting module is the answer. All you need is a phone number to text to. Now what was the number again? You'll have to find out at Automation Fair Booth 625 or at a Rockwell Automation On The Move event next year.

Spot the Difference

The Texting Gumball Machine, featuring our Micro800 SMS Texting Module.

There are seven differences between the two pictures. See if you can find them.

Answers are upside down at the bottom.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

1. Thumbs up is reversed. 2. Screw on right is turned 3. SMS texting module moved to right side of Micro800. 4. Pillow moved on couch 5. Different antenna on texting module 6. Candy bar switched in dispenser 7. Light is on.

Were you there?

ISA Argentina

Sergio Arias was a presenter at the ISA Argentina event in June.

Puerto Rico RAOTM

Antonio Ramirez, Regional Sales Manager, showcased ProSoft Technology's solutions at the Puerto Rico Rockwell Automation On The Move event in August.

IMTS 2012

ProSoft Technology was at IMTS 2012 in Chicago displaying its connectivity solutions.

From ProSoft Technology

New Gateways • *New* In-Chassis Modules • *New* Wireless

PLX30 Ethernet and Serial Gateways

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- Add-On Profiles provide Premiere Integration
- Supports messaging to and from controller tags, SLCs and PLC5s
- Supported protocols include EtherNet/IP, Modbus, Modbus TCP/IP, Modbus Serial, ASCII and Siemens Industrial Ethernet.

EtherNet/IP to IEC-61850 Gateways

Features

- Application specific Add-On Instructions
- No development of communication logic or tag structures required
- User defined data types are automatically generated

New & Enhanced CompactLogix Modules

Features

- High performance
- Configuration over Ethernet
- Supports Modbus and Modbus TCP protocols
- Add-On Profiles provide Premiere Integration

DNP3 Ethernet Modules

Features

- Provides client and server capabilities to ControlLogix
- Ability to poll up to 40 DNP3 Ethernet devices
- Module can also operate as Ethernet server & data concentrator
- RSLogix5000 configuration

Enhanced Siemens Industrial Ethernet module for ControlLogix

Features

- Supports up to 20 clients
- Application specific Add-On Instructions
- Remote configuration & diagnostics
- Enable and disable commands directly in Ladder Logic

802.11abgn Fast Industrial HotSpots

Features

- Fast Roaming provides seamless networking to moving devices
- 300 Mbps RF Rates support demanding wireless applications
- Repeater Mode allows wireless repeating without an Ethernet cable
- 802.11i security standards

And don't forget to check out our Texting Gumball Machine at Automation Fair. It features our new SMS Texting Module for the Allen-Bradley Micro800. There will be prizes.

Visit us at Automation Fair Booth 625 for all the news!

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