

# Implementation of an intelligent interface in the clinical environment of an Intensive Care Unit.

Full-HD Axis network cameras and modules with I/O allow optimal supervision of Intensive Care rooms at Hospital Clínic de Barcelona.



**Organization:**  
Hospital Clínic de  
Barcelona

**Location:**  
Barcelona, Spain

**Industry segment:**  
Healthcare

**Application:**  
Safety and security

## Mission

The goal of the implementation was to provide a safer healthcare process by creating an automated environment in potentially risky situations, in addition to the dynamic distribution of information and the application of good clinical practices.

## Solution

When a new hospital emergency occurs in an intelligent environment, it is capable of adapting in the best way possible to support medical staff in the care process. The goal of this project was to improve clinical safety for ICU patients.

## Result

Full-HD Axis network cameras and I/O modules allow optimal supervision of Intensive Care Unit (ICU) rooms at Hospital Clínic de Barcelona (HCB). HCB is considered one of the leading healthcare centers in Spain, and even internationally, with a long tradition of research and innovation.

**“We are very satisfied with the results of incorporating Axis devices in our clinical environment. They not only facilitate the day-to-day work of our professionals but also ensure the highest quality of service, prioritizing the safety of the patient, their loved ones, and of unit staff.”**

**Dr. J. M Nicolás, director of the E014 Intensive Surveillance Area and the Clinical Institute of Internal Medicine and Dermatology (ICMID).**

In September 2016, a new automated system for the control of network-connected devices was installed in the ICU. Inside each room there is a tablet with an app that controls all devices and medical alerts (with different color codes to define the severity of the emergency). In addition, a TV monitor reproduces the clinical contents of greatest interest to healthcare professionals. The nursing station also has a tablet with an app that remotely controls all lights and devices in all the rooms.

The 10 AXIS P8221 Network I/O Audio Modules allow communication between the lighting system and the unit's data management server. There are currently 2 modules per room: one for data input and one for output. The input module receives binary data about the status (on/off) of the lighting system and sends it to the unit server. The output module allows the opposite: sending information from the data management server to the lighting system.

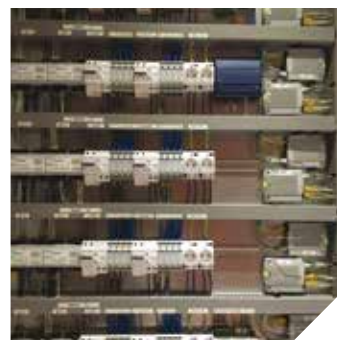
Thanks to this system, the Axis modules can control the lights and respond to the activation of predefined alarms—such as Code Blue, known in hospital settings as an alert in the case of cardiac arrest. In addition, the modules also control the doors for all rooms in the unit.

What's more, a connection to several relays allows control of activation/deactivation of the polarization for the room window, and also allows direct activation of door opening/closing by accessing the device ports via HTTPS codes.

All doors are, in turn, associated with automatic dispensers and the RFID system (radio frequency identification). Thus, only when healthcare professionals have washed their hands does the dispenser's RFID antenna send the signal to the data management server that asks the Axis module to open the door.

The 7 AXIS C2005 IP speakers facilitate the transmission of music to rooms by activating manual triggers, which are used to provide music therapy sessions for patients. And finally, the 10 AXIS P55 PTZ cameras provide 24-hour monitoring of the unit.

Thanks to its easy integration via the VAPIX® platform, the unit has its own apps to control the main features of the camcorders over the hospital's internal network, facilitating the work of medical professionals.



**CLÍNIC**  
BARCELONA  
Hospital Universitari

**For more information on Axis solutions, visit [www.axis.com/healthcare](http://www.axis.com/healthcare)  
To find a reseller of Axis products & solutions, visit [www.axis.com/where-to-buy](http://www.axis.com/where-to-buy)**

©2019 Axis Communications AB. AXIS COMMUNICATIONS, AXIS, ETRAX, ARTPEC and VAPIX are registered trademarks or trademark applications of Axis AB in various jurisdictions. All other company names and products are trademarks or registered trademarks of their respective companies. We reserve the right to introduce modifications without notice.

**AXIS**  
COMMUNICATIONS