



Motorola's Wireless LAN: The Prescription for Enhancing Patient Care across KAGes' 20 Hospitals



"We've a relentless commitment to patient care, applying pioneering technology to enhance the provision of medical treatment. Motorola's wireless LAN, the largest of its kind in the European health-care sector, is a visible part of this commitment. Patients can access the internet and appreciate the opportunity to stay in touch with work, friends and family while staff are delighted with the system which supports a range of clinical applications: records can be updated as teams conduct rounds, reducing the scope for data entry errors, while patient data can be accessed bedside including medical history and X-rays to enhance diagnosis and treatment. We'll be extending the application of the network with the use of VoIP in the near future to reduce operating costs."

– Dipl. Ing. Dr Werner Leodolter, CEO, KAGes

The company: KAGes

KAGes manages 20 hospitals and nursing homes in the Graz and Styria regions of Austria. The organization has a strong commitment to patient welfare and is renowned for pioneering new technology to advance clinical care and enhance patient comfort.

The challenge

The KAGes Group had the vision of providing patients and staff with internet and network connectivity across its state hospital and university clinic in Graz and a further 19 hospitals in the Graz and Styria regions of Austria. With wired systems prohibitively expensive for such a large network, KAGes required a cost-efficient alternative networking technology. Due to the nature of its application this needed to be highly secure, while delivering fast access speed and exceptional reliability.

Customer profile



Company
KAGes

Location
Austria

Industry
Health care

Motorola products

- 30 WS5100 switches
- 3 RFS7000 switches
- 1000 AP300 and AP100 access points

Applications

- Internet access for patients from a range of connection points across hospitals
- Access to a range of patient data for medical staff throughout hospitals and at bedsides

Partner

- Datentechnik
www.datentechnik.com

Benefits

- In keeping with its position as a leading and visionary health-care provider, KAGes provides patients with high-speed internet access to improve their hospital stay
- Patient care is improved: Medics can quickly download all patient records and access data intensive files such as X-rays bedside
- KAGes has the capability to deploy VoIP to reduce operating costs and track vulnerable patients



Solution

Based on the recommendation of its trusted long-term IT partner, the KAGES Group opted to install wireless LAN (WLAN) technology from Motorola. Using highly secure and reliable wireless switches and access points, KAGES has cost-efficiently provisioned wireless connectivity throughout its hospitals.

Business value

There are three distinct advantages of the system. First, the patient experience is improved as they can access the internet to stay abreast of work issues and contact friends and family. Second, patient care is advanced as medical teams can update records using template forms – reducing the scope for errors – while teams have access to patient history and records to improve the provision of care. Third, the network can accommodate new services. KAGES is planning to deploy VoIP to reduce its call costs between locations and is evaluating the use of Radio Frequency Identification to track key equipment, mobile devices and vulnerable patients.

Pioneering hospital

The KAGES Group is renowned as a technology pioneer as Peter Posch, EDP Manager, KAGES, observes: “We apply technology to enhance patient

care and also the experience of staying within our hospitals. We recognized that the provision of a data network across our hospitals would further these goals. Internet access would be highly valued by patients – especially those who are with us for long stays and wish to remain in contact with work and friends and family who might not be able to visit. Also of course, technology is creating new ways to improve service delivery, and providing fast access to data and information at the bedside would enable our medics to make better decisions.”

Peter Posch’s team undertook an evaluation exercise to assess the optimum network technology too. He comments: “Clearly wired systems would be prohibitively expensive and in conjunction with our IT partner, Datentechnik, we evaluated the potential of wireless technology.”

Security and performance front of mind

Datentechnik has provided technical services to KAGES for a number of years. Ulrich Venecek, Key Account Manager, Datentechnik, says: “When it comes to networks for hospitals, security is a critical issue. Of course it’s also critical that the network provides faultless, high-speed operation and is safe for use in health care. Also, redundancy was a key requirement; capacity needed to be built in to provide scalability.”

Datentechnik has designed and deployed numerous networks using Motorola's wireless LAN technology: experience which provided the surety for KAGes that the infrastructure was the ideal solution for its network.

"Motorola's wireless network technology is at the forefront of its field. We were able to clearly explain our preference for the technology which is very suited to large-scale high-bandwidth deployments such as KAGes," says Ulrich Venecek. "KAGes particularly valued the virtually impregnable security offered by the switches as well as the QoS guarantees, fast throughput, the capability to deliver unified voice, data and RF management on one system and the coverage is easy to set up, maintain and adjust."

Network profile

The wireless switches deployed by Datentechnik share the same security set-up which includes Stateful Firewall at layer 2 and 3, IPSec VPN Gateway, Geofencing and Secure Guest Privileges (as defined by the network administrator). The network comprises: 30 WS5100 switches, 3 RFS7000 switches and 1000 AP300 and AP100 access points. It supports roaming capabilities, self-healing, location services, VoIP capabilities and centralized management. The equipment is very powerful – for instance RFS7000s can support up to 8,000 clients and in a cluster can scale to support 96,000 users – and, with its greater scale, reduces the equipment inventory.

Enhancing medical care

Medical teams conduct their rounds with laptops fitted to mobile carts. The computers provide a continuous, fast and highly robust connection to data services. When visiting patients, doctors can call up medical records, including treatment history, drug regimens and X-rays.

"The key premise of the service is that, the more intelligence you give to teams at the point of care, the better the treatment will be," says Peter Posch. "Doctors have the complete picture about the patient and this ensures that their recommendations for treatment are fully informed. The service has also streamlined processes; teams don't need to search for records or X-rays when preparing rounds. Another key benefit is that we provide template forms to report on treatment and, as staff fill these in on the fly, records are much more accurate and the risk of error is reduced."

Alongside the professional applications of the network, patients are also able to access the internet. "This is an important service as we're committed to enhancing patient comfort," comments Peter Posch. "If you stay for any length of time, the facility to contact work and easily keep in touch with friends and relatives is a great fillip – patients are very pleased to have this facility which they can use by bringing their own laptops to hospital."

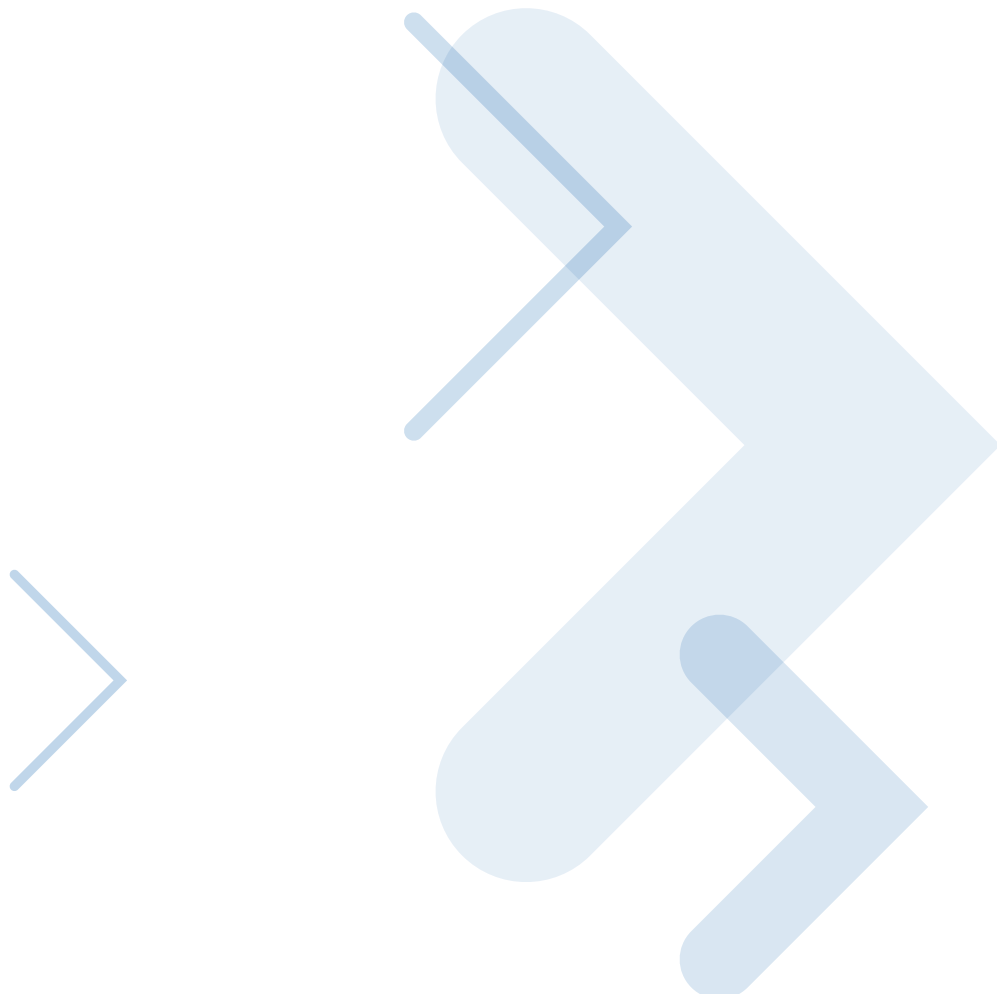
Extending investment returns

The wireless network has the capability to support new services. These include RFID tracking and VoIP. The tracking capability can be used to constantly monitor the location of devices, key equipment such as dialysis machines, and people, while VoIP will help reduce operating costs.

Peter Posch concludes: "The network provides the foundation to deliver greater value by offering VoIP which we plan to introduce to reduce our operations costs. The introducing of tracking will also help us improve patient care; with geofencing of the network for example, we can see when vulnerable patients have moved beyond designated areas – enabling us to quickly send help. We're delighted with the technology which is significantly improving the operations of our hospitals."

About Motorola

Motorola is known around the world for innovation in communications and is focused on advancing the way the world connects. From broadband communications infrastructure, enterprise mobility and public safety solutions to high-definition video and mobile devices, Motorola is leading the next wave of innovations that enable people, enterprises and governments to be more connected and more mobile. Motorola (NYSE: MOT) had sales of US \$30.1 billion in 2008. For more information, please visit www.motorola.com.



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