

## USP HOSPITALES GROUP, A PIONEERING PROJECT OF IP TECHNOLOGY IN THE NEW USP INSTITUTO DEXEUS

### USP HOSPITALES

**Established in 1998 by Gabriel Masfurroll, president and managing director, it has its head office in Barcelona and offices in Madrid. The hospital group has a network of 31 health centres in Spain with 3,000 employees, 2,500 doctors and sees more than a one and half million patients a year.**

#### SECTOR

The Group operates in the health sector and occupies the first place in this area in Spain.

#### CHALLENGE

Implement the best and most innovating technology to prosper in patient comfort. Facilitate doctors' and health personnel's work, providing the possibility for accessing the detailed information required at any moment on what is happening in the hospital.

#### OBJECTIVES

Convert the hospital into an IP reference centre on a European level.

#### TECHNOLOGICAL SOLUTION

The project is based on the Tele2 Comunitel's IP Telephone Network service that provides a convergent system for managing voice and data in addition to images. The objective has to develop the full potential of XML applications and added value that ToIP technology provides.

#### ADVANTAGES

Amongst the advantages provided by the new possibilities, the fact that they simplify the bureaucratic procedures and continuous movement of paperwork in the centre can be emphasised. The development of internal processes linked to IP technology allows for improving patient treatment and hospital management.

The USP Hospitales Group occupies the first place in the Spanish health market as an independent private hospital chain with a network of 31 health centres in our country.

UPS Hospitals is building a new structure in Barcelona, to replace the current installations of the Instituto Universitario Dexeus. For this new structure, the group has come to an agreement with Tele2 Comunitel for them to develop an innovating IP Telephony Network in which they will apply Cisco's IP technology.





## PROJECT TO BE DEVELOPED

The IP Technology project to be carried out by Tele2 Comunitel and Cisco includes network electronics, the installation of an IP telephony network system and the WiFi network. The project will be started with the integration of ToIP technology with the Ackermann Patient-Infirmery System that allows the patient and nurse to be in permanent contact. Subsequently integrated tools will be developed with the Hospital Management System that allow for knowing, by means of the telephony network, the condition of the patients in each room.

In the future RFI labels will be created in which the situation of patients and facilities can be monitored (such as the movement of babies from the nursery to the room) or with WiFi, making it possible to monitor health system control elements with Tablet PC's or PDA's. The main criteria taken into account on designing the type of network and choosing the different equipment has been proving a solution centred on security, for which a maximum redundancy has been considered.

The USP Instituto Universtiaro Dexeus has more than 2,000 telephony and data points, and a 100% wireless coverage is planned for the building. In this way, the doctors and nurses can connect to the UPS Hospitales network by means of PDA's or any portable device. This network is conceived to manage both voice and data, and images obtained from the diagnosis equipment. All this will facilitate the work of all the professionals in the health area, as well as those in the administration area. It will also be easy for the doctors and nurses to access Internet with broadband. Furthermore, they will have a portal where they can see their diary, in addition to requesting patient admittance, patient tracking or looking at the results of diagnostic or laboratory tests.

It is even possible to receive messages in the mobile telephone of the professionals with information of patients' conditions. These tasks will be carried out by means of the use of different certified and safe channels that guarantee the protection of all the data supplied.

## CURRENT SITUATION

In 2003, Tele2 Comunitel installed a VPN network (Virtual Private Network) that allowed for the main Spanish centres of the hospital group contacting each other. Voice services have been installed after this first project (with 14 primaries and switchboards), DataCenter services (with housing of all its machines), network electronics (maintenance of all the routers and the majority of the WiFi switch and networks). In 2005, USP Hospitales started to work with the Tele2 Comunitel's IP Telephony Networks service based on Cisco technology in the Barcelona, Madrid offices and the USP Medical Speciality Centre in La Coruña. Shortly they will have, in addition to the USP Instituto Universitario Dexeus, the USP Clínica San José in Madrid, the USP Clínica Sagrado Corazón in Seville and the USP Hospital Costa Adeje in Tenerife.

With all the technology that the Hospital Group already has in Spain, and with the new project that it is going to be given, USP can become the reference for the South of Europe in IP technology applied in the hospital area. Thus, technology will go hand in hand with health to improve its processes and modernize its information system.

"Providing patients with all the comforts has been one of our priorities in the new project. The use of technology has been taken into account in the design of the new hospital to achieve this, offering the patients the possibility of accessing multiple connectivity and entertainment options during their stay in our hospital"

Santiago Raventós, director of USP Hospitales Information Systems.



## TECHNOLOGICAL SOLUTION

The technological solution proposes responds to USP's needs for the convergence of services on a unique Wireless LAN infrastructure that provides smart mobility and localisation services without renouncing high security levels and providing tools that facilitate both its deployment and management.

The IP Telephony Network service is based on Tele2 Comunitel's access network, that allows, for carrying out all of the customer's voice and data services in one network. This is possible thanks to the prioritisation, with QoS (Quality of Service) techniques, carried out in the Tele2 Comunitel network of the IP Telephony Network service on the data services. In this way, USP does not need to maintain a double infrastructure in its offices and medical centres and obtains savings in infrastructure costs and in personnel for its management. It also obtains big savings in telephone calls made in the IP network due to the more efficient use of the installed resources.

In the solution Wireless LAN Aironet AP1130 access points are included, that together with the WLAN Cisco 4400 series, allow for extending the USP applications to mobile devices such as tablet PCs and PDAs providing dynamic management of the WLAN coverage, with the highest levels of security required such a sensitive environment. The WLAN solution also supports localisation services for devices and resources based on RFID, with the Cisco Location Appliance 2700 that provides information for the localisation applications of the WLAN network devices. Finally, another of the critical services that the Cisco WLAN infrastructure provides in the proposed solution is QoS that allows the wireless IP Telephony Network terminals to operate complementing the IP Telephony Network solution based on Cisco Unified Call Manager also included in the solution.

**"The role of technology in the new USP Instituto Universitario Dexeus will be a deciding factor, not only for those who work there, but also for the patients and users"**

Santiago Raventós, director of USP Hospitales Information Systems.

To respond to communication modernization needs, for improving productivity and the services offered to patients, an IP Communications solution has been included in the proposal, based on Cisco Unified Call Manager and IP Cisco 7912G, Cisco 7960G, Cisco 7970G and WLAN IP Phone Cisco 7920 telephone terminals. With this solution, communications become part of the productivity environment of users, providing new levels of interaction between the different communication applications, such as electronic mail and voice mail.

The terminals include traditional telephonic services, as well as new services such as extension mobility, online directory, long distance calls, etc.

Amongst the most important features of this IP communications system, is the integration capacity with XML, with the USP applications in the telephone terminal screens, providing an unprecedented level of new services for the patients in the terminals located in the rooms and for the professionals in the mobile and fixed user terminals.





## ADVANTAGES

With all these possibilities, the Hospital Group will have advantages such as reducing the bureaucratic procedures and the continuous movement of paperwork in the centre. There will be, therefore, a big reduction in waiting time and a better customer service.

Furthermore, the customers of this new Institute will be privileged, as each room will have a plasma television where they will also be able to surf the Internet.

## FUTURE EXPANSION PLAN AND DEVELOPMENT OF NEW SERVICES

The start up of this project will facilitate doctors and nurses' jobs, and, in general, all those persons who need to obtain detailed information, which is completely reliable and online, on everything happening in the hospital group.

## CISCO INSTALLED EQUIPMENT:

ISR2800 Family  
 CCM Family  
 Aironet 4400 and 1000 Family  
 7970, 7960, 7920, 7914 y 7912 IP Telephone Family  
 6500 and 3750 Catalyst Family

## FOR MORE INFORMATION



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## About USP Hospitales

The hospital group has a network of 31 health centres in Badalona, Barcelona, Adeje, El Ferrol, Girona, La Coruña, Madrid, Marbella, Murcia, Palma de Mallorca, Santa Cruz de Tenerife, Santiago del Teide, Sevilla, Torrevieja, and Vitoria. Furthermore, it co-manages 6 hospitals in Portugal, situated in the cities of Lisbon, Porto, Sangalhos, Lagos, and Faro. It has recently created the USP Hospitales Maroc company to open business and lines and market in that country. Since its establishment in 1998, it has developed an active investment policy of 270 million euros. At the end of the 2006 financial year, it had a turnover of 236 million euros and EBITDA of 34.7 million euros. For more information on USP Hospitales, please visit its web: <http://usphospitales.com>



## About Tele2 Comunitel

It is one of the alternative leading operators offering telecommunications solutions, providing global services that cover needs in telecommunications, Internet, IP Telephone Networks and other added-value services. Its technological capacity on having its own network has enabled the company to be the pioneering operator capable of offering direct access to both the residential and business sectors. It has more than 30 customers in 23 European countries.



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