



Smart Healthcare Communication Solutions

Our Systems Adapt to Changing Ward Environments.

We evolve with you

NOI Technologies is a subsidiary of ZKR Healthcare which was formed with the aim to bring the latest technologies and industry best practices under one roof at affordable costs for a digital, smart and sustainable Healthcare industry. From communication and information management to workflow, asset and patient management our smart solutions help care givers and patients equally in most efficient way. We believe that the quicker the world's institutions can adapt to latest advances in technology, the better and more equal human quality of life can be across the globe.

We are proudly the emerging leader in Smart Healthcare solutions industry with our smart systems installed in more than 750 Healthcare facilities which have served over 38 million patients over the span of last two decades.

OUR MISSION

Digitally smart and modern hospitals where goal driven technologies do the job, simplifying the workflows; automations that make daily tasks easier for the care givers while comforting the patients at the same time and leaving least footprint on the environment. Our ultimate goal is to help healthcare facilities achieve a true sustainable digital transformation!

OUR VISION

At NOI Technologies, we use the extensive industry experience that we earned over the years coupled with latest technologies to create an ecosystem of smart products and services that spawn a new era of fully digital and paperless hospitals.



Why Choose ZKR?

ZKR takes advantage of recent advances in the latest technology to enhance patient-staff communication and improve staff efficiency, leading to quality patient care.

Is your
Healthcare
Communication
System
Intelligent ?

Does your system allow you to...

- Know when your patients need help?
- Track which nurses respond to patient calls?
- Track how long it takes nurses to respond to a patient call?
- Track how long nurses spend in patient rooms?
- Use multiple call types and escalations so the critical cases always take priority?
- Talk to your patients directly so you are informed of the details of the incident immediately?
- Notify your technical staff of any faults and malfunctions in the system automatically?
- Only notify selected teams for selected types of calls, reducing alarm fatigue?
- Continue service and full functionality through local backup systems even when server connection fails?
- Automatically forward calls from one Nurse Station to another for Night Mode?
- Reconfigure which rooms are connected to which nurse stations without touching a single cable?
- Prevent unauthorized people from initiating false alarms for important call types such as Code Blue (Cardiac Arrest)?
- Update your system software remotely?
- Integrate with other hospital systems allowing a unified source of information?
- Allow your patients full control of their environment such as lighting, curtains, air conditioning, music, TV?

ZKR does.

Pure IP

ZKR Infinity, Comfort and Versatile series are pure IP systems with fully structured cabling, allowing for detailed and easy device fault monitoring with different notifications for different types of failures, such as power loss, disconnection, major malfunction, etc. The system can also update the software of all of its component units through the network automatically.



Middleware Integration

Integration Software is the process of combining data from many different sources, typically for analysis, business intelligence, reporting, or loading into an application. Our systems take one step further and work as Middleware – as a bridge between different software.



- Patient Monitoring Integration
- HIS (Hospital Information System)
- Fire Alarm Integration
- PBX Integration
- Building Management System
- Infant Tracking
- Public Voice Address Integration

Modern Room Control

Our Room Control Units are touchscreen, with easy to navigate menus and clear indicators regarding the connection status and active call statuses. These menus are configurable to the needs of the hospital.

Highly configurable room control units allow new custom types of emergency calls, consultation calls to any hospital branch specified by you, different quantities of connected pull-cord or wall button type call points, etc.



Flexible Software Workflows and Efficiency

Our systems are tailored to your requirements. Our flexible software allows us to accommodate user-designed workflows through intelligent call routing.

Calls and alarms need only go to the relevant assigned staff, reducing general alarm fatigue and promoting a healing environment—helping you supply efficient quality patient-care and manage your most valuable resource: time.



Web-Based Server Interface

We offer fully backed up server options with hot swap capabilities based on hospital demand to ensure continued service.

Our systems work from a single server with a user friendly web-based Application and Reporting Interface allowing you to monitor what types of calls were made when and which personnel responded to them, as well as the use of the MCW mobile application, detailing when personnel received and read messages and calls, and when they declined calls, etc.



Scalable

The system is scalable and modular, and unlimited in scope. Our Intelligent Healthcare Communication Systems easily grow with your hospital and respond to your needs without needing to completely reinstall already installed portions of the system.

Fully VoIP Structure

Voice calls can be made in all our featured systems, from room to room, nurse station to room, nurse station to nurse station, patient handset to nurse station, and from the MCW mobile application to any of the VoIP units connected to the system. At the institution's request all voice calls made on the system can be stored on the central ZKR application server, and listened to at any time.



Stability and Backup

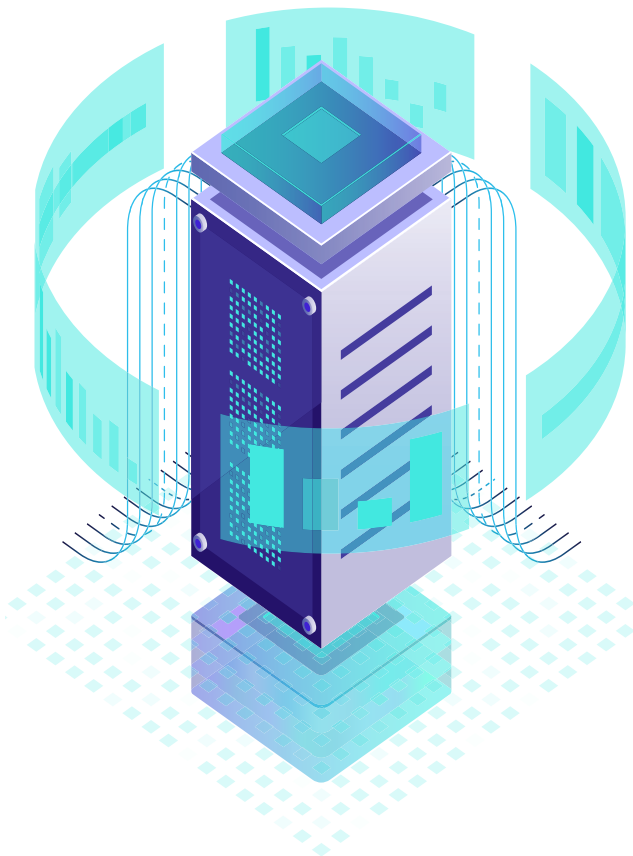
The ZKR system architecture was designed to be 99.95% operational. Thanks to fully structured cabling, one malfunctioning unit or cable does not affect other units. In case of a Nurse Panel malfunction, calls will automatically be forwarded to another Nurse Panel defined within the system, and the system will continue normal functionality through the other Nurse Panel uninterrupted.

All system logs are kept centrally in the local ZKR application server, and automatically backed up. These logs can be monitored through a web based interface by any authorized personnel from any computer on the network. The logs can be exported to a spreadsheet or printed.

Easy Maintenance

ZKR system comprises of easy maintenance modules. Our systems can scale from 10 beds to 10,000 beds with no problems and expand with your institution in the future.

All equipment within the system detect any failures automatically within 30 seconds and generate Failure Notifications to the assigned technical teams of the institution. In this way accurate address error information is sent to the right people quickly and reliably.



ZKR Infinity Series

VOICE COMMUNICATION PLATFORM & NURSE CALL SYSTEM

ZKR Infinity series provides a state of the art voice communication platform for your Nurse Call and Emergency Code needs.

The system is designed to enable a higher level of communication between patients and nurses, and its detailed event logging allows for easy and thorough service quality evaluation. It empowers patients to control their environment including TV, air conditioning, window blinds and lights, while giving them the ease of mind knowing that their nurses are a button's press away.

Duty Station

ZKRUNCIPCNFRMC002

The Infinity Duty Station ensures communication between the Nurse Console and the call devices. The interface can be customized to fit any routine to ensure Nurses have the most efficient workflow.



The Duty Station is VoIP enabled, Nurses can make voice calls and contact the hospital staff. Code Blue and other custom emergency codes can be initiated through its onscreen menu.

Consultation calls can be made to any branch specified by the institution.



HD Touchscreen

10" HD Touchscreen allows the Duty Station to be used comfortably for data entry for various nurse routines.



Duty Station can be used for self-reported patient satisfaction surveys.



Nurses can use the station to initiate Cleaning and Technical support requests.



Cleaning Duty tasks can be fully digitized, maximizing performance and safety.



Nurses can call any VoIP device from the Duty Station touchscreen.

- PoE (Power Over Ethernet)
- VoIP Full Duplex SIP
- Conference Call
- Internal and External Call
- Built-in Mifare card Reader
- Built-in BLE Beacon
- Timer/Stopwatch
- Menu option for personalized task lists based on personnel ID
- Can display hospital advertisements or other videos
- 10" Touchscreen

Bedside Console

LUXINFST35TC0001

The Bedside Console is a VoIP enabled bedhead unit to be mounted on the bedhead or the wall next to patient beds.

- PoE-Power Over Ethernet
- Full Duplex
- SIP Protocol
- RFID Card Reader
- Configurable 3.5" LCD TFT Touchscreen



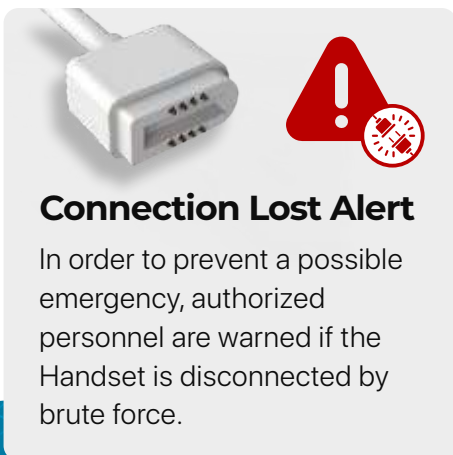
Configurable Touchscreen

Its touchscreen interface can be configured with buttons such as;

- Code Blue
- Emergency Call
- Assist Call
- Cleaning Staff Call

Magnetic Connectors

There are two magnetic attachment points on the Bedside Console. One of the connections is dedicated for the Pillow Speaker and the other is for integration with medical devices, smart beds or other functions.



Connection Lost Alert

In order to prevent a possible emergency, authorized personnel are warned if the Handset is disconnected by brute force.



Pillow Speaker

LUXINFHSMGPS0001

The pillow speaker provides a quality two way patient to staff communication with a full duplex voice communication channel.



Waterproof Keypad

The rubber keypad provides easy cleaning, prevents the spread of germs and gives a comfortable feeling of use. Comfortable hand-fit design with large buttons for ease of use.



Magnetic Connectors

Its connects to the Bedside Console with a safety magnetic connector on the front side.

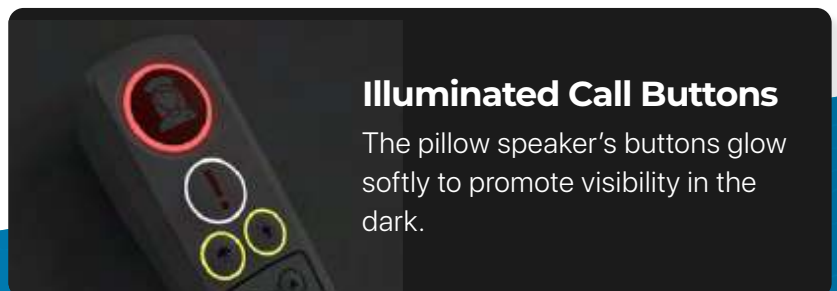


Function Buttons & Multimedia Control

Function buttons on the handset allow patients to control two different lights in the room, manage TV channels and volume. It also has two function buttons integrated according to your needs. As an example, you can assign room air conditioner control or electronic curtain control to these buttons.

Illuminated Call Buttons

The pillow speaker's buttons glow softly to promote visibility in the dark.



Patient Bed Set

LUXINFCDMGCN0001 - Wall Plug

LUXINFMGNPHS0001 - Handset

The Patient Bed Set consists of a Patient Handset and a Wall Plug. The Wall Plug features 4 programmable membrane buttons allowing nurses to signal nurse presence or make emergency or staff calls from the patient's bedside.





Magnetic Connectors

The wall plug connects to the Duty Station with an RJ45 port on the back side, and to its Patient Handset with a safety magnetic port on the front side.

Call Buttons

LUXINFCDWCCN0001 - Pull-Cord

LUXINFCDNCCN0001 - Push Button

LUXINFCDNCCN0002 - Code Blue

The Pull-cord Call Unit features backlit membrane call and reset buttons as well as a brightly colored 1,5m call cord and handle (other lengths are available).





Call Buttons

Its water resistant surface promotes hygiene and prevents splash related damage.



Connection

It connects to the Duty Station with an RJ45 port on the backside.

Light Indicator with Buzzer

LUXINFCRRGBL0001

The Light Indicator can be placed in any location where active call statuses need to be visually displayed—such as above patient room doors.

The Light Indicator is divided into 5 segments and can be programmed to either show a different color per segment, or light all segments with the same color. It features a buzzer sounder to also indicate calls acoustically.



The RGB LEDs allow for multiple color mixtures. By default, Red means active call, Green means nurse presence, Blue means Code Blue (cardiac arrest).



Nurse Station Console

ZKRUNCIPNCNP7V

The statuses of all working Call Points connected to the panel can be monitored actively. All errors and notifications shall be displayed on the information panel. Emergency codes, WC calls, and normal calls may be monitored.

Nurse Station Consoles can be programmed to automatically or manually forward calls to other Nurse Stations.

- 7" HD Touch display
- Full duplex
- SIP protocol
- PoE (Power Over Ethernet) and 110-240v
- Conference call
- Real-time nurse monitoring
- Call priority depending on level of urgency
- Automatic network checks
- Easy configuration



Real Time Location Tracking

ZKR RTLS services work integrated with Infinity Nurse Call System, not requiring additional RTLS infrastructure.

Wristband Call Unit

ZKRUNCWRCU0300 - Call Unit

ZKRUNCWRST0100 - Wrist Strap

The unit allows wandering patients to be monitored real-time. Patients location can be promptly sent through ZKR RTLS technology. The emergency button on the unit will send a rescue call with the positioning information.

- Auto Alarm on removal
- IP67
- 2.4GHz Frequency
- 1 year batter life



Staff Badge

LUXINFNBBLBG0001

Staff can monitor Calls and Emergency codes they are assigned to. They can also initiate emergency codes wirelessly.

Battery: 3.3V 320mA (1 week capacity)

LCD: 1.3" OLED

Keypad: Antimicrobial Surface

Charging Port: USB Type C

Frequency: 2.4 ghz

- OLED Screen
- Code White Call
- Code Blue Call
- Menu / Controls
- Menu / OK



Comfort & Versatile Series

The Comfort & Versatile product families includes a wide range of products that have easy integration with each other. Inter-compatible products enable us to offer more flexible solutions to meet our customers' requirements.

Comfort VoIP Patient Handset

ZKRUNCIPCNFHND001

With voice communication, patients can speak directly to the nurses assigned to them.

- PoE (Power Over Ethernet)
- PBX
- Full duplex
- SIP protocol
- Conference call
- Function control within the room through Building Management System integration
- TV channel and volume control
- Internal and external call (with tracking system for billing)



Pro Patient Handset

ZKRUNCIPHS10200

The Pro Handset is designed to inform the staff of the patient's condition immediately.

- Easy-to-clean, responsive membrane keypad
- Works though connection to Bedside Call Unit
- TV channel and volume control
- EL lights allow visibility in the dark
- Function buttons help to control room lighting, reading lamp, window blinds, etc.



Basic Patient Handset

ZKRUNCIPHS10100

The Basic Patient Handset allows the patient's condition to be reported quickly to the hospital staff in an emergency situation.

- Easy to use
- Works through connection to bedside call unit
- LED back lights allow easy use in the dark
- LEDs stay lit when there is an active call until a nurse responds



Bedside Call Unit

ZKRUNCIPWL10100

The Bedside Call Unit is used in patient rooms. There are backlit call and cancel buttons on the unit. In an emergency, a patient uses the call button to make an emergency call which appears as an alert on the Nurse Control Panel. Typical locations for this unit are on the walls of patient rooms and living areas as needed.

*Code Blue Unit ID: ZKRUNCIPCDBL101

*Custodial Cell Call Unit ID: ZKRUNCIPWL10200



Pull-cord Call Unit

ZKRUNCIPWC10100

The Pull-cord Call Unit is used in patient bathrooms or similar areas. There is a backlit cancel button and an emergency call pull-cord on the unit. In an emergency, a patient pulls the cord making an emergency call. This appears as a WC Emergency Call on the Nurse Control Panel.

The system gives priority to WC Emergency calls and they appear before other calls.



Versatile Plus Room Control Unit

ZKRUNCIPRMCN130 – 110-240v

ZKRUNCIPRMCN140 – PoE

This device ensures communication between Nurse Control Panel and Call Units. It is suitable for flush mounting. It features a 5" touchscreen and built-in RFID card reader, which nurses use to verify their identity when responding to calls. All cards read by the unit are checked for authorization.



The Room Control Unit can be used to initiate and terminate emergency code calls (Code Blue-Cardiac Arrest etc.), assist calls, consultation calls, and voice calls to the Nurse Control Panel.

It allows routine controls the staff to use their cards to log into the room without an active call. The unit logs all activities to the server with timestamps and ID information. If the server connection is interrupted, the Room Control Unit will independently log up to 99 calls until server connection is reestablished.

Text Panel

ZKRUNCIPTXTPNL18

The Text Panel is a scrolling 15-character dot matrix screen. It works as TCP-IP on the network, displays the calls as text, and gives audio alerts. Based on preference it can be set to display only specific types of calls or all calls. It works with 110-240v.



Senset 3 Input Module

ZKRUNCIPIZLMOD1

Provides interface with various external equipment such as ECG Patient Monitors or Saline Solution bags to track the quantity of remaining Saline Solution.



Function Control Module

ZKRUNCIPRMLK100

Provides control of On/Off for two different functions within the room (such as reading lamp or window blinds) from the patient handset.



Mifare Card

ZKRTNCPRSCRD001

Mifare Personnel Cards are used in ZKR Nurse Call Systems to verify personnel permissions for the operation of Room Control Units and access to the initiation of Code Blue and other important calls.

Software & Integration Solutions

Central Monitoring Software

The ZKR Central Monitoring Software is a web-based monitor that observes all activities such as nurse calls, code blue (and any custom emergency codes), assist calls, and nurse presences throughout the hospital. It can show picture IDs of personnel that are present in patient rooms.



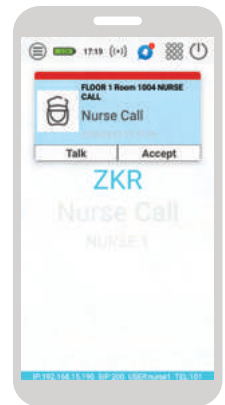
Different parameters (call type, department, and floor info) can be filtered based on needs. In this way, the focus of health personnel can be directed and reaction and intervention times can be minimized.

MCW: Mobile Communication Wizard

This mobile application was designed to simplify communication and allow personnel quick and easy access to patient information.

Teamwork

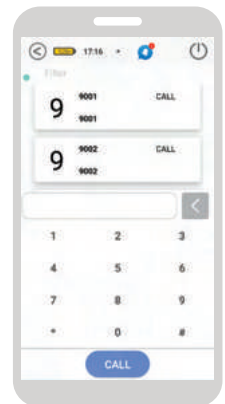
Calls from patients appear onscreen instantly. Teamwork reinforcing details such as which nurses received the call notification and which nurse accepted the task of physically responding to the call can be resolved with the press of a button. All of these details are logged on the server and can be reviewed by the administration in terms of personnel performance and patient care.



All in One Solution

MCW can be SIP integrated with the hospital PBX. With this integration, it can be used as;

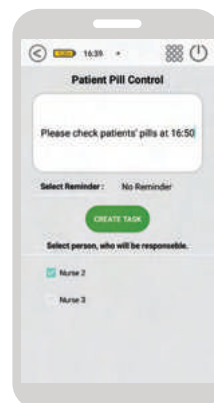
- Telephone for personnel to make voice calls among themselves
- VoIP Nurse Call device for personnel to answer calls from patients
- Announcement microphone for nurses to make announcements to defined numbers with a single button



Text Messages

Personnel can send and receive text messages among themselves through MCW.

They can create tasks for other personnel, and monitor the completion status of these tasks. In this way, work can easily be organized and tasks can be distributed among personnel.



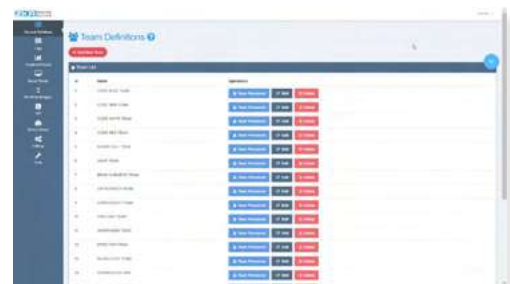
Logs and Reporting

Our web-based server interface allows your hospital to access the server settings and event logs from anywhere on the hospital network.

A web browser opens on a computer on the same network as the server. Type the server's IP address. After logging in, technical personnel can define rooms and teams on the server without pausing the system.

Hospital administrators can filter and view call logs with all relevant data including call type, timestamps, nurse response, time elapsed for nurse presence. Thanks to our RFID-based system and our BLE identification badges, managers can see which nurses answer the most calls and how they spend their time. All this data is displayed as easy-to-read graphical reports to help the hospital decide how best to manage its resources.

In case of a software update or configuration change in the system, we can provide support via remote connection to the server. You no longer need to spend time and resources on technical support.



ZKR Application Server

The server controls the operation of ZKR Systems. The server provides log reporting via a web interface and provides integration with other systems used throughout the building.



Application Server M30

ZKRUNCIPSR10300

Software supporting up to 30 rooms

Application Server M150

ZKRUNCIPSRM0150

Software supporting up to 150 rooms

Application Server M500

ZKRUNCIPSRM0500

Software supporting up to 500 rooms

Application Server M50

ZKRUNCIPSR10400

Software supporting up to 50 rooms

Application Server M250

ZKRUNCIPSRM0250

Software supporting up to 250 rooms

Application Server M1000+

ZKRUNCIPSRM01000

Software supporting unlimited rooms

Integration Software

With ZKR Integration Software, integration with different systems used throughout the Hospital can be established. These software were developed to improve the hospital's service quality, improve time management and minimize future costs.

Middleware Functionality

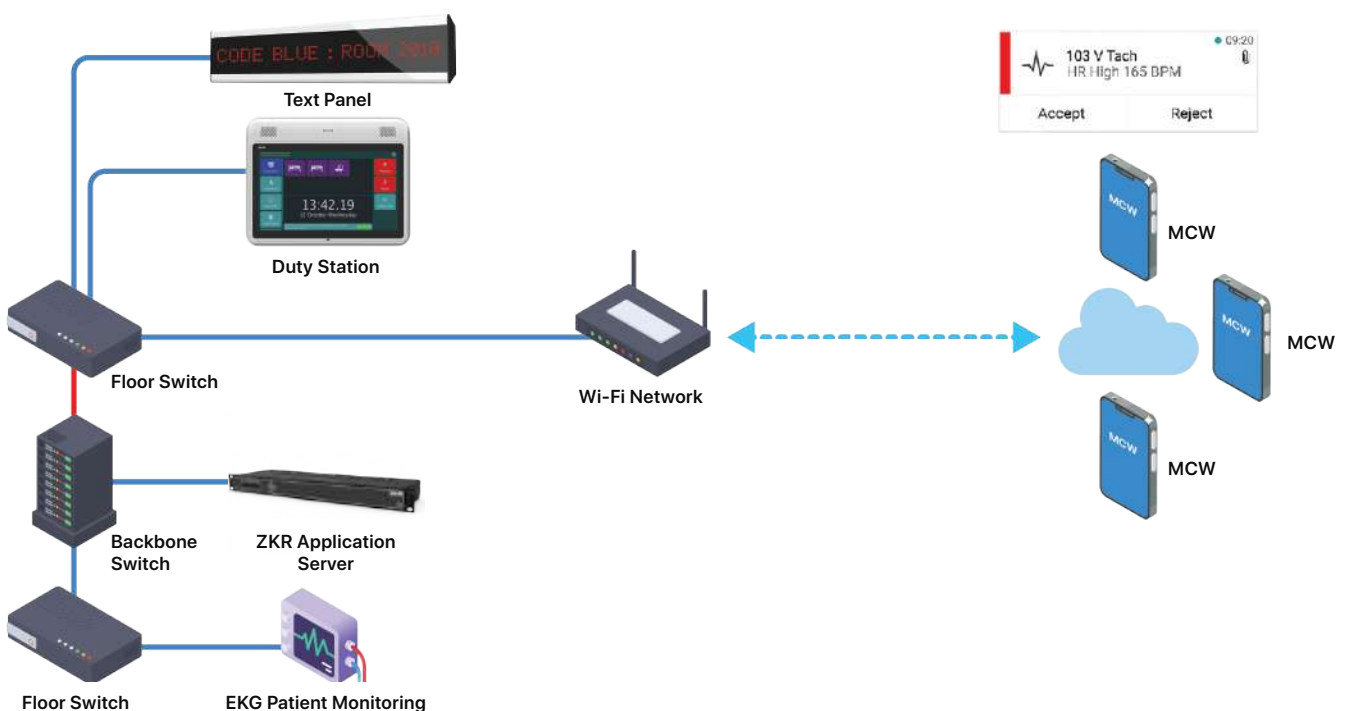
The ZKR system can act as middleware for multiple different systems. It allows all integrated systems to communicate with each other to reach their full potential in terms of functionality. All integrated systems can be monitored from a single operation center screen.



Patient Monitoring Integration

Integration with patient monitoring devices such as the Saline Solution Controller, which automatically notifies nurses when saline solution is low, or Pressure Pads that allow configurable automatic alarms to be sent to nurses when a patient leaves/falls from their bed. Medical devices such as EKG/EKG monitors can also trigger automatic emergency calls when alarming.

Supported protocols: TCP/IP, IP HL7, Rest Web Services

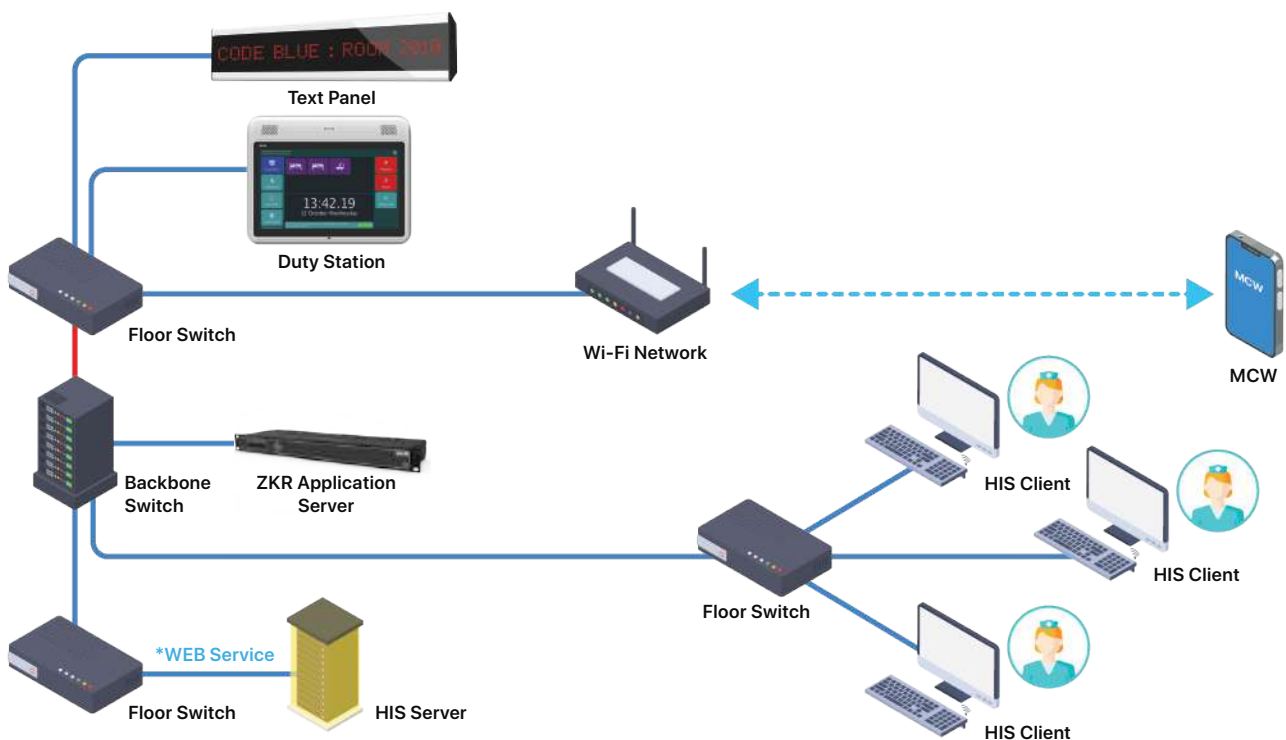


Hospital Information System

Integration with the Hospital Information System allows the demographic data, lab results, and EMG unit alarms relevant to call initiating patients to be displayed on the Room Control Unit screens, Nurse Control Panels, or even the MCW mobile application.

This integration also allows nurses to view information such as allergy notes about the patient simply by pressing his bed icon on the Room Control Unit. Interactive hospital meal menus from HIS can be placed in the Room Control Units allowing the patient or their attendant/companion to easily order meals for the patient directly from the Room Control Unit touchscreen.

Supported protocols: IP HL7, Rest Web Services



PBX Integration

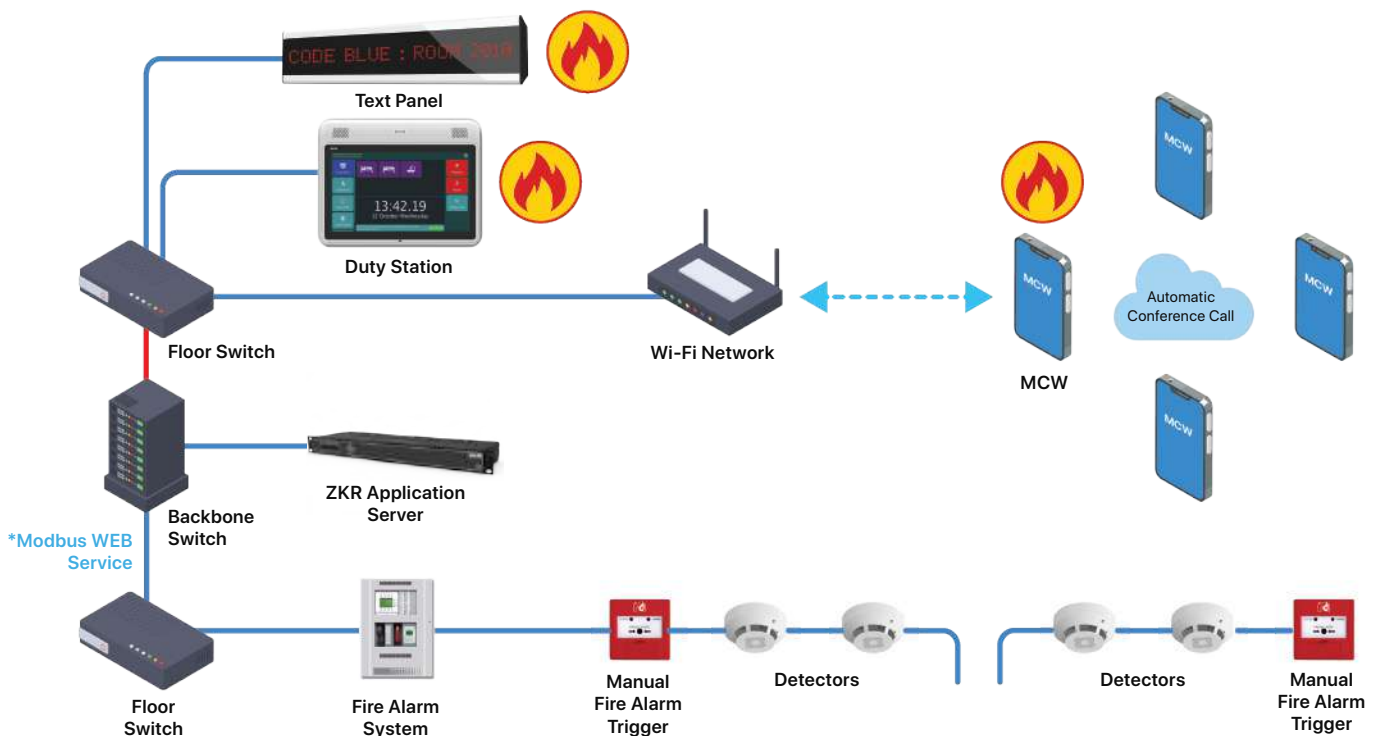
Integration with the hospital telephone switchboard to allow for Internal and External calls from patient handsets with automatic billing, and initiation of various custom emergency codes from any telephone in the hospital (eg. 2222 for code pink: child abduction, etc.)

Supported protocols: SIP, Analog FXS

Fire Alarm Integration

Integration with Fire Detection Systems allows the system to show the origin of the alarms on the nurse control panels of relevant zones and send this information to the communication devices (the MCW mobile application, pagers, DECT phones, and WiFi phones) of the personnel that need to know. The system can also automatically trigger conference calls for Fire Safety teams on MCW allowing clear communication for faster safer response plans.

Supported protocols: Rest Web Services, Modbus IP



Infant Tracking Integration

Integration with Infant Tracking Systems allow an alarm to be sent to relevant nurse control panels and communication devices of relevant personnel when a baby is taken out of "safe zones". This can be combined with Access Control System integration if available to lock down specified areas of the hospital automatically when the infant alarm is triggered.

Supported protocols: Rest Web Services, Modbus IP

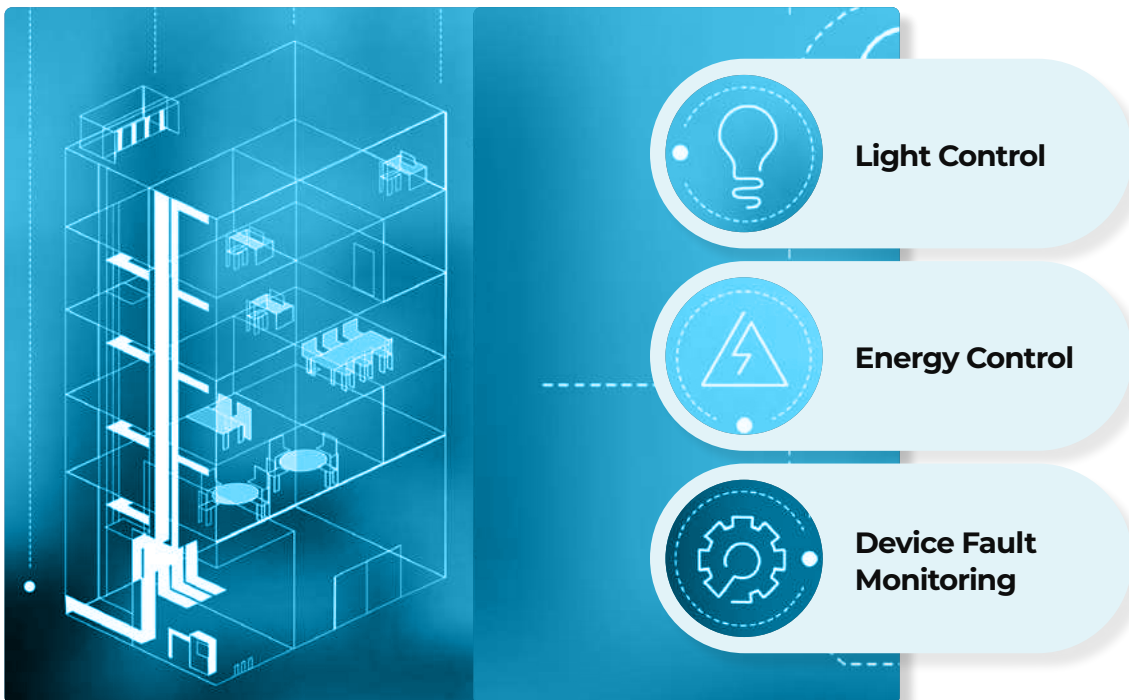


Building Management System Integration

Integration with Building Management Systems such as lighting automation allow the Intelligent Healthcare Communication System to automatically turn on the lights of corridors where a nurse call is triggered, helping nurses reach where they are needed.

When combined with HIS (Hospital Information System) integration, we can automatically cut power to empty rooms in the hospital and turn on the power to these rooms when a patient is booked to them in the HIS, saving power and money for the hospital.

Supported protocols: Rest Web Services, Modbus IP



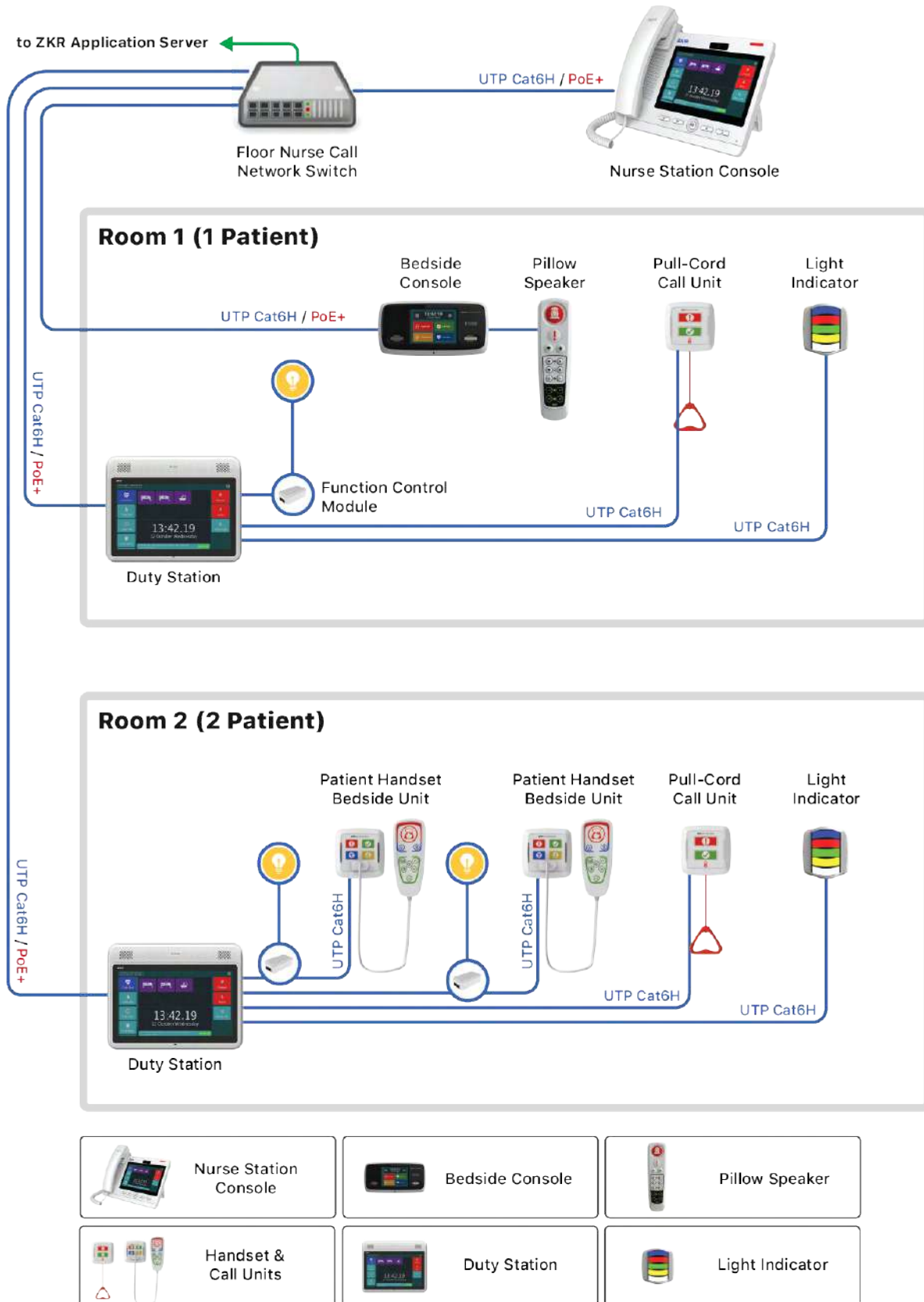
Public Voice Address System Integration

Integration with general and emergency voice alarm systems allows you to make SIP-based announcements to selected zones through VoIP enabled Nurse Control Panels.

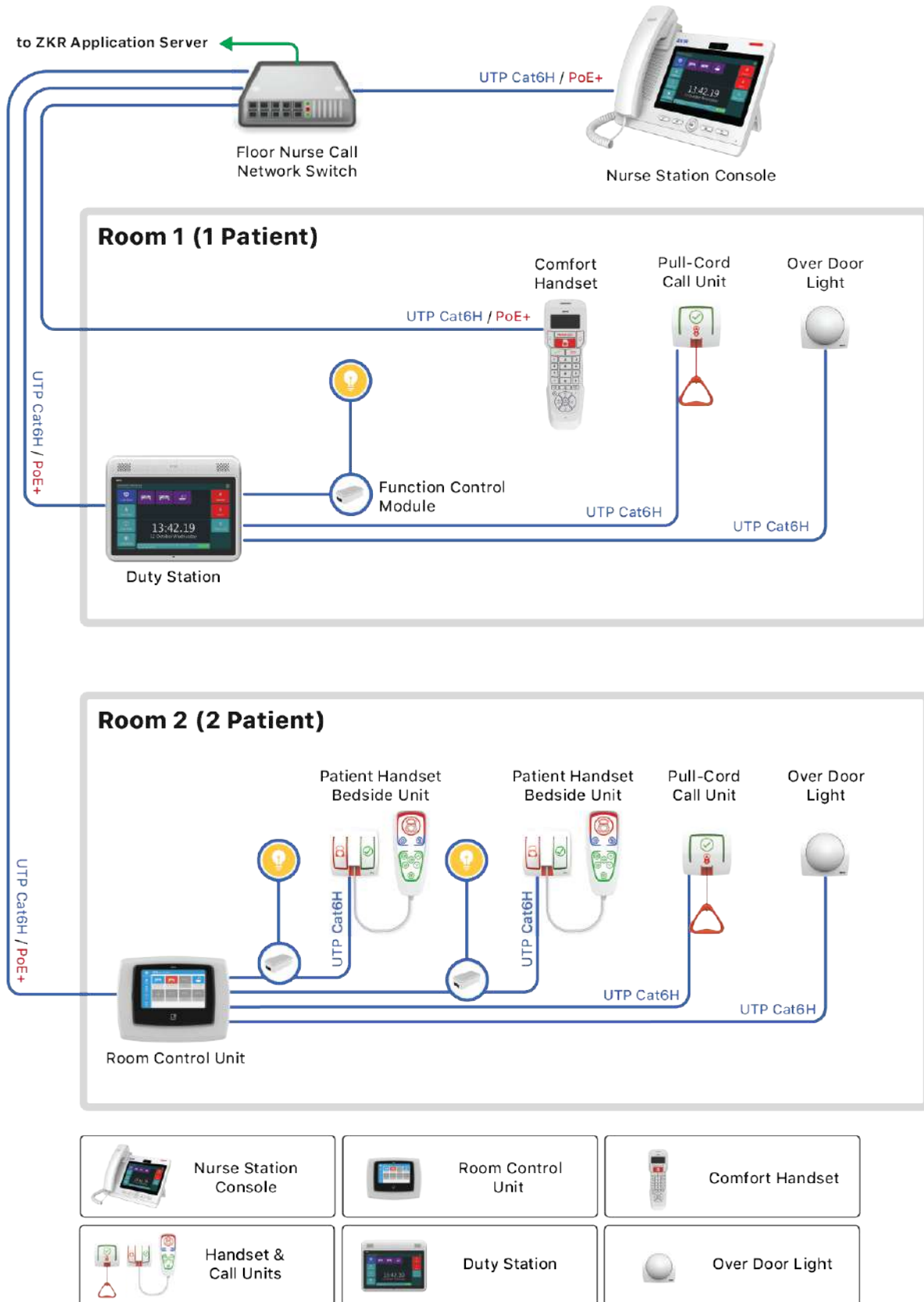
With this integration the hospital doesn't need separate expensive microphones for these announcements, because they can be made through the built-in handset of the Nurse Control Panel.

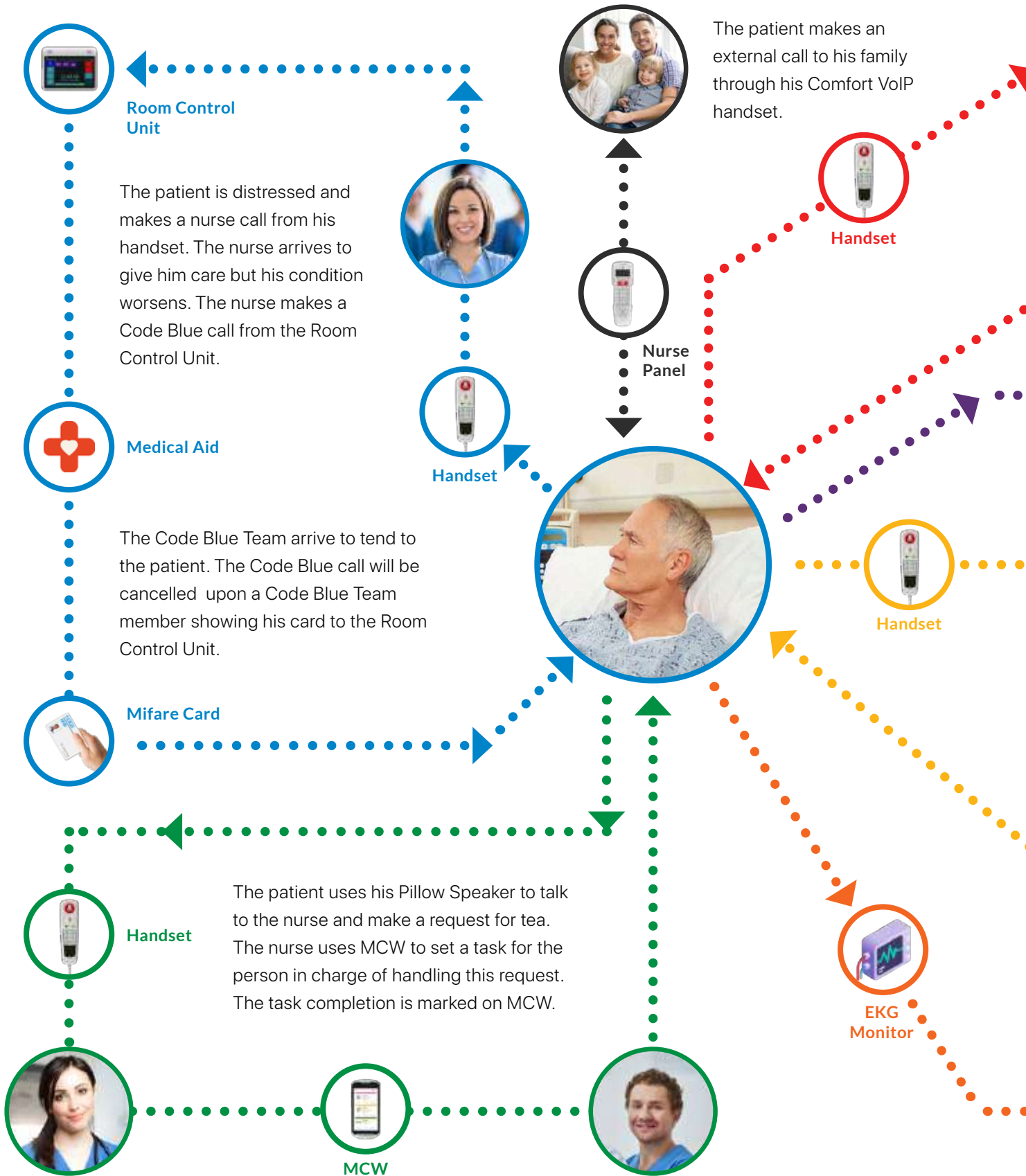
Supported protocols: SIP

Infinity Block Diagram



Comfort and Versatile Block Diagram







The patient makes a nurse call from his handset, but the nurse assigned to him is busy. The patient's call is automatically forwarded to another nurse who accepts the call on her MCW handset. The nurse speaks to the patient, calming and reassuring him as she goes to his aid.



The patient makes a nurse call from a Pull-cord Call Unit. The nurse receives the call. After she provides care for the patient, the nurse shows her card to the Room Control Unit as she leaves the room.



The patient makes a nurse call from his handset. The nurse receives the call and realizes she will need an assisting nurse. She calls for assistance from MCW. The other nurse comes to help, and after they provide care for the patient together they can show a Mifare to the Room Control Unit as they leave the room.



The patient's vitals on the monitor show a critical situation. The senset module picks this up and immediately triggers a call to MCW. The nurse receives the call and comes to the patient's aid immediately.





NOI Technologies

Smart Healthcare Solutions

Over 800 systems installed worldwide.
Over 45 million patient served.



Bilkent Integrated Health Campus
3660 Bed Capacity



Basaksehir Çam and Sakura City Hospital
4912 Bed Capacity



Etlik Integrated Health Campus
5010 Bed Capacity



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