

# Network Management Newsletter

## Issue 2/2011



Dear readers,

The second quarter of 2011 has seen another step in the expansion of our software portfolio: our agreement to acquire Mincom, the Australia-based software company. Mincom specializes in applications for mining and other asset-intensive industries, including the energy sector. The acquisition, which is due to close in the coming weeks, will enable us to provide more comprehensive solutions for a wider range of industries. You will find more details about Mincom and this exciting new development on page 2 of this newsletter.

We have also seen new applications of our existing technologies. Powercor Australia used our Ventyx mobile workforce management solution, Service Suite, to keep up with repair work on flooded power installations in Australia (page 4) and the Shenzhen Power Grid is installing our RTUs to improve performance in its distribution network, which serves almost 9 million people in the Chinese city of Shenzhen (page 3).

This newsletter brings you more information on how our relationship with Trilliant is developing (page 6), following last year's investment in the wireless-communications specialist, and news of a combined application of Network Manager

distribution management software with Ventyx solutions for mobile workforce management and business intelligence. This project for CenterPoint Energy in the United States is one of the first combined applications of existing ABB and new Ventyx technologies since last year's acquisition of Ventyx.

We also have news of a substation automation system we are installing near Basel, Switzerland, which uses IEC61850-compliant protection and control systems and products from the Relion® family of IEDs (intelligent electronic devices).

The development of ABB's network management portfolio continues with our efforts to provide the most effective combination of products, systems and services for our customers. For more information on our offering and on any of the stories published here, please feel free to contact me.

Best regards,

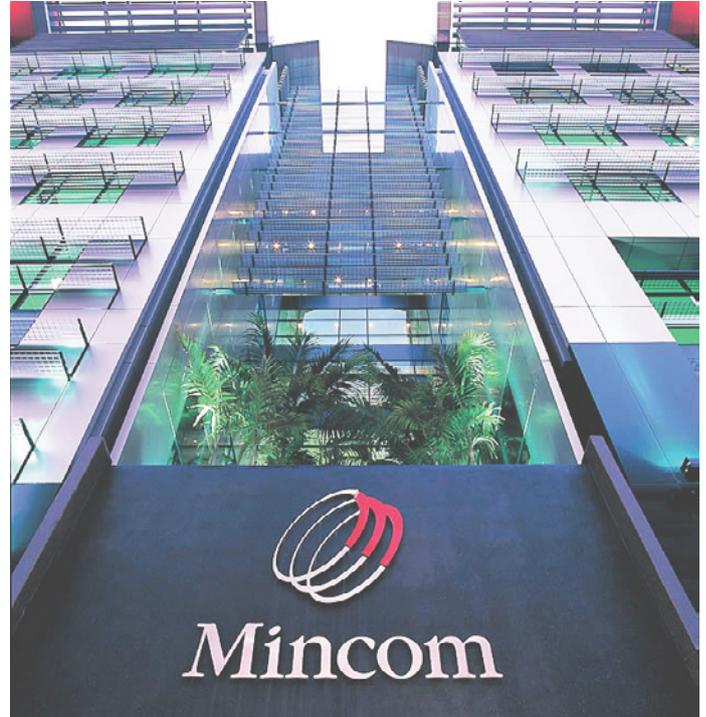
Jens Birgeron,  
Network Management Business Unit Manager

# ABB acquires Mincom to expand enterprise software business

The acquisition strengthens ABB's offering for natural resources, smarter grids and other asset intensive industries.

On May 9, 2011, ABB announced its agreement to acquire Mincom to broaden its software portfolio and establish the Group as a leader in enterprise asset management (EAM) software and services. The agreement was made to acquire the Brisbane, Australia-based company from Francisco Partners, a private equity group that invests in technology businesses.

Mincom brings expertise and experience in a range of industries, and a comprehensive set of solutions for applications such as EAM, mining operations and mobile workforce management. Mincom has nearly 1,000 employees and annual revenues of approximately \$200 million. With a distribution network in 19 countries, the company is a leading software player in the Asia-Pacific and Latin America regions, with customers including 17 of the top 20 global mining groups, as well as businesses in the energy sector, defense and other asset-intensive industries.



Mincom head office in Brisbane, Australia



Greg Clark, CEO of Mincom

"The acquisition of Mincom is part of our strategy to continuously broaden our software offering," said Joe Hogan, CEO of ABB. "Mincom helps us to increase the depth of our enterprise asset management offering, building our position as a leader in the key growth sectors of natural resources and energy. For our customers this means extending the life of their infrastructure, optimizing asset management and reducing the overall cost of ownership."

To ensure continuity for customers, ABB will retain the Mincom management team, and its operations will be added to Ventyx, ABB's dedicated software business.

The Ventyx portfolio combines information and operational technologies (IT and OT) to optimize asset performance, integrate business processes and deliver insight into global business operations. Mincom's strong presence in the natural resources sector is complementary to ABB's expertise in mining control systems and its leading position in energy management technology.

"Joining forces with ABB is a logical next step in the development of our company and a strong validation of the business, our people and our products," said Greg Clark, CEO of Mincom. "It will expand our global reach and service capabilities, enabling us to continue building on the business we have fostered over the past three decades."

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# ABB products make distribution network smarter for the Shenzhen Power Grid

**Shenzhen Power Supply Bureau, which owns and operates one of the most important parts of the China Southern Power Grid is expanding its operations and is introducing more automation into its distribution networks.**

The improvements will enhance reliability and raise the performance of the company's operations, across its service territory. The company serves the city of Shenzhen and its population of 8.7 million people. This special economic zone is the fourth largest contributor to the Chinese economy in terms of GDP.

## **RTU560 to reduce system restoration time**

ABB's RTU560 units will help to speed restoration after system disturbances and improve power quality through accurate monitoring and control of conditions in the network. To date, ABB has installed more than 80 RTU560 units in the Shenzhen grid, to the full satisfaction of the customer.

RTU560 units, which are designed to withstand harsh environmental conditions, will connect a number of substations to Shenzhen power grid's distribution management system (DMS). IEC 60870-5-101 and -104 communication protocols will be used for communication between the RTUs and the distribution management system.



Shenzhen is a major manufacturing center in China.

ABB's scope of supply for the project included:

- Ring Main Unit (RMU) installation for in- and outgoing feeder monitoring and control
- Detection of short circuit and/or earth faults
- Save and report exceptional load data on feeders
- RTU560 DIN rail solution
- Fault identification and provision of overcurrent and neutral current information to the control center
- Programmable logical controller (PLC) and data archive function

## **Smart grids – part of China's long-term strategy**

In recent years, China has taken decisive actions to extend and improve its infrastructure for power transmission and distribution. In the new 12th five-year plan, the government has laid out plans for the large-scale construction of smart grids to meet the increasing demand for electricity and develop more renewable energy sources for China. Remote monitoring and control are key elements in such grids, particularly at the distribution level.

## **RTU560 – remote control based on new communication technologies**

The flexible and modular RTU560, with an integrated Web technology-based HMI, provides a complete solution for the remote monitoring and control of substations. The highly flexible concept for DIN rail and rack mounting, as well as redundancy, consisting of communication interfaces, central processing units and a power supply, allows RTU560 to be adapted according to customers' needs. To ensure interoperability with existing infrastructure and third-party equipment, the RTU560 features full IEC 61850 capabilities including GOOSE (Generic Object Oriented Substation Event) messaging. GOOSE messaging is a mechanism for the real-time transmission of time-critical data within a substation. The data may be alarms, measurements, commands, etc. and are transmitted at high speed between substation IEDs via a fast Ethernet system. The mechanism enables real-time applications like stationwide interlocking, load shedding and protection-related applications.

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# Helping Powercor Rise to the Challenge of Australian floods

**This year's record flooding saw major power outages in Australia and a 60-percent rise in work orders for electricity distributor, Powercor. Thanks to mobile workforce management software from Ventyx, an ABB company, the company handled every call, with no loss of efficiency.**



**Melbourne, Australia's second-largest city and a major business center was hit by devastating floods.**

CitiPower and Powercor Australia manage the poles, wires and equipment that deliver electricity to homes and businesses in and around Melbourne in the state of Victoria. Just a few months after installing the Service Suite mobile workforce management (MWFM) solution from Ventyx, an ABB company, Powercor's fault management crews were faced with a major outage due to record flooding. Supported by the highly scalable Service Suite mobile scheduling and dispatch software, Powercor rose to the challenge—managing 60 percent more work orders while maintaining the same levels of efficiency and job completion rates.

In 2009, CitiPower and Powercor implemented the Ventyx Service Suite MWFM software solution to help schedule and dispatch crews tasked with installing 1.1 million remotely read “smart meters.”

The efficiencies achieved led Powercor in October 2010 to expand the scope of Service Suite to encompass the Faults operations of Powercor. This included the integration of the utility's outage management system (OMS) and mobile software for approximately 300 work crews tasked with restoring faults in the electricity distribution network.

In January 2011, only a few months after these crews went live on the new system, disaster struck. A giant lake of floodwater 90 km long washed over the state of Victoria, causing widespread outages. At one point as many as 43,000 Powercor customers were off supply, along with the removal from

service of a zone substation supplying 8,000 of those customers. The scale of the outage caused a major spike in work orders—up 60 percent on the previous week. It was a challenge that no one at the utility had ever experienced, the type of natural disaster that may happen only once in 200 years.

With the surge in work volume and only a few months' experience with the new Ventyx solution, Powercor was concerned that the crews would struggle. “This flooding emergency was considered a true escalation event, for which crews are allowed to revert to paper, if required. But, most crews didn't. They continued to use Service Suite on their mobile devices,” said Alan King, Manager of Field Mobile Applications for CitiPower and Powercor's CHED Services. “This was seen by Powercor as a very good sign of their faith in the system as the best solution for handling this crisis.”

Despite the significant increase in workload, “The crews were able to handle the volume of work thrown at them,” said King. “This was the first time they really ‘stress tested’ Service Suite, and it held up as expected and did the job they needed it to do.”

The improved ability to capture accurate data and receive real-time updates from the field also aided the business during the flood, said King. “I doubt we would have been able to handle that work volume so easily using paper,” said King. “It's fair to say that Service Suite played a major role in helping us respond to this emergency. Our crews have never seen anything like it, and Service Suite saved us significant costs in terms of overtime, resources, and dispatch demand. It aided the business immensely.”

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**Residential areas also suffered the effects of the record rainfall.**

# New release of Service Suite Mobile Workforce Management Solution

## Increasing flexibility while lowering total cost of ownership

In June, Ventyx announced the newest release of its Service Suite mobile workforce management (MWFM) solution, with numerous enhancements designed to improve ease of use, simplify integration and provide additional flexibility in users' choice of mobile and server platforms—all delivering lower total cost of ownership (TCO).

Service Suite is an extremely powerful, full-featured MWFM solution available, providing a comprehensive infrastructure for efficient planning, scheduling, execution and automation of the entire service workflow. Major enhancements in the new release including the following:

- Android support: Android support provides access to lower-cost devices, enabling clients to mobilize more field workers. It also enables more flexibility, allowing workers to choose the device type that best suits their daily work requirements and personal preferences.
  - Ease of use. To fully leverage the Android support, the Service Suite Mobile application has been redesigned to provide a modern touch-screen experience.
  - Improved optimization: Enhancements to the Service Suite optimization engine enable clients to reduce travel times by up to 20 percent.
  - Reduced TCO: Support for Linux servers enables a reduction in total cost of ownership.
- Simpler integration: Service Suite's unparalleled configuration capability combined with service-oriented architecture greatly simplifies integration into existing systems.
  - Enhanced contractor management: New release includes access controls, specialized scheduling and business process support.

“Service Suite 9.1 is the first Android-based mobile application built specifically for the needs of utility and communication technicians, so there is a lot of excitement about this release in our user community, as well as here at Ventyx,” said Rick Nott, GM of the Service Suite product line. “Not only is there a lot of new functionality in the release; it is the right functionality for our clients. More power in our optimization engine enables better performance and efficiency in the field. Greater flexibility lets clients implement the solution around their work practices, not the other way around. And, enhanced contractor support lets them expand their mobile workforce without expanding their capital investments. Together, these new features add up to a lower total cost of ownership for our clients.”

Service Suite Release 9.1 is available immediately. For more information, go to [www.ventyx.com](http://www.ventyx.com) or contact your Ventyx sales representative or email [sales@ventyx.com](mailto:sales@ventyx.com).

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# Trilliant and ABB – Investing in the grid of the future

Last summer, ABB invested in Trilliant, a company specializing in wireless communications for the Smart Grid.

## Trilliant

Trilliant is headquartered in Redwood City, Silicon Valley. That makes it a neighbor of corporate giants such as Oracle, Cisco and Apple. Trilliant traces its origins to former company called Nertec in Canada, where it carved out a niche for itself developing meter reading systems about 25 years ago. At the time, the systems still utilized dial-up modems. Today the company has over 200 employees and initially conducted business in Canada, then the USA and is now expanding quickly into Europe, Middle East, Asia Pacific and South America. Although advanced metering infrastructure (AMI) projects still dominate business, Trilliant is really a smart grid solutions company whose platform enables all applications throughout the smart grid – from distribution automation and voltage monitoring/control on the grid side, to home area applications such as smart solar panels and smart electric vehicles on the consumer side. Trilliant has made a name for itself in recent years with major projects involving Hydro One Networks in Canada, Iberdrola USA in Maine leveraging its multi-tier IP, RF Mesh solutions; and Centrica's British Gas in the UK, leveraging its cellular IP smart grid solutions. The Trilliant product portfolio features not only communications infrastructure but also smart meters with integrated communications modules.

This type of communications technology is used to an increasing extent in distribution automation projects, i.e., the automation of power distribution systems. And this is where ABB and Trilliant connect; in the field of utility communications and ABB's center of expertise in Baden, Switzerland.

## Trilliant SecureMesh™

Trilliant's multi-tier, IP RF mesh network technology is called SecureMesh and provides communications solutions on three different levels. First is the Home Area Network (HAN), where smart devices are interconnected within a single household. Second is the Neighborhood Area Network (NAN), which interconnects smart meters or energy boxes from several houses/buildings or entire sections of cities with each other through collector systems. Third is the Wide Area Network (WAN), which serves as the backbone of the system and takes collected data to the control center. The networks are all operated over the freely accessible frequency bands, 2.4 GHz or 5.6 GHz. Of course there is the risk of interference from other devices or networks, and this is where the mesh technology comes into play. The Trilliant technology sets up a grid with several nodes, all of which are capable of communicating with each other. If a connection is disrupted by interference or some other obstacle, the system automatically and autonomously looks for an alternative route (self-healing network).



Trilliant project team

In other words, the network constantly adjusts to prevailing conditions, circumventing obstacles without losing broadband functionality.

Another advantage and point of differentiation is the capacity SecureMesh makes available. Besides highly reliable 250 kbit/s in the NAN segment, the WAN provides bandwidth of up to 54 Mbit/s, a capacity increasingly demanded by power utilities. Typical applications are video monitoring or new measurement algorithms, which require high levels of data throughput.

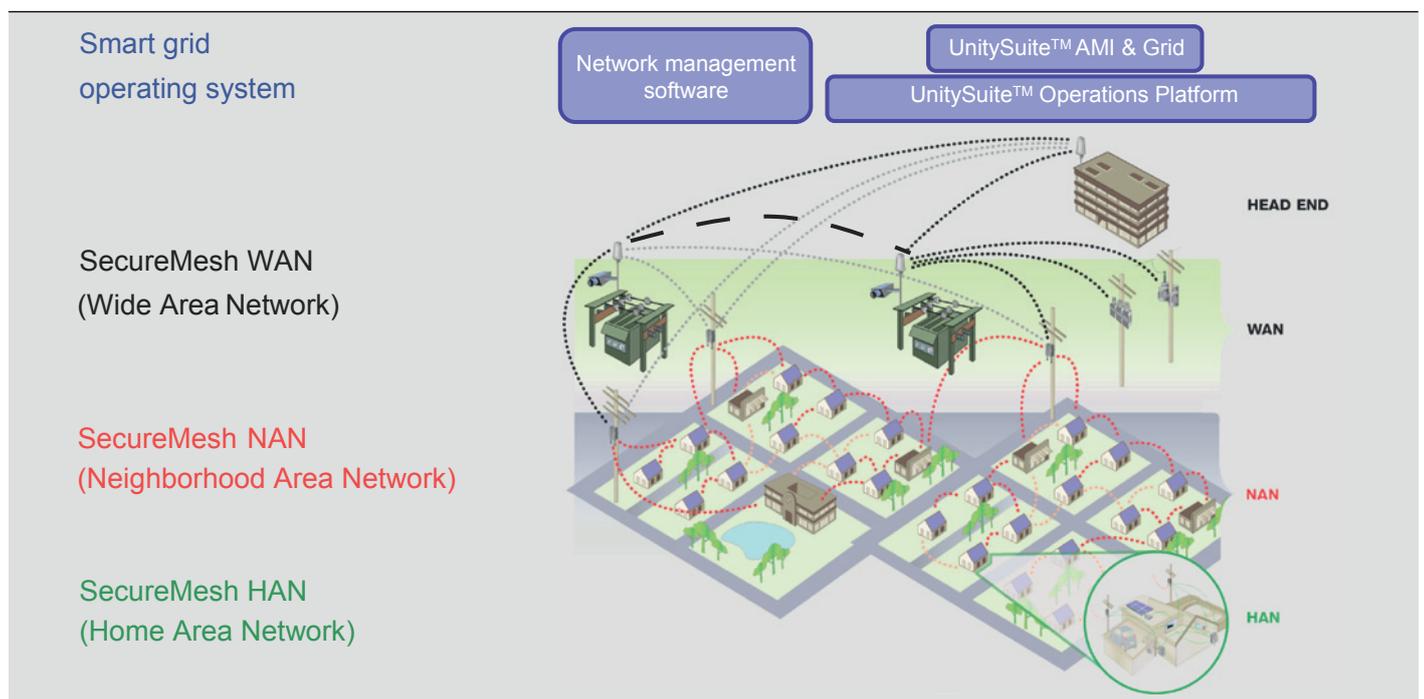


Trilliant head office in Silicon Valley

SecureMesh ideally complements ABB's existing communications portfolio in wireless technologies. Alongside GPRS modems, VHF-UHF radios, largely for SCADA applications, and microwave for long-distance backhauling, ABB is now in a position to handle new smart grid projects involving a variety of applications.

The Trilliant technology will also help enable ABB's utility communications experts to use other applications in the smart grid segment in collaboration with other ABB experts in medium-voltage technologies and the ABB Center of Excellence for Distribution Automation currently being built up in Raleigh in the United States. Such collaboration will be particularly advantageous in the development of FDIR (Fault Detection Isolation Restoration) systems for the automation of medium-voltage grids, the connection of medium- and low-voltage switchgear to distribution control centers, and the networking and monitoring of lower voltage sensors and smart devices that are increasingly used along the power supply chain.

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SecureMesh Multi-Tier Networking

# ABB wins substation automation order in Switzerland

ABB will deliver a complete substation control system for the Frolooo project; the refurbishment of a 50-year-old air-insulated switchgear (AIS) substation near Basel, Switzerland. The improvements at the high-voltage substation will help to meet increased demand for electricity in the Basel region, which is a global center for pharmaceuticals and other industries. The new substation will be equipped with ABB's modern protection and control systems, fully compliant with the IEC61850 international standard for substation automation. This ensures that the new system will be compatible with existing infrastructure and third-party devices to provide the most cost-effective solution for the extension project.

ABB will supply the following systems for the new substation, all of which are compliant with the IEC61850 standard for substation automation:

- Substation control system for 220 kV SAS630
- 145/50 kV substation control system for SAS635
- Protection and control system for eight 220 kV bays
- Protection and control system for eleven 145 kV bays
- Protection and control system for nine 50 kV bays
- Products from the Relion® family of intelligent electronic devices for protection and control

In addition to these installations, ABB will provide full planning, production and processing services, as well as testing and commissioning of the completed project.

In the face of rising demand for electricity, power utilities are under increasing pressure to maintain the high-quality, reliable power supplies on which commercial, industrial and residential consumers depend. ABB's products and systems provide cost-effective solutions to meet both reliability and performance requirements.



The 50-year old substation at Frolooo will be fully refurbished and in operation in 2012.



Building works at Frolooo are already under way.

The SAS 600 series of modular automation systems is designed for maximum safety, efficiency and reliability in local- and remote-controlled substations. Drawing on extensive experience in the field, the systems are fully scalable in terms of size and functionality, which simplifies future system modifications considerably. The systems and all components are also tested in ABB's in-house System Verification Center to ensure quality and minimize installation time on site.

As well as improving performance for the utility and electricity consumers, the refurbishment of the Frolooo substation will also please local residents. The installation of modern gas-GIS equipment, in place of the existing AIS, will eliminate noise generated by the pneumatic switching systems and reduce the surface area of the substation by 85 percent. This will free up around 7,000 square meters of land, roughly the size of a football pitch. All installations at the new substation, including switchgear, transformers and protection and control systems, will be housed in a new building to minimize the visual impact of the station.

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# ABB to provide software for CenterPoint Energy's intelligent grid system



**Comprehensive solution leverages offering from recent acquisitions, Ventyx and Obvient, to add mobile workforce management and business intelligence to distribution automation.**

ABB has won orders from CenterPoint Energy Service Company LLC for the latest Service Suite mobile workforce management (MWFM) software from Ventyx and for the FocalPoint business intelligence solution from ABB's latest acquisition, Obvient.

These will be integrated into CenterPoint's advanced distribution automation solution, based on ABB's Network Manager™ Distribution Management system (DMS). These solutions will work together to improve power reliability and restoration capabilities in Houston, Texas. "This is the first major product-

based integration between Service Suite, FocalPoint and the ABB Network Manager software suite," said Jens Birgersson, head of ABB's Network Management business unit. "These orders demonstrate the benefit of ABB's expanded portfolio with the recent acquisition of software specialists Ventyx and Obvient, enabling customers to purchase complete solutions comprising both operational and information technologies from a single source."

Service Suite MWFM supports multiple classes of field service work within a single application. This includes work and asset management, meter and customer services, outage response and network maintenance. Service Suite is based on an advanced service-oriented platform technology, which facilitates its integration into the ABB Network Manager DMS solution. The addition of FocalPoint business intelligence software to CenterPoint's system will enable complex data from disparate systems to be assimilated and presented to a wide range of users via a series of "dashboards." These help to simplify decision making processes for users in key functions, from operations and customer service, to resource and supply chain management.

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