



driving force

Glenorchy City Council in Tasmania has enhanced the flexibility of its existing Challenger access control system by installing GE's powerful Forcefield gateway to create a networked solution that supports remote monitoring and maintenance.

NETWORKING is the catch-cry of the new century. Not an electronic security installation goes in without that premise at its heart. But what does networking really mean to the end user? There are 2 key elements of any networked security system - the first of these is increased flexibility and usability - networking makes any large security solution manageable from a single location. The second element is dollars - when

you go networked, especially with access control systems, you save serious money.

Plenty of what you need to think about when installing a networked access control system relates to outright replacement cost. You need to make serious decisions about how much of your existing hardware can be retained and you might be surprised how much that is. Solid state access panels that are well designed and properly installed have a very long lifespan. When you consider that a typical access panel is a clever I/O platform, the decision to retain existing hardware starts looking seriously attractive.

Glenorchy City Council's former facilities maintenance works coordinator, Alan McWhirter, who sadly passed away recently, wanted to get the best possible performance from a network of 24 Challenger panels spread across 14 Council sites in Hobart, Tasmania. Economy is an important consideration for every government organization and GCC is no exception - but McWhirter wanted to do more than save money on hardware costs. He also wanted to reduce inhouse and external maintenance costs while delivering

GCC a networked access control solution that was without compromise in functionality and expandability.

It wasn't that McWhirter wasn't happy with the standalone Challenger panels chugging away across all those GCC sites. But he knew that a topical application of new technology would save council money, give the system vastly greater power and make maintenance significantly easier.

The technology McWhirter had his eye on was GE's Forcefield server - a multi-node device

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designed specifically to carry up to 64 Challenger access panels onto a networked environment for management by single or multiple authorised workstations. Forcefield is not only a gateway - it's an integration solution that can turn isolated legacy Challenger panels installed across multiple remote sites into a single fully networked access control system at very low cost.

In terms of its structure and operation, Forcefield is an industrial PC that operates as a thin client in a network. Known among integrators as a 'brick' this tough unit is aptly named. It's a

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set-and-forget component that combines power, smarts and storage. A finned body allows dissipation of heat without the use of unreliable fans and it has onboard QNX for faster and more reliable processing.

According to integrator Darren Eaton of Russell-Smith Electrical, Alan McWhirter, was the driving force behind the GCC installation.

“This is Alan’s baby,” Eaton says. “He pushed this concept through over a number of years.

I worked with Alan on GCC sites for nearly 10 years and the decision to introduce Forcefield to take Council’s access control solution online is the culmination of a lot of careful thought.”

According to Eaton, GCC has 14 sites, each with at least one Challenger panel and some with 2. These legacy Challenger installations have been administered either onsite or remotely through Titan software and dial-in or laptop connection.

“It’s worked well – it’s been very good,” Eaton explains. “But what was perfect some years ago now needs to be upgraded. From my long term perspective I would say that council has benefited from good drops in after hours calls and maintenance costs thanks to Challenger but the reality of the situation is that council has many different types of sites and many different types of users.

“As council’s needs have changed – as we’ve started issuing cards that span multiple sites - it has become more complicated to manage. That’s why we started looking at Forcefield – we wanted greater simplicity and better managability.”

Direct Alarm Supplies distributes both Challenger and Forcefield gear and has enjoyed a long relationship with GCC and the installer. DAS’ technical sales representative, Steve Passmore, says DAS’ initial involvement with the upgrade occurred when McWhirter explained he needed more from his access solution.

“Alan said that a lot of time was being spent when a new user came on board and he needed to allocate cards to new users, or change access priorities for existing users. The system, configured so each site operated independently, was proving time consuming to maintain,” says Passmore.

“Alan also wanted to incorporate greater functionality into the system, including photo ID, and Forcefield provided this with images linked to user profiles. It’s possible to configure the system so that when some one opens a door an image of the cardholder comes up,” Passmore explains.

“With Forcefield it’s also possible to link live CCTV footage into access events for monitoring purposes. This all combines to make the overall security solution easier to manage across Council’s sites, with upgrades incorporated when needed,” he says.

As Eaton explains, there are about 400 cardholders across the GCC sites and that’s getting to a size that requires time to manage.

“It’s not huge in terms of raw user numbers but taking the number of sites into account it’s a complex installation. We’ve got some really interesting situations at GCC from an installation point of view,” he explains.

“Council has a disposal area with heavy transport, there’s a public pool with associated



chemicals, there are different types of users with different needs – there are disabled users, there are users who just don't like buttons – it's been a challenge and it will continue to be a challenge.

“And there are sewerage plants – you might not think people would want to break into a sewerage plant but they do,” Eaton says. “Not only that, sewerage has a very interesting effect on the equipment that's installed close to it and we have to be very careful how we do things there.

“The landfill area also causes real problems – there's lots of wildlife – there's kids too. You can't just whack a security system in and expect it to do the job,” Eaton says.

“You have to plan your solution. We think bad guys have inside information with some of the things they do to get around security systems these days. Taking that into account something that's a big benefit to us from a physical security point of view is the council workshop's ability to turn out some really wonderful custom hardware for us,” Eaton explains.

“They've made bollards – they are very creative and they need to be.”

SYSTEM DESIGN

According to Eaton, the design of the updated GCC access control system is virtually identical to the old one.

“It's surprisingly simple,” Eaton says. “Forcefield is located in Glenorchy City Council's Works Centre building and resides on the council's network cloud. Really it's just some minor wiring

changes to bring the Challenger panels onto the network and to get them talking to the Forcefield and bang, we're away.”

Passmore agrees.

“The Challengers tap into the network at their remote locations and come back into the main building via the council's WAN – the link is a TCP/IP card that resides on the Challenger panel and is programmed with a TCP/IP address,” he explains.

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no impact on overall network speed.”

According to Eaton, having Forcefield carry all the panels onto the network makes a big difference to operation and maintenance.

“Say some one in upper management loses a card or needs a code updated,” he explains. “What you’d need to do in the old days is visit or dial into each of the 14 Council sites that staff member had access to one at a time in order to adjust codes or upgrade a card.

“You’d waste an hour doing a job like that without Forcefield – with Forcefield it takes literally a minute – we’ll be spending a little bit of time setting the solution up but I’m sure we’ll be getting that time back very, very quickly.”

And Eaton says that Forcefield is extremely easy to install.

“Most the work on sites like this involves planning how you’re going to give access to cardholders – it’s all about working out who needs access to what and when – there’s a lot of planning before you fire up the system,” Eaton says.

“You’ve got to be clear on profiling and access rules. Physically once the gear goes in there’s nothing to it but you need to get the planning right or later on you’ll spend a lot of time trying to readjust. You need to think about growth, too.

“So what’s required to actually integrate multiple challengers to Forcefield? Surprisingly, not much,” Eaton says. “You’ve got an existing network, you’ve got existing patch panels and it’s just a matter of installing the appropriate card on the Challenger.

“There’s no power to wire – you just plug in the RJ-45, program the IP address via the codepad and away you go. Physically, there’s not much to it and you get plenty from it.

According to Eaton, the upgrade offers an ideal opportunity to get all the user data from all the sites, to combine it and clean it up.



“This database cleansing process was part of Alan’s original plan – to tidy things up and add photo ID,” he says.

Taking this photo ID capability a step further is more than possible. Eaton says a potential future development of the system is the addition of CCTV so that should some one try to get through a door after hours then a camera is triggered and recording is activated.

“Forcefield allows for that integration should it be required,” Passmore agrees. “You could link CCTV cameras to tamper and door access points, and as well as images the system shows an 8-level map that allows operators to drill into a site, building or room and to call up an image of the cardholder in the area with their image. With Forcefield’s CCTV license enabled, the operator can then switch CCTV monitors to live footage from relevant cameras to verify ID.”

“You can create icons, groups of doors, open all doors in an area, close all doors in an area – Forcefield gives a great deal of control. All that functionality is available to council if they choose to go with it in the future.

Eaton says this latter capability is most likely to be employed where there are duress alarms and CCTV in locations council considers it’s appropriate.

“Relevant sites for duress alarms include all 6 child care centres or anywhere there’s customer service,” he explains.

MONITORING AND CONTROL

According to Eaton, the Forcefield workstation is a computer on the network and he says that in theory that software could be loaded onto many workstations, depending on the application. The system is monitored on-screen by GCC, with alarm events reported to a local monitoring station.

Typical of GCC’s attitude to security is a decision to use Direct Wireless for all its external alarm reporting. GCC conducted an analysis and decided Direct Wireless was the best solution as it gave a number of different levels of alarm reporting redundancy. The GCC system alarm reporting function starts with GPRS, drops back to GSM, then goes to PSTN phone line. The word is that by the time Council had paid for the units and installed them, its comparative operating costs over a 2-year period represented a saving of \$4000 – impressive stuff.

“While Direct Wireless handles external reporting, from an onsite perspective, the system is managed from a workstation in the Council Works Centre building,” Passmore explains. “There’s a significant centralized custom reporting function with Forcefield – every event related to a connected Challenger is saved on the Forcefield’s HDD and can then be incorporated into a customized report. You can follow every access event and every access denied event, as

well as alarm events.

“You can also track guard tours, cleaners – whatever you want – the reporting function is very powerful,” agrees Eaton. “But from an installation point of view I’m just looking forward to administering one system and not 14 – with all those different systems and the different methods of managing them – integrating them into one whole with a single interface – that’s going to be so much easier.

“This upgrade is going to save time and money, while offering plenty of scope for future expansion” Eaton says. “Forcefield is an open book – if a user wants to develop the code, they can do anything they want. If you know networks then you know how Forcefield works – you can virtually make the system talk.

Eaton says that in the field the access system is driven by a combination of prox and keypad.

“We’ll also be installing some long range prox to be used for facilitating wheel chair access and we have a couple of other solutions we developed specifically for this solution,” he explains.

“Card reader numbers are set to double across the overall system – there are about 50 at present,” he says. “That’s about the limit given we’ve not gone to 4-door controllers, which we’re about to do. We use the teardrop shape prox readers, some are the heavy duty industrial for external areas – we’ve found them to be very good.”

Eaton has plenty of praise for the Challenger gear and for its supplier, Direct Alarm Supplies.

“Being in Tassie we’re not the centre of the universe and a great thing about DAS is being able to go and get supplies without having to send away for them. If something really nasty happens I know with DAS we are covered immediately.

“In terms of the gear itself, things like the metal work on the Challenger chassis are excellent from an installer’s point,” Eaton says.

“You can screw it down and it won’t change shape – it’s good, strong stuff. The circuit board is rugged, too, and there’s plenty of room in the case for extra relays – frankly if something’s too hard for an installer to expand it’s not good enough.

“One thing I’ve seen with GCC again and again is that you always have to install roomy electronic security panels with a space beside them because something is going to go in those spaces,” Eaton says.

END USER PERSPECTIVE

According to GCC works manager, Emilio Reale, Council saw the upgrade as the perfect opportunity to bring its system together into an homogenous whole in support of Council’s overall security policy.

“From Council’s perspective it’s about Crime Prevention Through Environmental Design,” Reale explains. “Security systems support Council’s overall focus on CPTED with access

control being a big part of that.”

“This latest upgrade came as we were undertaking a program to install new card readers at Council Chambers and we decided to put some additional funding into the project in order to install Forcefield,” Reale explains. “We saw this as an opportunity to gain efficiencies – to streamline the process and to bring the system together in terms of operation and control.

Reale says the new card readers on external doors will provide greater security between public and staff areas in Council sites.

“The photo IDs which Forcefield allows us to make onsite will be worn by staff so those without an appropriate ID can be challenged,” Reale explains.

“Another real benefit is greater control of valuable equipment. For example, with the new system, staff will swipe with a card to get keys for vehicles. We need to know who got the keys and when. We are also looking at asset tracking.”

“Moving forward we have discussed the potential for facial recognition technology for access into high security areas – it’s a little way down the track but is in the back of our minds,” Reale says. “Forcefield also gives us the ability to implement electronic time cards if we choose.

“With this solution we have deliberately aimed to do things for the long term – quality costs money but in the long run it’s cheaper than installing a solution that’s substandard.”

FACT FILE

Glenorchy City Council’s GE Forcefield features:

- Integrated Photo ID
- Advanced alarm monitoring
- Thin-client network architecture
- Flexible operator permissions and menu options
- Powerful reporting features
- Automatic triggering of predefined functions based on system events
- Real time graphic display
- Door Monitor allows selected doors controlled on a workstation basis
- System backs to external storage devices via NFS or CIFS
- Door lock override feature
- Guard tour feature provides time-based checkpoints for patrol staff
- Supplied by Direct Alarm Supplies
- Installed by Russell-Smith Electrical