BACKUP POWER

Benefits:

- Fewer service trips as maintenance can be done remotely
- Faster problem resolution
- Easy set up

Solution: Remote Access
Customer: RCR O'Donnell Griffin
Country: Australia
Distributor: GlobalM2M

Everything comes to life in the New Royal Adelaide Hospital

Hooking up a camera or a temperature sensor to the Internet is nothing revolutionary these days. But if you want online access to back-up power generators in a billion-dollar hospital, things are more complicated. You will need a secure and reliable industrial-strength connection around the clock. RCR O'Donnell Griffin, who have installed the control system for the backup power generators in the new Royal Adelaide Hospital, found their remote access solution in the eWON Cosy from HMS.

The New Royal Adelaide Hospital is the largest infrastructure project in the history of South Australia and projected to be the third most expensive building in the World upon its completion in 2017.

Tucked away within the hospital's East and West plant rooms are six 21-ton power generators (MTU 20V4000 DS2650). Featuring integrated exhaust, control and silencer systems, each unit ensures a combined output of 12.48MW. This means that the system can power up the entire hospital site within just 28 seconds following a power outage. If needed, the backup power generators can run for 72 hours without refueling.

Commissioning across Australia

The backup power generators are installed by Penske Power Systems and the electronic control system is designed and commissioned by RCR O'Donnell Griffin — one of Australia's leading electrical and communications engineering firms.

Since RCR O'Donnell Griffin are based in Victoria and the hospital is in South Australia, RCR quickly realized that they would need a way to control and commission the system remotely to minimize traveling costs. This is when they came across the eWON Cosy from HMS Industrial Networks.

Design Engineer Alvin Lee explains: "With the eWON Cosy, we can connect to PLCs, HMIs, generator controllers, fuel transfer controllers

> **"The eWON solution has significantly reduced the number of site visits."**
>
> Alvin Lee, Design Engineer
> RCR O'Donnell Griffin

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Connecting Devices™

Power up!
In the new Royal Adelaide Hospital plant room, you find six 21-ton MTU 20V4000 DS2650 power generators. They are able to restore power to the entire hospital in 28 seconds.

The eWON Cosy is connected to the Woodward PLCs and HMI. The Cosy establishes a secure tunnel via the Talk2M cloud service. By logging on to Talk2M, it is possible to configure and commission the gensets. Just as if connected on site.

and circuit breaker synchronising units from any location. The remote connection allows us to make changes to system settings and do PLC/ HMI commissioning just as if we were on site.

It is also possible to bring up HMI pages in a web browser using the HMI's web server. This allows full visualization and control of the site remotely, just as if we were in front of the HMI panel."

Overcoming challenges

As the eWON router is connected to multiple pieces of equipment, one of the biggest challenges was to convert different protocols to Ethernet for connecting to the eWON Cosy. The generator controllers and high-voltage sync units for instance, communicate via CAN, so third party devices, specialized for the Woodward control panels, were used to convert CAN Bus to Ethernet.

Another challenge was the sheer distance between the devices. As there are two generator rooms located in opposing ends of the building, Ethernet was converted to fiber optic in some areas to extend the distance. IXXAT CAN Bus extenders from HMS were also used.

How the eWON remote solution works

The eWON Cosy router is installed in one of the Woodward generator control panels where the device network conjugates. The router sends data via the cellular network or Ethernet to a cloud-based server called Talk2M. By logging on to this server, users establish a secure tunnel through which it is possible to access the gensets. They use their regular PLC or HMI tools, just is if they had their computer connected on site.

The results

"The biggest benefits are the time and cost savings," says Alvin Lee. "Because we can do almost everything remotely, incremental changes and updates to the system are a breeze. The eWON solution has significantly reduced the number of site visits. Any changes or troubleshooting required can be performed almost instantly through the remote connection."

Recommendations from RCR

After working with the eWON solution for some time, Alvin Lee can strongly recommend an eWON remote solution for similar projects: "If time and cost are important, you can't do without a remote connection," he says.

"One tip is to make sure that the eWON Cosy and its connected devices are in a separate network, isolated from the plant or building network if possible. This avoids having security issues or complications with the building management system or client's network."

Early test as storm hit South Australia

The New Royal Adelaide Hospital will receive its first patients in 2017, but already one year before its opening, the backup system was put to a test as South Australia was hit by a severe storm in late September resulting in a power outage. But the new backup power system kicked in as expected and Alvin Lee and his colleagues could log in from the office 700 km away to make sure the system worked properly.