The ProSoft Magazine

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ProSoft CONNECT

Secure.
Remote.
Access.

ProSoft Connect helps you make the most of the Industrial Internet of Things.

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The ProSoft Magazine

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ProSoft Perspective

EXTENDING THEIR CONNECTED ENTERPRISE:

How ProSoft is showing customers the values of the IIoT.

By Subhajit Bagchi
Vice President & General Manager

The physical world is being digitized as connectivity is added to more and more objects. Industrial IoT is the ongoing digitization of the critical infrastructure and the associated additional value that its owners and operators can derive from it.

This digitization has been happening for some time now and there is already a huge number of objects that have the connectivity but don't always "talk the same language." A recent study by McKinsey Global Institute found that in the worksite setting alone, 60 percent of the potential value of IoT requires the ability to integrate and analyze data from various IoT systems. Overall, interoperability is required to unlock more than $4 trillion per year in potential economic impact from IoT use in 2025, out of a total potential impact of $11.1 trillion.

ProSoft is where automation connects.

This is where ProSoft, with its suite of over 60 supported industrial protocols and wired and wireless connectivity solutions, comes in by extending the Connected Enterprise to the edges that are already digitized but would otherwise not be interconnected.

For example, the owner of a factory who derives value through the automation of its production lines may be able to unlock additional economic benefit by synchronizing the operation with the building's air conditioning and lighting systems using ProSoft BACnet® modules for leading automation architectures, thereby extending the boundaries of the connected factory. A multi-well pad operation may extend the value of the digital oilfield through integrated flow computing modules from ProSoft. A power generation and distribution company may be able to extend its connected grid across multiple vendor platforms by using ProSoft IEC61850 products.

Extending the Connected Enterprise often requires connecting assets wirelessly where running wires may not make sense. ProSoft – with its wide-ranging portfolio of wireless connectivity, from 802.11 WLAN to frequency-hopping wireless, cellular, and wireless I/O – allows customers in hazardous or widely distributed environments to extend their Connected Enterprise to those new assets.

Lastly, substantial additional value can be realized by extending the Connected Enterprise across assets and people in multiple geographical locations securely, to enable applications like remote maintenance for example. ProSoft Connect and cellular gateways enable such secure access to the industrial assets.

ProSoft is where automation connects. With its years of experience enabling customers to securely migrate to and extend their Connected Enterprise, ProSoft is well-prepared to be the trusted partner in your journey in Industrial IoT. We look forward to joining yours! ◆

FORGING new visual and social connections

By Lauren Robeson
Editor-in-Chief

You probably think a few things when you hear that: She's always on her phone! She communicates only through Facebook and Instagram! And she's probably also bereft of any pre-1980 pop culture phenomena.

And I am in fact dependent on my phone, and you may be relieved to know I've seen two-thirds of the Godfather trilogy (turned off Part III halfway through because it's Part III).

I am well-versed in social media, though. And each day I'm using that knowledge to "talk" with ProSoft Technology's superfans on a variety of social media hubs.

Connecting with ProSoft on a more social level

With our involvement on LinkedIn, Twitter, YouTube, and other sites, we're able to find out more about what you like, what you're not so fond of, and what's most important in your PLC, in your facility, in your life. Over the past few months I've learned:

- What you find useful – for example, our new Multi-Point Wireless I/O system (see page 27)
- What's important to you – such as the oil and gas industry, and how to utilize the Industrial Internet of Things to your advantage (and we can help with that in spades starting on page 6)
- That the voice of training video guru Ian MacIntosh apparently sounds a lot like that of T.A.R.S. in the movie "Interstellar." I haven't seen it, but I'll take your word for it. (Also: Not the same guy, per Ian.)

We're excited to take part in and facilitate those conversations. Just like when we talk with you out in the field, we take in your comments, questions, and suggestions and strive to make our communications – whether in a plant or on LinkedIn – even better as a result. That helps make our ProSoft Technology community even stronger.

Here at ProSoft Technology, we're active on social media, but we stick to the sites that you've told us you like the most for business matters (so let's just say we won't be posting Snapchat stories or starting a gateways board on Pinterest anytime soon).

Like many businesses, you can find us on LinkedIn, where we share the latest news about ProSoft's communication solutions and articles about issues affecting the industrial automation sector. We also have profiles on Facebook and Google Plus, cluing you in to worldwide updates from ProSoft. And on Twitter, you can get short snapshots of our latest news.

Make sure to share news about the products and videos you're most excited about with your own followers!

Connecting With You on Your Favorite Sites

Go to **psft.com/BSQ** and click on the logos at the upper right to see our Twitter, Facebook, LinkedIn, YouTube and Google Plus profiles!

And go to **psft.com/BQB** to see a collection of our top educational and training videos!

Popular videos

It seems like we hear from you every day regarding our videos – and we're happy to say it's positive feedback and questions that we're excited to help you solve!

Our videos range from training tutorials that walk you step by step through setting up a product to entertaining videos that give you an idea for what to expect at each year's Automation Fair®. If you've ever wondered just what goes on behind the scenes as we get ready for such a major show, be sure to watch the 2015 video! And, of course, be sure to catch our fun videos promoting our latest solutions – these quick snapshots give you a broad, interesting look at our latest innovative services. Michael Auffant, ProSoft's photographer and videographer, is always coming up with creative ways to both entertain and inform.

We are especially proud of our educational videos. If you haven't seen it yet, you should check out our Modbus® primer video – it's racked up a ton of views, and plenty of fans! This year we've premiered a video detailing which types of antennas are best for a variety of applications, and another focusing on RS485. We're always looking for ideas of what videos you'd like to see – so if there's something you'd like to know more about, be sure to let us know and we'll add it to our video queue! Have a time-sensitive question, whether it's product-specific or a general query? Be sure to post it – our Technical Support team is happy to help and we'll get an answer to you as soon as possible!

As you can see, we've got plenty of ways to communicate with you, and they're only increasing. (They include real-time conversations you can have with our experts via tech support or on our new cloud-native platform, ProSoft Connect.) And of course, you can always call us at 661-716-5100. Be sure to share your suggestions and thoughts with us on social media – whether it's something you like, don't like, or think would be an awesome idea for a new video! Just not on Snapchat. Never there. ◆

ProSoft Connect™ Demonstrates the Benefits of a Container and Microservices

By Keith Blodorn
Director of Wireless Program,
ProSoft Technology

ProSoft Technology has delivered valuable products and services helping industrial customers connect automation equipment across different networks for nearly thirty years. Today, as its customers are looking to benefit from the Industrial Internet of Things, ProSoft introduces a new secure, cloud-native platform called ProSoft Connect to help customers do more. ProSoft Connect provides some unique advantages because of the Container and Microservices cloud architecture that it's built on. This article describes the Container and Microservices architecture and illustrates how ProSoft customers benefit from it.

What are Containers and Microservices?

"Containers" and "Microservices" are terms used to describe an approach to developing applications for use in a cloud environment. The term Container brings to mind a shipping container – a standardized box used in shipping to make it easier to move products overseas, through ports and across railways. In cloud application development, a Container is a standardized set of services that support the application running inside the container and provide connection to the cloud host environment. Microservices are the applications that run inside the Containers. As opposed to writing a single, monolithic program to deliver all user functions, developers build Microservices that perform a very specific task. Various Microservices come together to form what appears to the user as a complete cloud-based service. Yet, since each Microservice and the Container it resides in is fully self-sufficient, these functions are not dependent on each other.

This concept is a departure from the predominant software development approach of the recent past. For many years, software developers built full programs that would

Just as the advantages of shipping containers make logistics operations more efficient, cloud-native container technologies make cloud-based programs easier to develop, deploy, and operate.

install on a computer and run in a specific computer operating system. All of the functions of the program exist within the code, and the entire program is installed together. The program then depends on the operating system to provide the required connections to the world (input devices like the keyboard, output devices like the monitor, network connections, etc.). In addition, all of the functions within the program depend on each other. This approach to programming worked well as long as there would always be a fairly complex host to run the program – the computer operating system.

As more computing functions are moved to cloud hosted systems, this paradigm is no longer the ideal way to develop computer programs. Many applications have been ported to the cloud simply by running a virtual machine with a specific operating system, and installing an existing PC- or server-based program to that virtual machine. This is a very inefficient approach since many aspects of the operating system are not needed by the program. Further, since all of the functions of the program are interdependent, a failure in any part of the program can crash the entire service. Booting up a new VM with the service can take minutes. Reliability is improved by adding "failover" servers, which are entire copies of the virtual machine running side by side.

Containers and Microservices provide a better way to build software for cloud deployment. This approach begins with the compartmentalization of program functions into Microservices. A Microservice is just a specific function of the program. Think of the payment service on an online retail site. The overall service may have many such Microservices providing different functions. The other key element of this approach is the Container. The Container is a standardized interface between the Microservice and the rest of the world, similar to how the operating system provided the interface for the monolithic program in the old paradigm.

Containers offer quite a few advantages in the cloud hosted environment. They are much less resource-intensive compared to virtual machines and full operating systems, so it's easy to deploy multiple instances of a particular Microservice to handle traffic and provide better reliability. Containers "spin up" in less than a second, so failure recovery is extremely fast. Making functions fully independent from one another also allows the development team to use the best programming language for each function, rather than choosing one language for all functions. If one function is most easily deployed in Python, and another function in C++, each function can be developed in the optimal language for that function and deployed in its own Container.

Think of the old approach of monolithic programs running on virtual machines as a warehouse. The warehouse, like the virtual machine, is designed to house any manner of contents. It is quite large and time-consuming to build, and the contents inside are all dependent on the integrity of the warehouse – and can even be affected by problems with other contents. In addition, each warehouse is built with different configurations – aisles, shelving, doorways – so moving contents from one warehouse to another will require changing how the contents are stored. When things are busy, the warehouse may be full, while at other times, it will be nearly empty. Yet it takes up the same amount of space either way.

By contrast, shipping containers are really very small, modular warehouses. Each one has standard dimensions, handling provisions, and configuration. Containers hold all kinds of different contents, yet it is very easy to manage many containers by stacking them on ships or in shipyards. Individual containers take up much less space than a warehouse, and it's relatively easy to add containers when more contents need to be stored. In busy times, the shipyard may be full of containers stacked in rows. When it's not busy, far fewer

containers are needed. If anything happens to a container, only the contents inside that container are affected, and a replacement can be ready quickly.

Just as the advantages of shipping containers make logistics operations more efficient, cloud-native container technologies make cloud-based programs easier to develop, deploy, and operate.

How the Container and Microservice Architecture Benefits ProSoft Customers

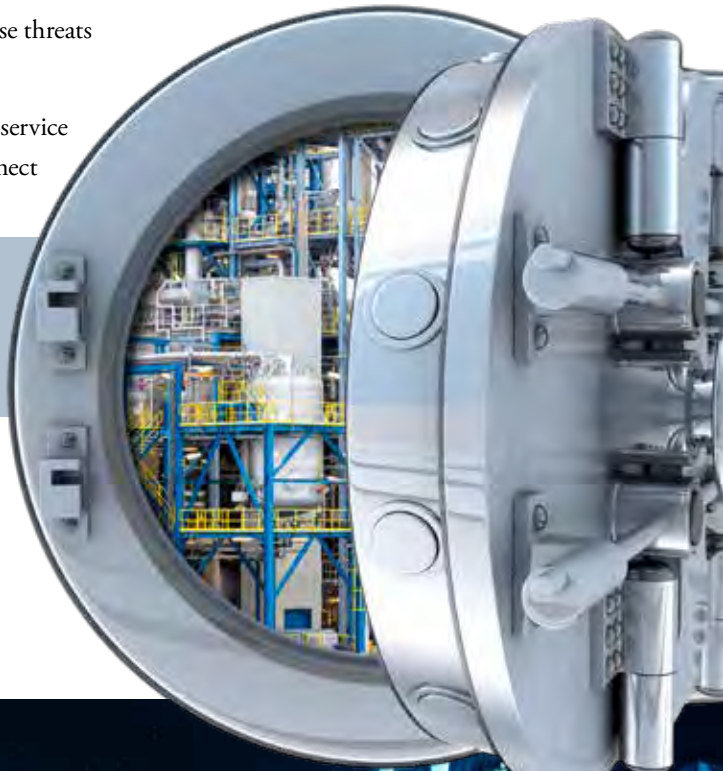
ProSoft Connect allows customers to securely access industrial automation devices – such as PLCs and HMIs – remotely from anywhere in the world. Secure remote access allows system integrators, machine builders, and large end users to troubleshoot problems with their systems more quickly, and gather data from machines or plants around the world, and plant operators to manage process equipment spread globally. The unique advantages of the Container and Microservice architecture include enhanced service reliability, improved security, and superior ease of use.

For manufacturing customers, reliability is always a critical attribute. Secure remote access services are no different. When a machine is down, engineers need to access the machine control system and begin troubleshooting immediately. ProSoft Connect users enjoy highly reliable service in part because the Container/Microservice approach allows the service to run multiple simultaneous sessions with minimal consumption of cloud computing resources. In fact, there are always at least three of every service running! There is no need for the "fail-over" servers that old VM-based systems used for reliability. Even if all of the current instances of a service were to suddenly stop, a new instance can be started up in under a second. This means that when an engineer needs to access a remote machine, ProSoft Connect will be ready to make the connection.

As more industrial processes connect to the Internet, cybersecurity is an important aspect of connectivity solutions. The Container and Microservice architecture helps ProSoft Connect deliver a higher level of security for users. First, ProSoft Connect is a fully cloud-native solution that requires virtually no user-installed software. This eliminates a significant attack surface that past cloud connectivity solutions opened up. User-installed software is vulnerable to tactics like "watering hole attacks," where hackers embed sniffer code inside the software download and use that to gain access to equipment. Also, software must be kept up-to-date as vulnerabilities in the underlying software services are discovered and patched. ProSoft Connect requires only a browser and an OS-native VPN client to work, so these threats are greatly reduced.

Second, the Container and Microservice architecture enables ProSoft Connect developers to build a very robust and secure service using the latest state-of-the-art cloud development tools. Containerized functions prevent potentially cascading issues, since each function operates autonomously in its own Container. Finally, Containers provide the basic supporting services that a piece of code needs to run. This means there are fewer components that might be vulnerable to attack, compared with a full VM and operating system.

The most noticeable advantage of ProSoft's choice to use Containers and Microservices is in the ease of use. ProSoft Connect functions were built using the best programming language and supporting services for each function, which contributes to the simple user experience of the service. For creating VPN connections to remote equipment, ProSoft Connect offers EasyBridge™ technology, which forms a Layer 2 connection between the user's PC and the remote PLC network. Containerized services running in the ProSoft Connect service handle the complexity of network routing, so the user can connect to the remote network just as if they plugged an Ethernet cable into the remote Ethernet switch.



Secure. Remote. Access.

For more information about ProSoft Connect go to **psft.com/BTU**

ProSoft CONNECT

A Platform for the Industrial Internet of Things

Perhaps the most exciting aspect of ProSoft Connect and its modular architecture is the promise of things to come. The Industrial Internet of Things (IIoT) is a hot topic these days, and for good reason. As new technologies develop to help manufacturers cut costs, improve productivity, and deliver products faster, ProSoft Connect users will have a powerful secure platform to connect industrial data to high-value cloud services. ProSoft already helps customers around the world get data from machines speaking one protocol to machines that speak a different protocol. We've now built the foundation to help customers take those machines and deliver the value the IIoT is promising. ◆

Your Cloud-Native Platform for the IIoT

When I first saw ProSoft Connect's Web interface, I thought, "Wow, this is so cool!" Ditto when I heard just *how* ProSoft Technology's new cloud-native platform for the Industrial Internet of Things works. And working in marketing, I was even more thrilled when I heard just how user-friendly this service is. I sat down with Keith Blodorn, the director of ProSoft Technology's Wireless Program, to find out more.

Lauren Robeson

Q Keith, how did ProSoft Connect come to be created?

A Industrial customers have been using ProSoft cellular products for remote access for some time. However, tasks like setting up a VPN server, configuring all the devices, and even getting a fixed public IP address from the cellular carrier were time-consuming and not always straightforward. ProSoft Connect came about as a way to make our customers' jobs easier by eliminating the need to fuss with all of the setup that some remote access solutions require.

Q You hear scary things about "the cloud" sometimes. How does ProSoft ensure that our service can be securely used?

A We have several layers of security for ProSoft Connect. The service uses your PC's operating system VPN. We use the industry standard HTTPS for all connections. ProSoft Connect also runs on Amazon Web Services, which utilizes advanced cloud security technology; and we also require a certificate and one-time use keys to authenticate your gateways.

Q One thing that's exciting about ProSoft Connect is its use of EasyBridge™ technology. How does that help users?

A We've been hearing a lot of great feedback about that feature. Basically, it enables the user's PC to connect to the remote network and allows their software tools – such as RSLinx®, Studio 5000, Unity, TIA Portal, and many others – to work without having to deal with any routing. This basically makes your PC act like it is connected directly to the local switch on the remote network. It's the next best thing to the transporters from "Star Trek" when you have to monitor remote devices.

Q What have you heard from customers so far about the ProSoft Connect experience?

A We took a very unique approach in developing ProSoft Connect, in that we engaged a company that is well-versed in user interface design right from the outset. As a result, we have had a significant amount of direct customer feedback in the development stage, which led to what we feel is the most user-friendly service available. Feedback from customers who have begun using Connect has been incredibly positive, both about the overall user interface and about the EasyBridge support. ◆

From walkie-talkies to a robust wireless communication system

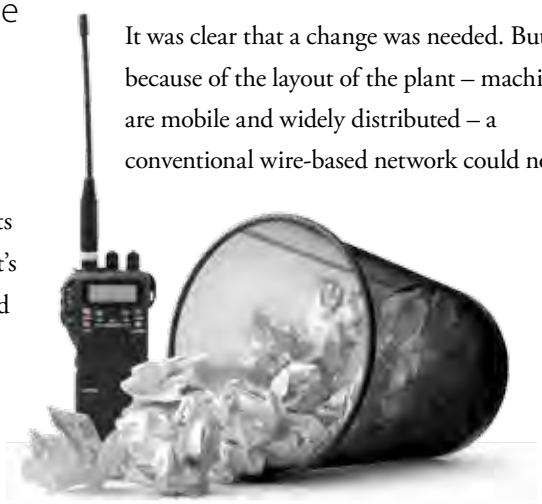
By Lauren Robeson

The Durgapur Steel Plant in Durgapur, India, has long been a major institution in the city. The plant – run since the 1950s by the Steel Authority of India Limited (SAIL), the country's largest steel company – has brought many jobs to the residents of Durgapur over the decades and has undergone multiple modernization updates.

The plant features state-of-the-art technology, ensuring quality steel-making. And the plant's updated units have led to improvements in the plant's productivity, energy conservation, and product quality.

A couple of years ago, the communications infrastructure in the raw material handling plant was in need of a major overhaul.

Back then, wired control cables were used in all four stacker reclaimers for communications between operator cabins and PLC control rooms. In this setup, it was difficult to diagnose breakdown or trouble areas, and there was no communication facility available between the stacker reclaimers, the central control room, and dispatchers throughout the plant. That meant that breakdowns were reported via walkie-talkies, after which maintenance personnel would have to physically go to the area where the breakdown had occurred.



It was clear that a change was needed. But because of the layout of the plant – machines are mobile and widely distributed – a conventional wire-based network could not be used. This meant that no online diagnostic facility was available in the control room, and led to slower maintenance and elimination of faults, delaying operations. That chain of events for any breakdowns proved to be time-consuming and costly. Other issues included breakage in hard-wired control cables, and an outdated alarm display that did not clearly help personnel diagnose the type and location of problems.

The plant's four stacker reclaimers each featured a Siemens® S7-300 controller, with an S7-400 in the control room. A plan was put in place by Sheetal Wireless, a radio distributor, to use ProSoft Technology's 802.11g High Power Industrial Hotspot radios: one in each of the stacker reclaimers, one in the control room, and two as repeaters to achieve line of sight. At each stacker reclaimer, the PLC is connected to the radio over Ethernet and an armored Cat5 cable. In the control room, the radio is connected to the SCADA system through an Ethernet switch with an armored Cat5 cable. Digital and analog I/O signals

are exchanged between the stacker reclaimers and the control room. The Ethernet switch in the control room ensures that data can be updated across the operation's PLCs, making it easier for everyone to see status updates. The radios have basically created a Wi-Fi zone through which the PLCs' program uploads and downloads can be done with a laptop, as can online diagnostics, making it that much easier to troubleshoot the PLCs from anywhere in the plant. The data transfers are done within milliseconds.

The plant opted for ProSoft's radios in part because of their high reliability, high Ethernet bandwidth, and the capability to configure one radio as a master, repeater, and client.

"This communications network has allowed us to minimize frequent downtime," said Mr. Partha Das of the Durgapur Steel Plant. "Now we are able to diagnose remote issues wirelessly, and we have also seen an increase in machine availability."

Other benefits, Mr. Das notes, include reduced CAD drawing for cable routing/ laying; reduced installation time; increased access to HMIs by company personnel throughout the plant; and an increase in productivity throughout the facility.

"The developed technology has immense potential of horizontal transfer in any moving machines including stacker reclaimers," said Anup Prasad, Assistant General Manager at the Research and Development Centre for Iron and Steel at the Steel Authority of India in Ranchi. "The new system has significantly reduced the stacker reclaimers' electrical downtime, thus enhancing these machines' availability for processing various raw material handling plant operations."

The plant opted for ProSoft's radios in part because of their high reliability, high Ethernet bandwidth, and the capability to configure one radio as a master, repeater, and client.

The commissioned system has plant operators considering future applications: The architecture can be used for communication among distributed control systems that face similar traditional communication issues; similar setups may be used in the Steel Authority of India's other plants; and the possibilities opened up by using the system for centralized control and monitoring, such as blast furnaces and ovens in steel plants to cut down the risk of undetected gas leaks. With the advances that this new setup and technology bring, Durgapur Steel Plant is looking forward to another highly successful, well-connected sixty years of steel production. ◆

For more information about ProSoft Technology's Industrial Wireless Solutions, go to **psft.com/BTT**.

A communications upgrade for the

ULTIMATE THRILL RIDE

Antonio Zamperla S.p.A, a major theme-park attraction company whose rides can be experienced worldwide, offers something for everyone: coaster-lovers of all ages and their less thrill-seeking friends.

by Lauren Robeson

Even for the coaster-lovers, the Disk'O Coaster is surely an adventure: It essentially rocks and spins riders who sit in pedestal seats that face outward, offering a visual smorgasbord while speeding along a 300-foot (100-meter) track at up to 43 miles per hour (70 km/h). A feeling of weightlessness for the riders only adds to the target audience's thrills. It's a major attraction for many park visitors, and a prime example of Zamperla's dedication to thinking outside the box when it comes to artistry and movement in its rides.

All in all, it's a ride for which you'd want to have as many safety checks as possible.

Three years ago in Altavilla Vicentina, Italy, Zamperla started conducting testing to make the Disk'O Coaster even safer. They had been using a non-Safety I/O PLC with a more conventional Bluetooth wireless system that was based on standard OMNI antennas. Different solutions were considered, and Zamperla eventually decided to opt for a setup involving a Rockwell Automation CompactLogix™ L43S. That solution also involved the communications implementation of ProSoft Technology's Industrial Hotspot Ethernet radios for safety I/O, along with a PowerFlex™ DC and PowerFlex 700S drive on the remote side of the solution.

The addition of ProSoft's radios came from the recommendation of Michele Piccoli and Davide Gasparini of Rockwell Automation.

"Thanks to ProSoft Technology's wireless solution, it was possible to provide a complete proposal to Zamperla," Mr. Piccoli said. "It was easy to work together to evaluate, test, realize, and set up the solution."

ProSoft Technology Regional Sales Manager Andrea Mazzucchelli worked with them to find a solution that would help ensure the safety of the Disk'O Coaster's riders.

The main goal in the new communications system was to replace the previous Bluetooth communication setup, incorporating distributed Safety POINT I/O™. The Safety POINT I/O™ was used on board the ride to monitor the safety belts and the doors of the coaster. ProSoft's radios also increased reliability and throughput, working in conjunction with the CompactLogix to provide a smooth, safe ride for thrill-seekers. When safety is a top priority and equipment is moving as fast as the Disk'O Coaster often is, highly reliable connections are a must.

The Industrial Hotspot radios have helped improve the communications system, according to Fabio Berti, chief engineer for Zamperla. The radios support fast RF data rates up to 300 Mbps, delivering great packet-per-second performance and ensuring reliable communication. The company also appreciated being able to monitor the radios' performance and status using an HMI, thanks to diagnostic tags. Between the system performance and ease of use, Zamperla saw that ProSoft's radios within a Rockwell Automation infrastructure offered a solution that was too good to pass up.

"The goal was to improve the efficiency and the security of the application," Mr. Berti said. "Thanks to ProSoft's wireless Ethernet-based solution, it is possible to use Safety I/O and improve the data rate of communication, satisfying Zamperla's needs."

An added bonus was ProSoft Technology's technical support commitment. The company offers technical support for all products, and regional offices around the world ensure that you'll hear from ProSoft's experts as soon as possible.

"We're proud to have been able to provide Zamperla with a wireless solution that's perfectly fit to keep up with the Disk'O Coaster," Mr. Mazzucchelli said. ◆

For more information about ProSoft Technology's Industrial Wireless Solutions, visit **psft.com/BTV**.

For more information about A. Zamperla S.p.A, visit **www.zamperla.com**.

The Galaway Creek Golf Course in Henderson, Nebraska, offers a relaxing place to unwind and practice one's game, complete with a creek running throughout that can prove quite the challenge.

by Lauren Robeson

The golf course faced its own challenge one summer when lightning struck the property's Remote I/O™ irrigation system. All four of the system's satellite controllers were affected. The damage, assessed over two days, was vast: Two of the Remote I/O communication adapters; the SLC™ 500 PLC and its power supply, rack, and Remote I/O scanner module; a PanelView™; a motor starter and pressure control system in the pump control panel; control transformers in two of the Remote I/O boxes; and six output modules in the remote boxes.

Quick action was needed, of course: When you think of your ideal golf course, you're picturing a lush, green space, not a dried-out expanse.

The golf course didn't want to replace the whole irrigation system – both cost- and time-wise, that wasn't a great option. A completely new system would have cost about $60,000, while the time for delivery and installation would have been at least three weeks.

That's where HR Engineering's father-and-son team, Homer and Shawn Peters, stepped in to help the golf course figure out the best solution. They recommended that the golf course update the legacy Remote I/O system to an EtherNet/IP™-based Rockwell

Lightning strike sparks change in control system

Automation® CompactLogix™ controller, a PanelView Plus, and Ethernet POINT I/O™ using ProSoft Technology's Industrial Media Converter.

HR Engineering had heard about the Industrial Media Converter from CED in Lincoln, Nebraska. The converter is a component of one of ProSoft's Phased Migration strategies, which aim to help users update legacy Allen-Bradley® Remote I/O systems in phases so as to minimize scheduled downtime. The converters specifically allow users to switch to EtherNet/IP-based systems by enabling them to run Remote I/O and EtherNet/IP data simultaneously on existing Belden® 9463 Blue Hose® cable, allowing individual nodes to be upgraded in phases.

On the golf course, they used one master Industrial Media Converter, four slaves, and one repeater.

"Within one day of receiving the Industrial Media Converter from ProSoft, we were able to complete the installation of the new control system," said Shawn Peters. "It was a very easy install."

It only took five days (including a weekend) to get the new system in place, a definite improvement over a brand-new irrigation system – especially considering the sweltering summer temperatures that would have accompanied the extra work in a traditional system upgrade. That quick turnaround helped get Galaway Creek Golf Course back up and running as soon as possible and ensured that the grounds would be looking as gorgeous as ever for its devoted visitors. ◆

For more information about ProSoft Technology's Phased Migration Solutions, go to **psft.com/BTW**.

VISUALIZING
a fully integrated SCADA system

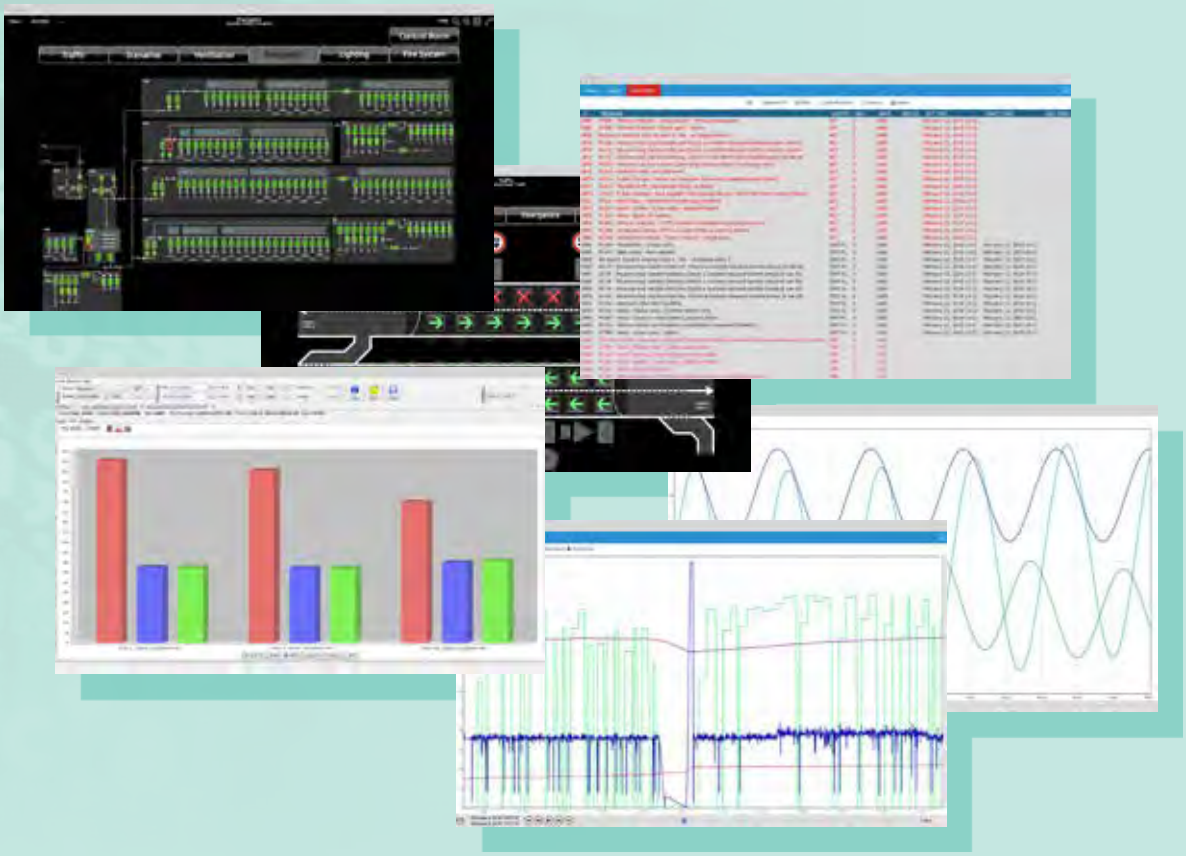
mySCADA Technologies, an OEM based in Prague, had worked for more than 15 years in the industrial automation field, focused on the development and production of SCADA systems and HMIs.

by Lauren Robeson

mySCADA's visualization products and solutions, built on open architecture, allowed for modern and effective monitoring of automation processes. They ranged from smaller projects (such as intelligent personal and commercial buildings, or water treatment plants) to large-scale applications, such as tunnel or power-plant control. They have a reputation as being a friendly company with user-intuitive products.

Then they had an idea: why not try to integrate a full-featured HMI/SCADA system into a PLC/PAC? The advantages that this would bring to their typical customer were huge, including ease of installation; a reduced number of required components, helping to reduce costs; increased security; and superior performance. Previously, the end user would have had to install a SCADA system on a remote server and connect it to the PAC over an Ethernet interface. This system required regular maintenance, increasing the overall cost of the solution. The new solution, mySCADA Technologies proposed, would be a modern, Web-based, professional setup featuring complete options for professional visualization, processing, and analysis of real-time industrial processes.

mySCADA Technologies decided to opt for a solution utilizing a Rockwell Automation® CompactLogix™ controller and ProSoft Technology's Linux Development Module, which fits right into the CompactLogix. The Linux Development Module allows the user to create a fully customizable program in C or C++, and is also available for use in a ControlLogix® system. This solution allowed for an especially robust HMI/SCADA system, company representatives said.



mySCADA Technologies used a ProSoft Technology Linux Development Module and a Rockwell Automation® CompactLogix™ controller to create a full-featured, integrated SCADA system. This setup brings reports and other data, shown here, into the PAC.

"We have worked with ProSoft Technology's products for over 10 years," said Petr Svoboda, Ph.D. and Director of mySCADA Technologies. "ProSoft was always reliable and met our expectations, so they were our first choice for this new software."

This particular pairing of hardware and software created "the perfect match for the end users," said Matej Cerny, Technical Director at mySCADA Technologies.

"Running full-featured SCADA as part of the controller brings a lot of advanced features for the end user," Mr. Cerny added.

He wasn't exaggerating the scope of this new setup. This solution included the following features:

- The setup supports all leading Web browsers, and allows visualizations to be displayed and accessed on any Windows, Linux, iOS, or Android devices. On tablets, the system is designed to be zoomed in on easily. Essentially, it can be accessed anytime from nearly anywhere.
- A complex alarm system allows thousands of alarms to be processed every second. The user is able to define alarm activation values; value and time threshold; alarm severity; and notification announcements.
- Graphical functions such as displays, animations, and effects are easily accessible without coding.
- The system can be controlled easily by the end user. There are nine user levels with different privileges, making it easier for the end user to customize access. In addition, multiple users can use the software simultaneously.
- Data and trends are saved directly to the CompactLogix, while a free tool for reporting can be used across multiple platforms and is user-intuitive. Reports can be sent on a user-set schedule depending on the end user's needs.
- The installation of the software is done through install script, saving the end user time.

"ProSoft was always reliable and met our expectations, so they were our first choice for this new software."

In addition, development time was greatly reduced, with simpler and faster installation. A quick mean time to repair (MTTR) is available in the case of equipment failure since data can quickly be retrieved and transferred to a new module. Maintenance by IT personnel is virtually never needed since this system (unlike a typical PC-based solution) does not require patches, updates, or virus fixes. An HMI/SCADA system without a PC component saves end users money, and is also very reliable.

"Because the ProSoft interface has a much higher mean time between failure (MTBF) rate than a regular PC server, the reliability is much higher," said Krzysztof Hajzyk, Regional Sales Manager for ProSoft Technology.

Thanks to the Linux Development Module, the sky was the limit for mySCADA Technologies creatively and technologically. The solution the company created helps end users step back from frequent maintenance and focus on what's really important – visualizing a path of success in their own operations. ◆

For more information about ProSoft Technology's Linux Development Modules, visit **psft.com/BTX**.

To see more information about how the module was used by mySCADA Technologies, go to **myscadatechnologies.com/prosoft**

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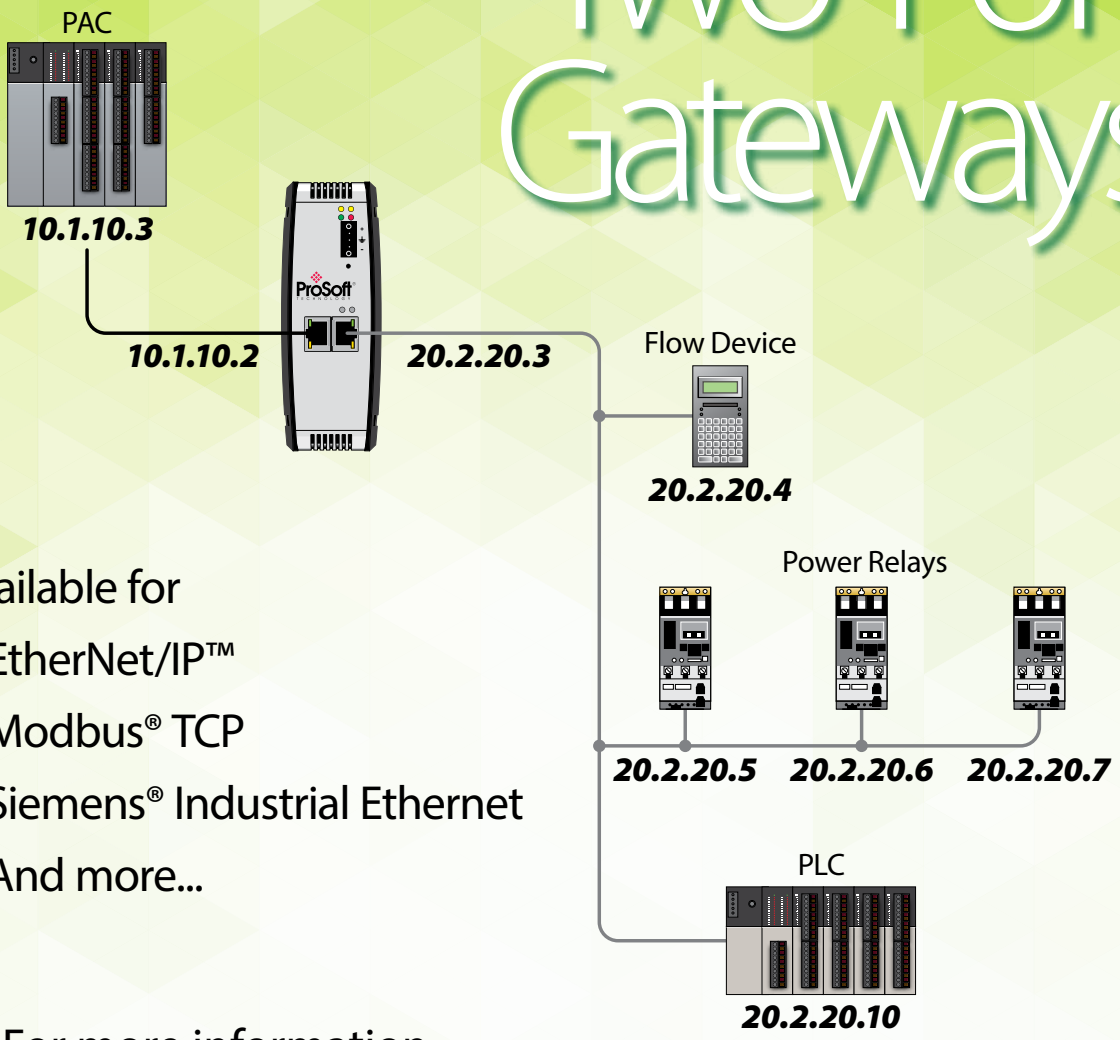

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IT VS OT

OT and IT aren't always the best of friends.

Maybe that's a little taboo to say, but it's true in many plants. No daily rumbles or anything, but the two departments have different needs, concerns, and procedures. Which can in some cases make it difficult to pick Ethernet network products that will meet both departments' needs.

Industrial Hotspots: *something for everyone*

by Lauren Robeson

I've got some good news for you (or for your communications system, anyway): ProSoft Technology's 802.11n Industrial Hotspot radios have been updated, with features that will make both sides – OT and IT – happy.

Your OT personnel will love that the Industrial Hotspots now feature EtherNet/IP™ embedded object and Modbus® agent support.

"The Industrial Hotspots' new EtherNet/IP embedded object and Modbus agent support lets users get radio diagnostics into their PLC, where the data can be analyzed and acted upon, helping the company reduce downtime," says Keith Blodorn, director of ProSoft's wireless program. "This capability is a perfect example of how the Industrial Internet of Things is helping engineers use gathered data to find ways to streamline their operation."

Meanwhile, your IT department will appreciate the radios' SNMP support.

Ultra-Fast radios

The radios also now feature Ultra-Fast access point switchover times of less than 10 ms, which is ideal for automated storage-retrieval systems, automated guided vehicles, automotive skillet lines, and more.

In systems using high-speed I/O protocols, Blodorn notes, a roaming delay longer than ProSoft's could cause the machine to not operate. For the most demanding applications, the Industrial Hotspots' Ultra-Fast roaming is the ideal safeguard.

The radios can also be used in conjunction with a radiating cable solution. A radiating cable is good for applications involving rotating machinery where slip rings were initially used as well as storage-retrieval systems, automated guided vehicles, or automotive skillet lines. The radiating cable decreases the maintenance and downtime associated with slip rings, while still providing a clear path to the rotating antenna without interfering with other wireless signals in a crowded plant.

Other features

The Industrial Hotspots also support AeroScout® tag tracking, allowing you to locate any asset or person (such as miners) and monitor wide-ranging operations. Working with an application involving distributed I/O or video surveillance? The radios' QoS support allows users to set different data transmission rates to optimize their Ethernet bandwidth.

Dealing with sensitive information? The radios are secure, providing 128-bit AES encryption for secure communications. The radio's configuration can be stored on a microSD card to support disaster recovery plans and get users back up and running faster, reducing downtime. ◆

For more information about ProSoft's Industrial Hotspot radios, go to psft.com/BQN.


Rockwell Automation
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ProSoft®
TECHNOLOGY
Rockwell
Automation

Automation Fair® 2016 Preview

Extending the CONNECTED Enterprise

By Lauren Robeson

You've been hearing about the Connected Enterprise from Rockwell Automation® for a while, and you may have been wondering how you can get data from non-Rockwell devices and systems, and get your data where you need it more easily.

Rockwell Automation's Connected Enterprise leverages the Industrial Internet of Things. The value from the IIoT and the Connected Enterprise is all about getting the information you need where and when you need it. As this data is converted to information, you can now optimize your resources, eliminate inefficiencies, and reduce unscheduled downtime.

The good news is that since ProSoft Technology's beginnings in 1988 – with a Modbus® module to connect a PLC-5® controller to a SCADA system – we have been helping you get value from the Industrial Internet of Things, long before the IIoT became the hottest acronym in the industrial automation sector. ProSoft's tagline has always been "Where Automation Connects," and over the years we have delivered solutions that connect those non-Rockwell Automation devices and systems to the Rockwell Automation infrastructure. We were always helping you get your data where you needed it without having you run all those cables. Our wireless solutions address applications that require simple I/O to I/O, high-speed EtherNet/IP™ I/O, high-bandwidth video monitoring, and even long-distance data transmission. In the past couple of years, we've addressed the need to modernize your operations without requiring you to rip and replace your entire legacy control system, all while enabling it to become part of your Connected Enterprise.

When unscheduled downtime is affecting your operations, getting the right person in front of the right information as fast as possible is critical. If the right person has a connection to the internet, we can help you get them securely connected with a minimum of effort. As part of our efforts to help you realize value from the Industrial Internet of Things, we created ProSoft Connect (see page 6) as part of our Secure Remote Access solution. We are continuing to look for ways to extend your Connected Enterprise and help you get ever-increasing value from the IIoT. At this year's Automation Fair® in Atlanta, Georgia, you'll be hearing a lot more about how we can help you: Our theme for this year's ProSoft Technology booth is Extending the Connected Enterprise.

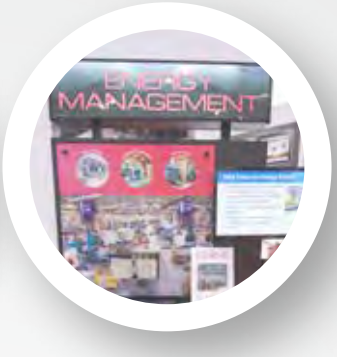
What to expect

By Extending the Connected Enterprise, we help you get access to all the data from all the devices in all your operations, enabling you to realize values such as:

- Reducing maintenance costs
- Minimizing unscheduled downtime
- Eliminating energy inefficiencies
- Increasing output

In general, by helping you extend the value of the Connected Enterprise, ProSoft's solutions help you optimize your resources. You'll find out how through the live demonstrations in our booth, which this year will include:

- Our cloud-native platform for the IIoT, ProSoft Connect. This service allows you to remotely access your ▷



automation equipment from anywhere in the world, with more ProSoft solutions to be offered in the future. ProSoft Connect is designed to help you realize value from the IIoT for your operation, now and for years to come.

- A display on how we can help you modernize your legacy systems. We offer a number of solutions to help you update your Rockwell Automation controllers using a Phased Migration approach, allowing you to upgrade based on your schedule.
- A look at how our in-chassis flow computer solution can help you optimize your multi-well pad operation. This solution replaces the traditional setup of multiple RTUs and flow computers, helping you decrease your maintenance costs and capital spend.
- A demonstration of how you can extend the Connected Enterprise to your energy distribution applications.

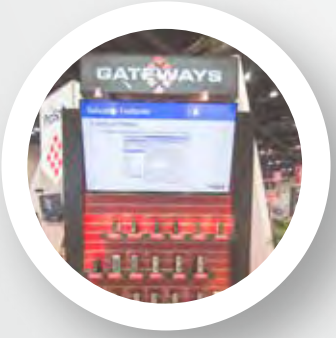
We'll also be featuring in-booth presentations about ProSoft Connect, our modernization solutions, our flow computer solutions, and our two-port EtherNet/IP gateways. For visitors who are more generally interested in how our products as a whole help you extend the Connected Enterprise, we'll have presentations about that as well.

Interested in something you don't see listed here? Make sure to stop by our booth anyway – we'll have plenty of experts on hand to hear about your application and discuss a potential solution with you.

And, as always…be sure to check out our pre-Automation Fair video, which is never boring. Whether we're showing you what goes on behind the scenes before the show (spoiler alert: a lot) or sharing news about our show-worthy products in wacky ways, we love hearing what you think about each year's video. This year's video will be no exception, so be sure to check it out before the show!

We look forward to seeing you in Atlanta and celebrating the 25th Automation Fair! See you there! ◆

For more information about what ProSoft Technology has planned for this year's Automation Fair, go to **psft.com/BQT**.



From point to point to point to...

By Lauren Robeson

At last year's Automation Fair®, we saw how many visitors were interested in our Point-to-Point Wireless I/O system, which was set up and functioning in one area of our booth.

And why wouldn't they be? With that Wireless I/O system, we help customers wirelessly transmit I/O data from point to point – no trenching, wire pulling, conduit, or permits required. So basically, we're helping you turn what would be months of work in a wired application to one that can be deployed in a matter of hours – if not much more quickly depending on the scope of your operation.

This year, we've been pleased to introduce to you the new Multi-Point Wireless I/O system. Not only does it allow you to avoid the same long process and backbreaking work, it also expands what you can do, and the types of data that can be transferred.

This new system – as the name implies – allows you to connect many points to each other, which is perfect for extended operations where information from a variety of devices is needed in several areas. Like the point-to-point version, the multi-point system can be expanded as the needs of your operation expand, and can be customized with digital and two types of analog modules. The digital module can even act as a counter.

And now, one of the most exciting parts: The multi-point system doesn't just transfer I/O data. Instead, it features three communication modes: I/O to I/O, I/O to Modbus® serial, and Modbus serial to Modbus serial. The system's support for Modbus serial also allows link statuses to be mapped to any I/O modules in the system, or communicated via Modbus to the host controller.

"The system's customizable nature – whether with the type of communication you transmit or how many nodes you use – makes it especially helpful no matter what industry you're in," said Keith Blodorn, director of the wireless program at ProSoft Technology. "Being able to expand your communications network quickly with the Wireless I/O system gives you that much more freedom in your operation."

Both systems can be used inside or outdoors with customizable antenna setups based on your operation's needs. ◆

This year, we've been pleased to introduce to you the new Multi-Point Wireless I/O system. Not only does it allow you to avoid the same long process and backbreaking work, it also expands what you can do, and the types of data that can be transferred.

Find out more about ProSoft Technology's Wireless I/O systems at **psft.com/BQG**.

ProSoft **Profiles**

Anne Vondrak

Regional Sales Manager, North Central United States

Hobbies & Interests Her kids' sports — hockey, soccer, and lacrosse; endurance training for marathons and triathlons; and cooking, and gardening when time permits!

When Anne Vondrak joined the ProSoft Technology team as a North America Regional Sales Manager in 2015, she already had a lot of knowledge of the company from her time with Rockwell Automation® – but there were surprises still in store, from locations to wardrobe.

"Having worked at Rockwell Automation for almost 25 years, I thought I'd seen it all, but our products go into some very rough parts of the plant," Anne said. "Especially with wireless, so even my most rugged footwear won't make it, primarily in the chemical plants or the steel mills. Steel-toed boots are now a part of my travel gear!"

During her tenure at Rockwell Automation, Anne held a variety of roles. She started out as an account manager in the Milwaukee Sales office.

"After ten years of outside sales, I took on more responsibilities at headquarters, including managing the electronic operator interface business, being a marketing manager on the Integrated Architecture Marketing team, and managing the Rockwell Automation PartnerNetwork Program," Anne said.

That experience has served her well, she noted.

"I enjoy the fact that I'm able to leverage my past experiences to be successful at ProSoft," Anne said.

It was definitely a jump to a new experience. Though Rockwell Automation and ProSoft Technology are of course both well-known in the industrial automation sector, ProSoft is definitely smaller, something Anne says she enjoys.

"Coming from a larger corporation, the 'nimbleness' of a smaller company is exhilarating," she said.

She praised ProSoft's worldwide community as well, noting: "Everyone is very supportive of each other both within the sales organization and between the areas of marketing and product management. We're definitely all on one team even though we're not in the same location!"

In her time so far at ProSoft, Anne has seen a lot of excitement from customers about how ProSoft's wireless solutions can be used in the manufacturing industry.

"Both the Industrial Hotspots and the cellular radios are dominating conversations with customers," Anne said. "I think the timing is perfect since the technology has evolved and the customers are now ready to go there. I think combining wireless capabilities with cloud-based access is key to our customers' success in the coming years. Customers still value and need in-chassis and gateway communication solutions, of course, but they ask the most questions and are intrigued regarding wireless." ◆

ProSoft **Profiles**

Pauline Yap

Operations and Marketing Manager, Asia Pacific

Hobbies & Interests Cooking, reading, driving, and traveling.

Pauline Yap joined ProSoft Technology's Asia Pacific office – based in Kuala Lumpur, Malaysia – last year and has quickly made herself indispensable in that region and others.

From coming up with new ways to organize ProSoft swag at last year's Automation Fair® to working to promote ProSoft's solutions through a variety of mediums, Pauline makes it her mission to make sure everyone knows how ProSoft can help them – something that she finds very rewarding.

"I was on a trip to Manila for a system integrators event with a local distributor to invite SIs and end users to talk about ProSoft's road map and products," Pauline recalls. "In the event, we realized some of them hadn't heard of us, but they found out our wireless solutions may improve their productivity. I'm glad we conducted that event and were able to meet so many contacts."

Before joining ProSoft's Asia Pacific team, Pauline worked for eight years as the operations manager at ASUS, a Taiwan-based computer hardware and electronics company. For her first three years at the company, she also worked in its marketing department; for her final five years there her focus shifted completely to operations.

Now, of course, Pauline's job at ProSoft incorporates a bunch of tasks in both marketing and operations. She said she likes the team atmosphere at work.

"One of the best parts of working at ProSoft is all our colleagues supporting each other," she said. "It is also fun to work with a bunch of creative people."

Outside of her dual role at ProSoft Technology, Pauline likes cooking Thai and Chinese food. She also enjoys reading a variety of books, depending on everything from her mood or the paper used to what's available at the local shop. ◆

Were You **There?**

Business Development Manager Kelvin Chong and Asia Pacific Marketing and Logistics Executive Ramona Chang talk with a customer at a Rockwell Automation On the Move event in Taiwan in March.

Regional Sales Manager Hugo Amador talks with customers at a May show that ProSoft Technology co-sponsored in Monterrey, Mexico.

Regional Sales Manager Michael Repplinger talks with a booth visitor at the Austria show.

Regional Sales Manager Michael Repplinger and EMEA Director of Sales & Marketing Aurélien Fabre attended the Rockwell Automation University show in Austria in June.

Spot the **Difference**

There are ten differences in the two photos below. Can you spot them?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

1. *Black cable missing, left wall*
2. *Box label reversed, left desktop*
3. *Silver wire on chair-back missing*
4. *On/Off button on lamp missing*
5. *Three vents instead of 2 on gray Ethernet box's side panel, right top shelf*
6. *Top handle on unit missing (second from left, center shelf)*
7. *Cable hook shortened on left wall*
8. *Blue Ethernet cable missing on top shelf (on the right)*
9. *Left chair arm rest missing*
10. *Unit screen replaced with more buttons (second from left, bottom shelf)*

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