

Annecy Hospital Upgrades to State-of-the-art Communications Infrastructure

By Claude-Henri Tonneau, Director of Information Systems, CHRA

The digital hospital is no longer a dream: It is now an achievable goal at the Annecy Regional Hospital Center (CHRA). With 979 beds, the CHRA is the largest hospital in the Haute-Savoie department in the French Alps.

Every year, our 2,400 healthcare personnel handle more than 50,000 emergency cases and treat 70,000 patients, requiring 300,000 hospital bed-days. In addition to providing an excellent medical and patient experience, we want the CHRA to be an example of a truly modern hospital.

In 2006, as part of our ongoing construction, we issued a call for tenders to build a communication infrastructure – a powerful and homogeneous infrastructure capable of delivering innovative projects, especially in the field of patient services. The architecture also had to meet security constraints, but without impinging on the availability of essential communication resources in an environment where mobility is a dominant factor. The project was part of an organizational strategy aimed at setting up an integrated IT system centered on unified patient files and utilizing a network of terminals in patients' rooms.

The Shopping List: Ubiquitous Access for Both Patients and Staff

The CHRA had several objectives in setting up this ambitious project. The construction of a new, urban hospital with long corridors and separate logistics and medical buildings demanded an innovative approach. We wanted our communication infrastructure to support a high-performance information system that converged voice, data and imaging, to put information at the fingertips of our healthcare professionals wherever they are on the campus. The overall goal was to reduce time spent accessing information, and to avoid repetitive tasks that add little value – in short, the pursuit of heightened efficiency.

First, we wanted to ensure that all medical personnel would have the IT support they need, where they need it, to work most efficiently. This would entail secure access to most healthcare applications and patient files from the patient's bedside. In addition, staff would need to be able to access the hospital's intranet portal using a synchronized and unified directory, and to take advantage of the latest collaborative tools such as unified messaging.

Second, the hospital wanted to put a genuine multimedia communication relay at the patients' disposal.

Finally, there was a requirement to cater to the specific needs of mobile medical, nursing and technical personnel, who need to be quickly apprised of alarms, alerts and emergency calls via a mobile terminal integrated into the communications infrastructure.

This major healthcare infrastructure initiative required in-depth technical expertise and detailed project management. Alcatel-Lucent and NextiraOne responded to every point in our call for tenders. Their project management and their quality assurance planning proposals addressed all of our requirements. In short, they brought all of their knowledge and experience to bear on this infrastructure project.

The Solution: A Phased Introduction of Innovative Services

At the conclusion of the 2006 tender process, Alcatel-Lucent was selected to supply the underlying communication technologies as part of the infrastructure implementation project led by NextiraOne.

Our earlier systems were a mixture of voice infrastructure and data networks. Convergence was not possible between these systems, and indeed they had been put in place ad hoc, without an overall strategy. Our move into the new CHRA premises gave us the opportunity to overcome these issues.

The existing systems were holding back the development of CHRA's information systems, particularly in the area of managing medical imagery and interfacing with external networks. In addition, it was difficult to respond to increasing demands on the system from both internal and external sources. Essentially, we were looking to simplify the technologies used by concentrating on all-IP. We wanted to simplify our infrastructure management, as well as increase the quality of service offered and reduce purchasing and maintenance costs.

What's more, our objective was to allow our healthcare professionals to refocus on their own roles by making all the information they need instantly available to them. For example, Digital Enhanced Cordless Telecommunications (DECT) has become a key multi-functional tool for our staff by giving them access to more than 10 status reports, allowing them to manage emergency calls, logistics flows, alarm reports, intercom calls and even to see which doors are open.

The first phase of the implementation involved the design of a voice, data and image-sharing network architecture which unified DECT mobile telephony with a hospital communication solution (comprising telephony and messaging) and a Local Area Network (LAN) deployment. The partnership also provided project management and training, and implemented an operational service agreement to manage any incidents.

In the second phase, which started in April 2008, more than 600 patient terminals were deployed throughout the facility, with the aim of installing a separate terminal at every patient's bedside. This is the largest project of its kind in France to-date, in terms of the number of terminals deployed.

The terminals perform a variety of functions for both hospital staff and the patients themselves. For the medical and nursing personnel, access is provided to patient files, lab reports (which will eventually be accompanied by imaging), prescriptions, healthcare plans and so on.

As for the patients, they can take advantage of a wide variety of entertainment sources, including TV, the Internet, Video on Demand (VoD), telephony, games and audio books. Additionally, they can access medical services relating to their treatment, such as information on the hospital and its facilities, pathologies or tests and information about preventive healthcare. The terminals are also used to carry out end-of-stay quality surveys to allow the administration to gather feedback from patients and to improve future healthcare provision.

This second phase of the project was implemented in partnership with Netlogon, the specialist multi-play integrator (for the integration of healthcare data and multimedia content). The project involved the deployment of an expansive range of communications terminals and infrastructure, including DECT base stations and terminals, IP-voice/multimedia terminals, analog stations, core and distribution network switches, as well as the Alcatel-Lucent OmniPCX Enterprise IP PBX. The infrastructure connected remote sites over secure links to deliver unified messaging and Mobicall alert management.



The Anney Regional Hospital Center (CHRA)

Transforming Healthcare Communications for the 21st Century

We are enthusiastic about the benefits derived from moving to a converged, all-IP system. The simplification of our infrastructure afforded by all-IP with centralized global system management means that our IT team can quickly exploit the new infrastructure. Now we have a communication system that offers endless evolutionary possibilities, and many projects that would have been impossible with our old system are now open for us to pursue. One example is a Picture Archiving and Communication System (PACS), which

allows the archive-based management of medical images. Imagery can be shared over the network, enabling remote diagnosis and treatment. A second would be the interfacing of our systems with the outside world – other networks, healthcare professionals or establishments.

The benefits of a digital strategy for healthcare institutions are already becoming obvious. The technologies are available, and suppliers are ready to help with their deployment. Naturally, the process demands rigorous project management and an understanding of the world of healthcare management, as well as technical expertise, which is why we decided to partner with Alcatel-Lucent and NextiraOne.

The Anney project represents one of the largest integrated IP-voice, data and multimedia solutions in France to-date, and demonstrates how Alcatel-Lucent can leverage its complete portfolio of technologies and end-to-end solutions to support the successful transformation of healthcare systems. The result is patient-centric services that deliver a better patient experience and improved efficiency within a sustainable healthcare system.

Alcatel-Lucent's solutions enable the design and deployment of a secure and easily managed converged network infrastructure – both wired and wireless – to facilitate consolidation and cost-reduction. Intelligent, rich presence and collaboration services enable knowledge-sharing to improve patient care and safety. The integration of IP-voice into work-flow and applications, based on an innovative user profile approach, regardless of device, makes people and knowledge more accessible – keys to any successful dynamic enterprise. Significantly, a migration path from traditional voice to IP-based voice services protects existing investments.

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