



UNITI.Asia

Smart Hospital Solution



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Smart Hospital



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01 What are the problems patients encounter when going to the hospital?

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03 What are the advantages and highlights of these systems?

01

Project overview



Project overview

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- Resources are unevenly distributed, can't make full use of doctor experts. 30% big cities concentrate 80% of high-quality medical resources.
- Difficulties in collaboration across departments
- Low efficiency of medical assistance in emergencies



Government:
Uneven distribution of resources

- Shortage of medical practitioners and shortage of high-quality expert resources
- Difficulties in clinical teaching and seminars in hospitals, teaching between hospitals and schools.



Hospital:
Urgent need in cultivating experts

- Long time queuing for registration, for medical treatment and payment, short time for seeing the doctor
- High-quality medical resources in underdeveloped areas are in short supply, and hospitals cannot keep patients with serious diseases, which increases the cost of medical treatment for patients.



Patients:
Difficult to see a doctor, especially famous doctor

- Due to the imperfection of the public medical management system, it brings a lot troubles to people. Especially“ **low-efficiency medical system, poor-quality medical services, difficult and expensive medical treatment**” are the main focus of social attention. Large hospitals are overcrowded, community hospitals are unattended, and patients have cumbersome medical procedures.
- These problems are all caused by poor medical information, polarization of medical resources, and incomplete medical supervision mechanisms, which have become important factors affecting the harmonious development of society.
- Therefore, we need to establish a smart medical platform system to **enjoy safty, convenience and high-quality diagnosis and treatment services**. Fundamentally solve the problems of "difficult to see a doctor and expensive to see a doctor".

Industry status

【Development status】 -Started late, the threshold of information technology in hospitals is relatively low, and the market concentration is low

【Industry pain points】 -Poor experience, high learning cost, and difficult in data exchange

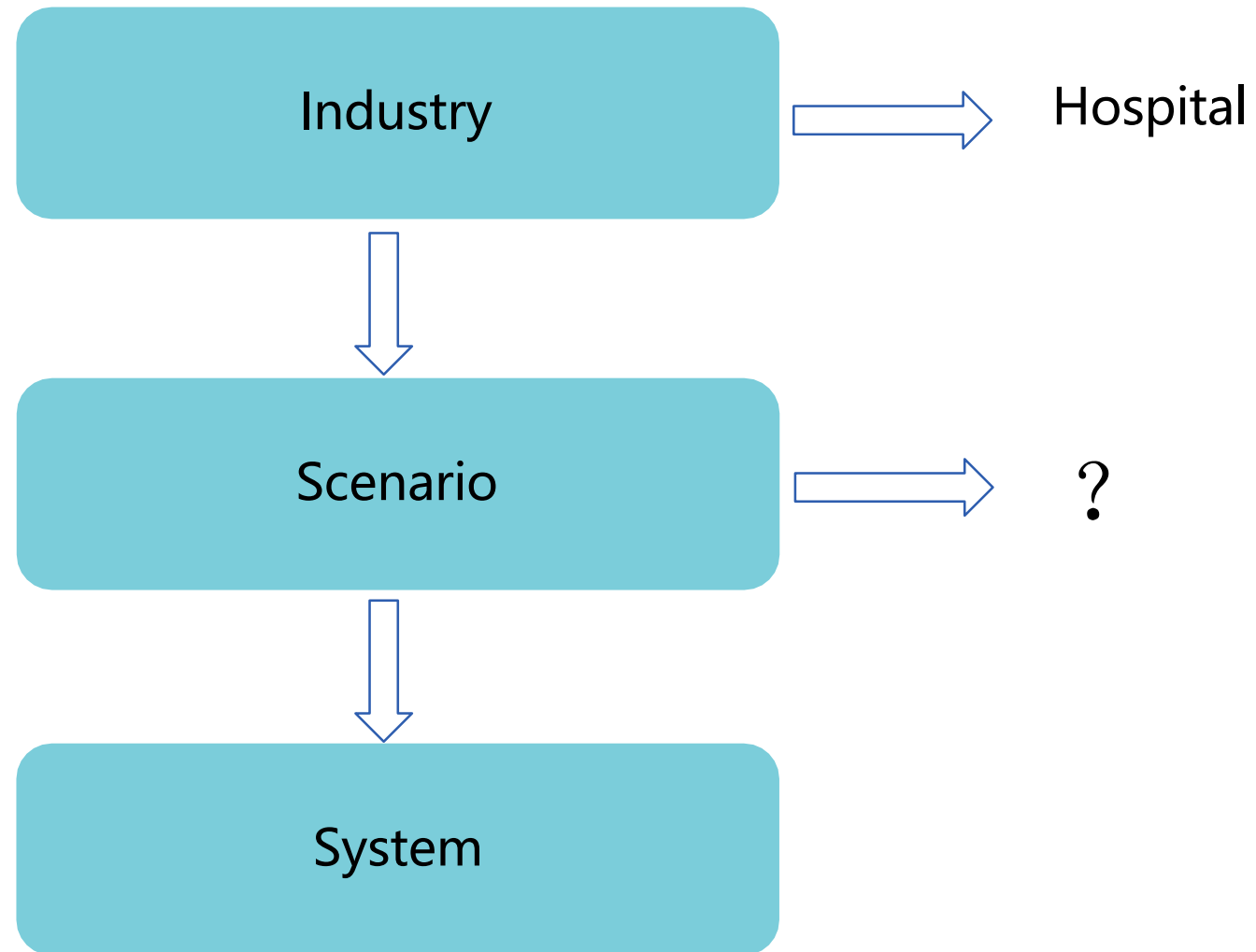
Poor experience: At present, the medical system is difficult to meet the needs of "employee experience" and "patient experience".

high learning cost: The learning cost of information technology is high.

Difficult in data exchange: The data standards of different departments and systems are not unified and the data security issues cause "data islands".

02

Design concept





Design concept

Public area



- Public address system
- Meeting management system
- Information release system
- Smart building system
- Queuing management system

1

2

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Command center



- LED screen system
- Sound system
- Digital audio conference system
- Visual Management System
- Video conferencing system

3

Smart
hospital
solution

4

Outpatient department and inpatient department

- Medical guidance and triage system
- Medical intercom system
- Master clock system
- ICU visitation system



Lecture hall/multi-function hall



- LED screen system
- Sound system
- Digital audio conference system
- Central control & matrix system
- Stage lighting system
- Stage machinery, stage curtain system
- Simultaneous interpretation system

Meeting room



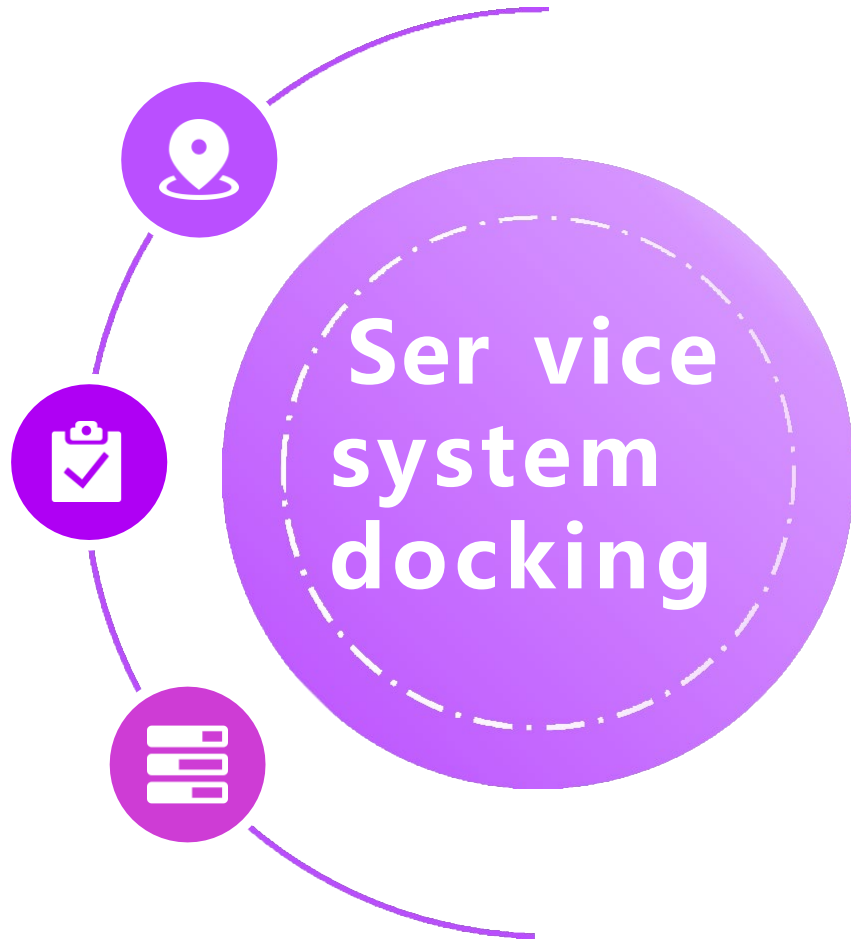
- LED screen system
- Sound system
- Digital audio conference system
- Central control & matrix system
- Paperless conference system
- Video conferencing systems

5

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Other construction sites also include
surgical teaching classrooms, remote
consultation rooms, training rooms,
etc.



HIS System

Definition:

HIS system is a comprehensive information system designed and developed for the management and operation of hospitals. The modules include: outpatient management, inpatient management, pharmacy management, drug storage management, dean inquiry, electronic prescription, material management, media management, etc.

LIS System

Definition:

LIS system is the full name of laboratory information management system, which is specially designed for hospital clinical lab. The core function is to obtain information from various inspection instruments, and then generate inspection reports to HIS system.

EMR System

Definition:

EMR system, full name of electronic medical record system, contains a series of medical information about an individual's lifetime health status and medical care behavior, including disease course records, test results, doctor's orders, and surgical records, etc.

PACS System

Definition:

PACS, full name of picture archiving and communication system, is a set of information system specially designed for hospital imaging department. Functions: centralized storage and make management of a variety of medical images, including nuclear magnetic, CT, ultrasound, various X-ray machines, as well as infrared meters, microscopy and other devices produced images.

03

Solution

Medical guidance and triage system

- The construction of smart outpatient service includes lobby information propaganda system, medical guidance and triage system, floor 3D navigation system, self-service terminal management system, outpatient queuing system, medical technology queuing system, pharmacy queuing system, physical examination queuing system, inter-clinic payment system, etc.
- After the construction, it can effectively solve the "Long time queuing for registration, for medical treatment and payment, short time in seeing the doctor" problems of patients before, during and after diagnosis, optimize outpatient medical order, reduce doctors' work pressure and improve patients' sense of medical experience.



- **Orderliness**
- Wisdom guidance
- Map navigation
- Wisdom triage call
- Intelligent information release



- **Work efficiently**
- One person, one number, order calling.
- Environmental improvement and efficiency improvement
- Diversion of wisdom and improvement of quality
- Orderly medical treatment



- **Diversification of information propaganda**
- Diversification of display forms
- Diversification of information release
- Information transmission and timely update
- Diversified information.

Application

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Information release terminal

Ceiling speaker

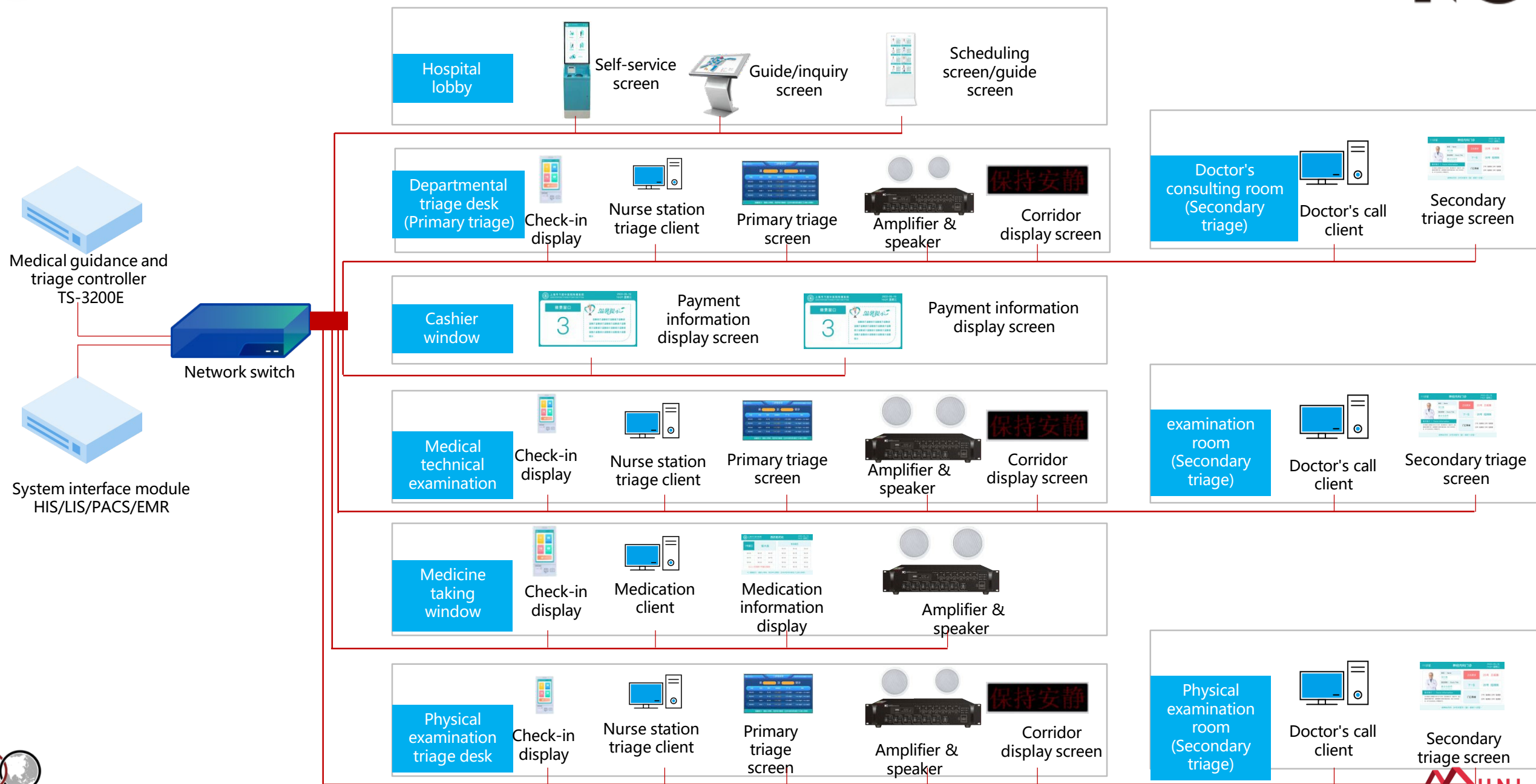
Speaker

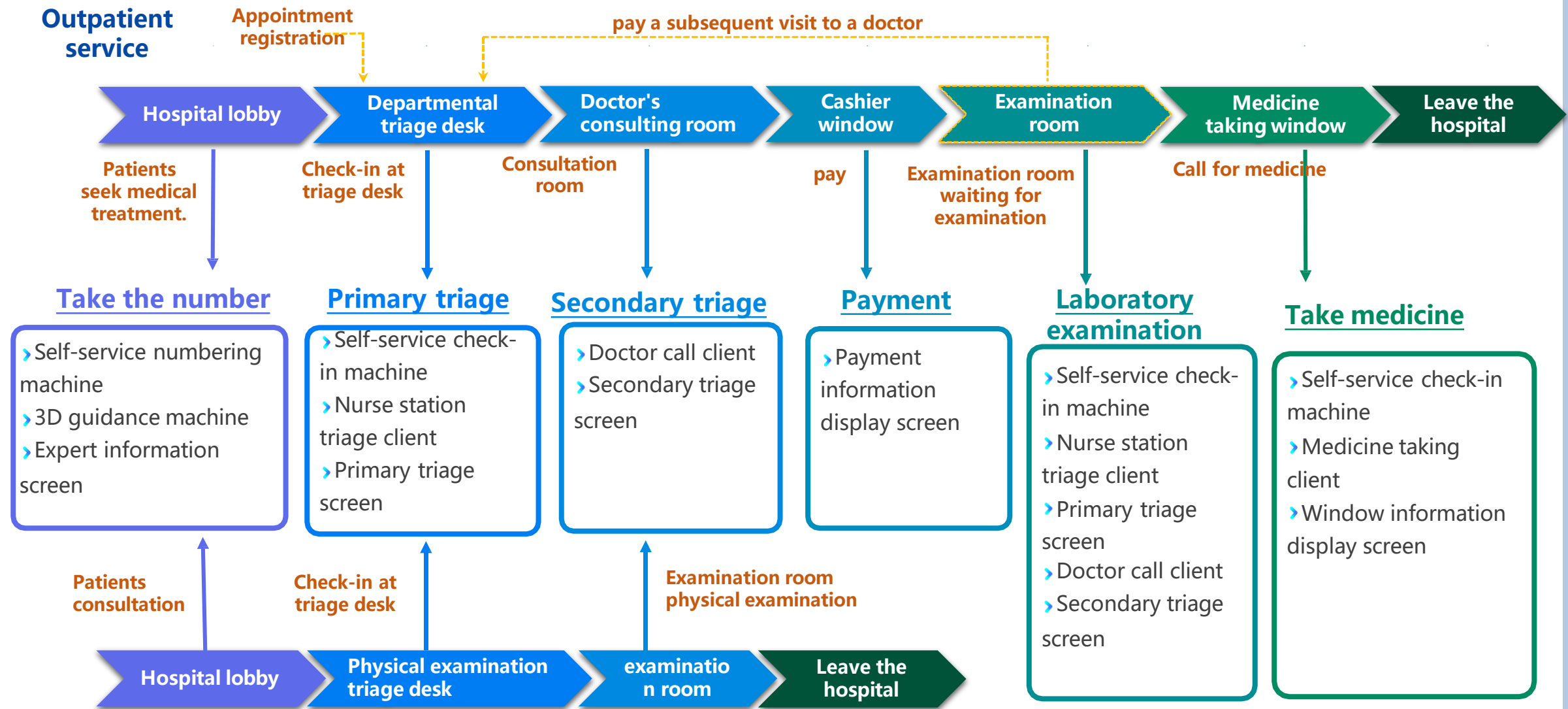


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Architecture diagram

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Check-in display

Online registration time-saving

Patients can register remotely online in advance, and the system will automatically generate the registration sign-in triage code.

After arriving at the hospital, the patients go directly to the registration screen of the corresponding department to sign in, without queuing in the hospital lobby to get the number.



A variety of sign-in methods to avoid queuing congestion.



Online check-in can save offline queuing time, shorten the process of seeing a doctor and improve the efficiency of seeing a doctor.





3D map navigation

The hospital's 3D visual guidance screen uses 3D map and indoor positioning technology to present the layout of the hospital in a three-dimensional way, and quickly establish spatial perception for hospital patients. Provide medical navigation for patients to quickly find specific locations such as outpatient clinics; Support destination search, the system automatically plans the shortest path for patients, and scans the code to get the navigation



Layout customize editing

Support to customize the color, layout style and font size of equipment templates (primary triage screen, secondary triage screen, payment window screen, etc.). Realize free shift and drop of components, reduce development and layout quickly.

Medical intercom system



Demand Analysis for Smart Ward Construction

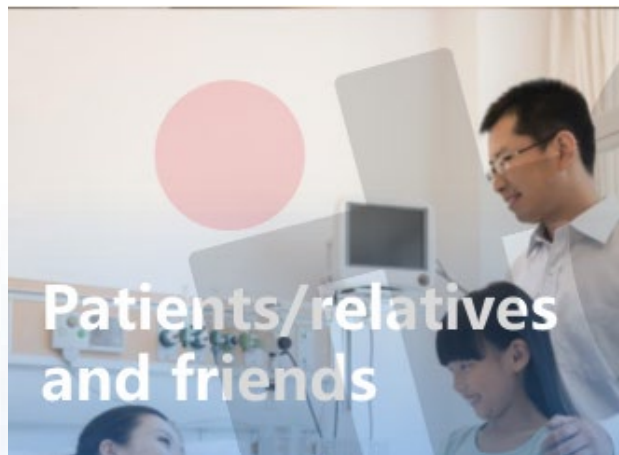
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The medical intercom system is based on IP network communication technology, which realizes the paging and intercom of patients, nurses and doctors. By integrating with HIS system, it realizes the information interaction functions such as ward information display, patient information display and hospitalization expenses inquiry.



- Understand hospital flow and set up posts scientifically.
- Visualize data presentation to improve management efficiency.
- Unified management of hospital equipment.
- Improve service quality and reduce the contradiction between doctors and patients.



- Meet the needs of medical care in time.
- Improve the experience of medical treatment and hospitalization.
- Improve the efficiency of medical treatment and reduce the cost of medical treatment time.
- Convenient digital medical treatment, reducing learning costs.



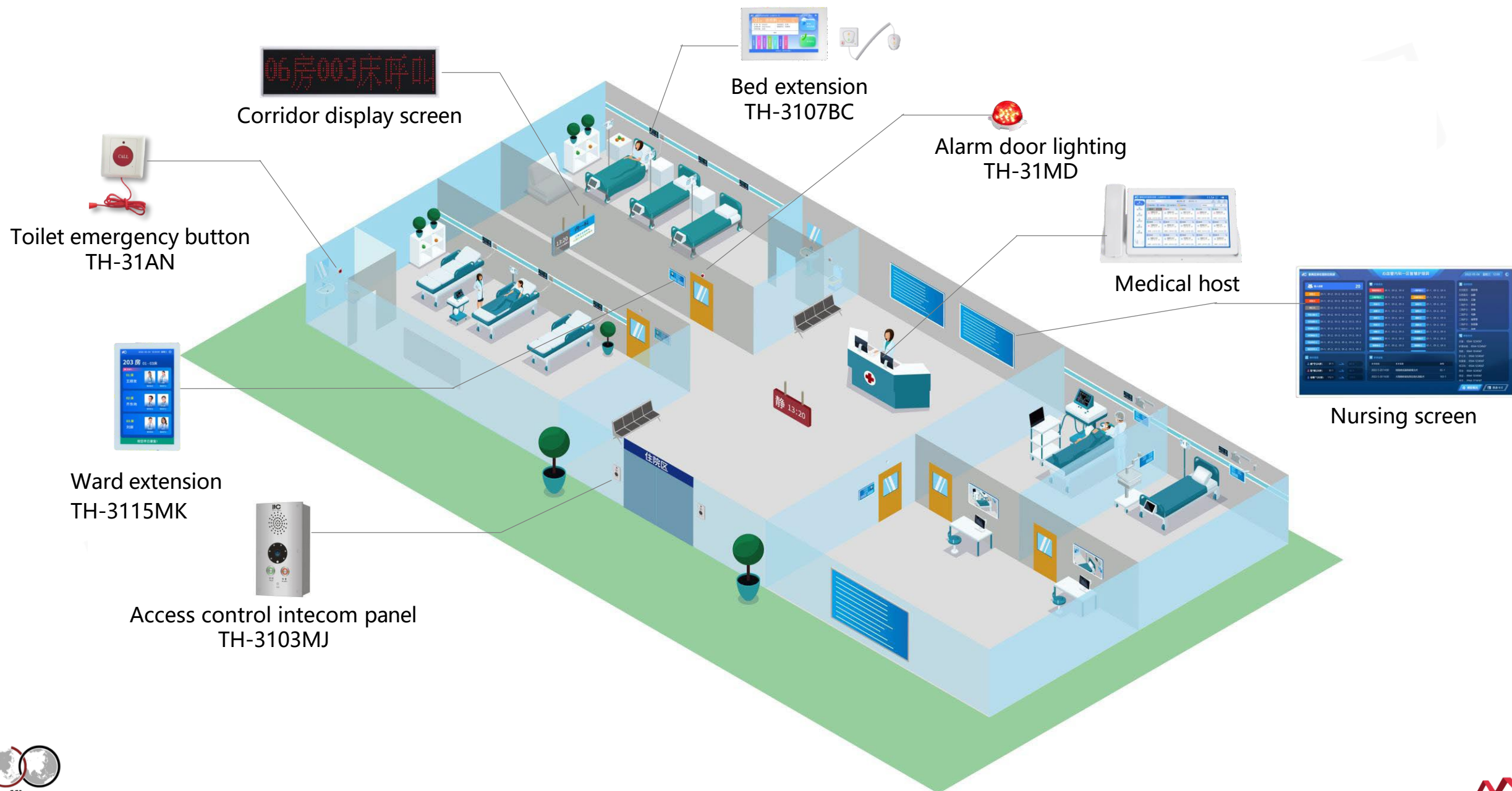
- Effectively communicate between doctors and patients and improve the relationship between doctors and patients.
- Facilitate work docking and communication.
- Improve nursing quality and efficiency.
- Reduce the labor loading.



- Equipment maintenance is convenient.
- Can locate and remove obstacles in time.
- The system has strong anti-interference ability and perfect interactive information, reduces the operation and maintenance cost.



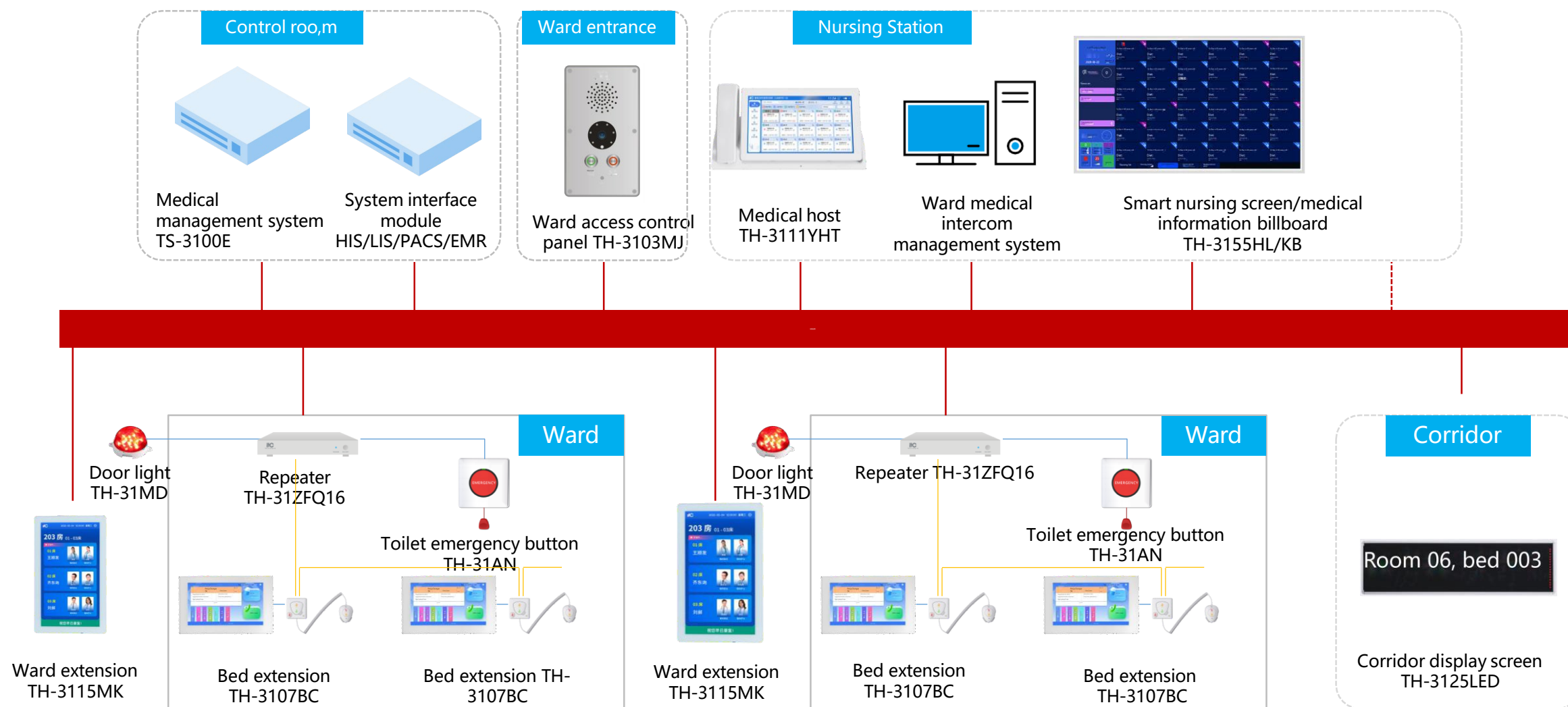
Application renderings





Architecture diagram of ward medical intercom system

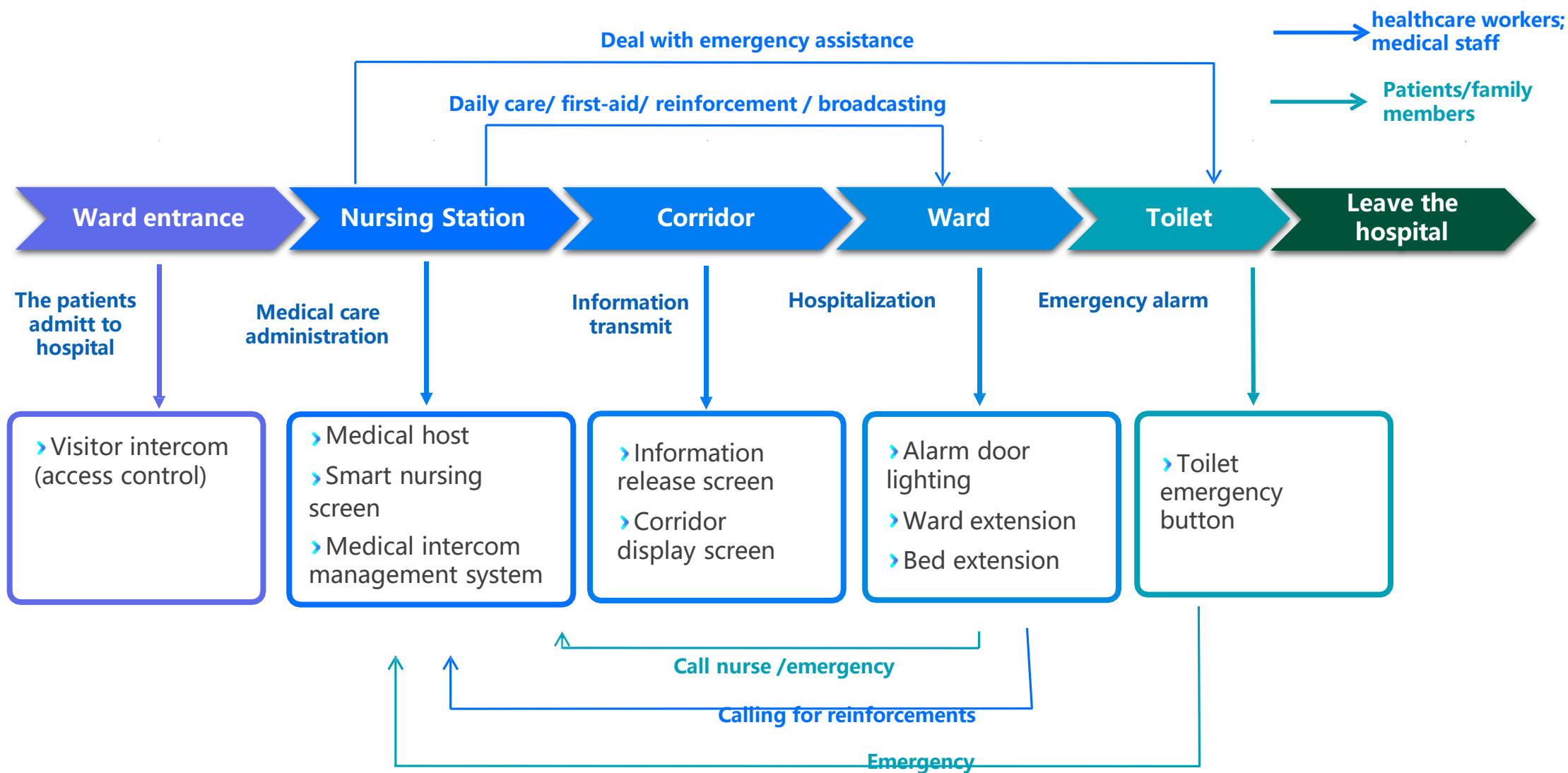
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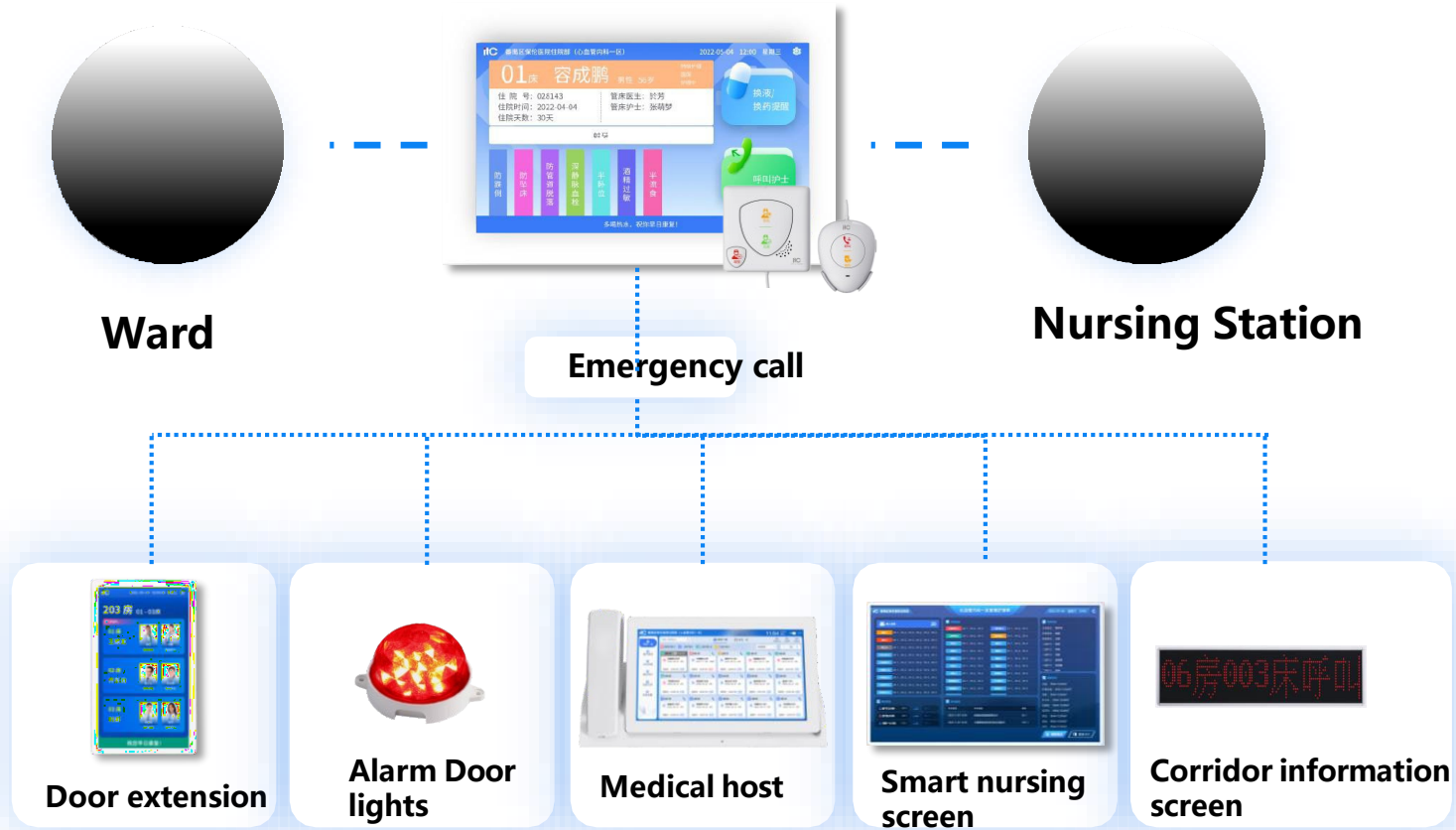


Overview of the application of ward medical intercom system

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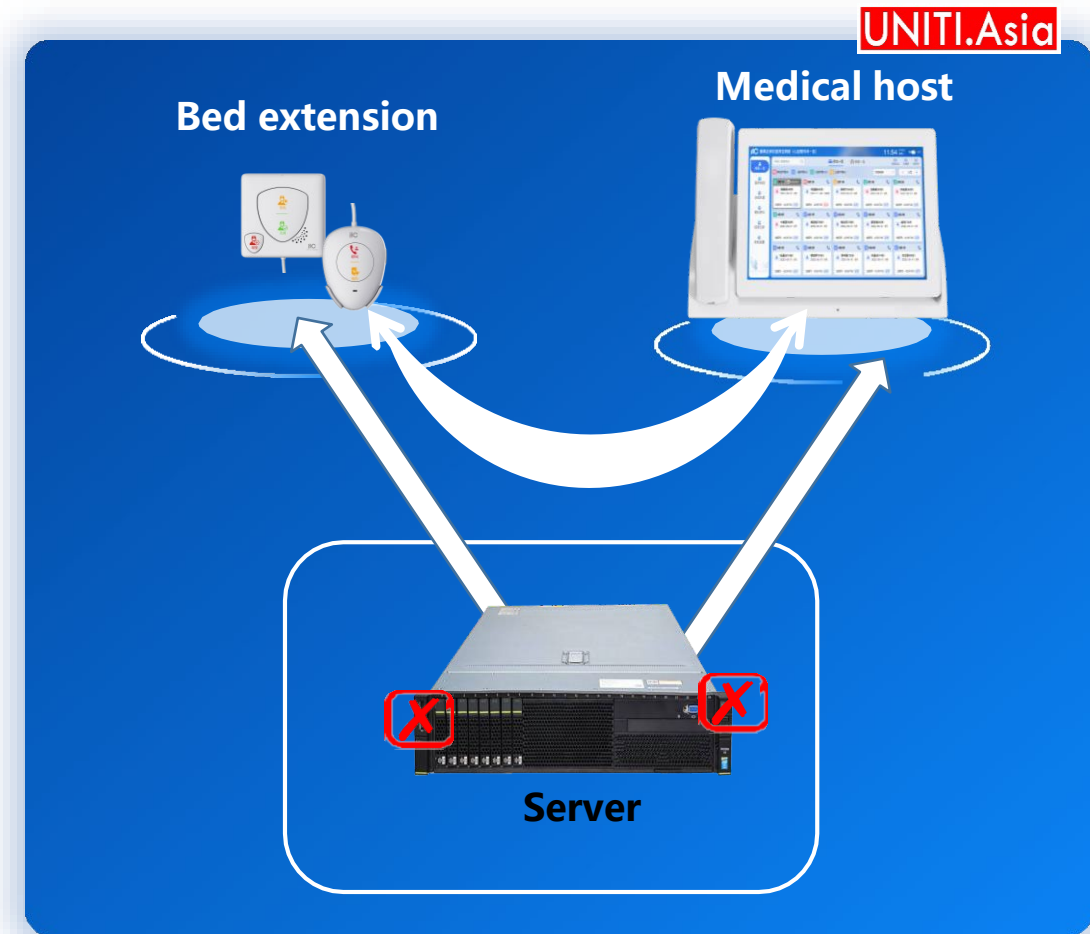
Highlights of medical intercom system



- Information display
- Lighting reminder (Three colors, always on, flashing)
- Pop-up reminder
- Pop-up reminder
- Call interface
- task list
- Call information reminder
- Scrolling display

To solve the problem of medical staff tend to ignore the call signal. It can respond at the same time through the door screen, the alarm door light, the medical host, the smart nursing screen and the corridor information screen, and inform the medical staff in a multi-dimensional and all-round way through the pop-up, task list, lighting state, etc., thus forming the trend of bonfire linkage, so that patients can get timely assistance from the medical staff.

Fiberhome linkage



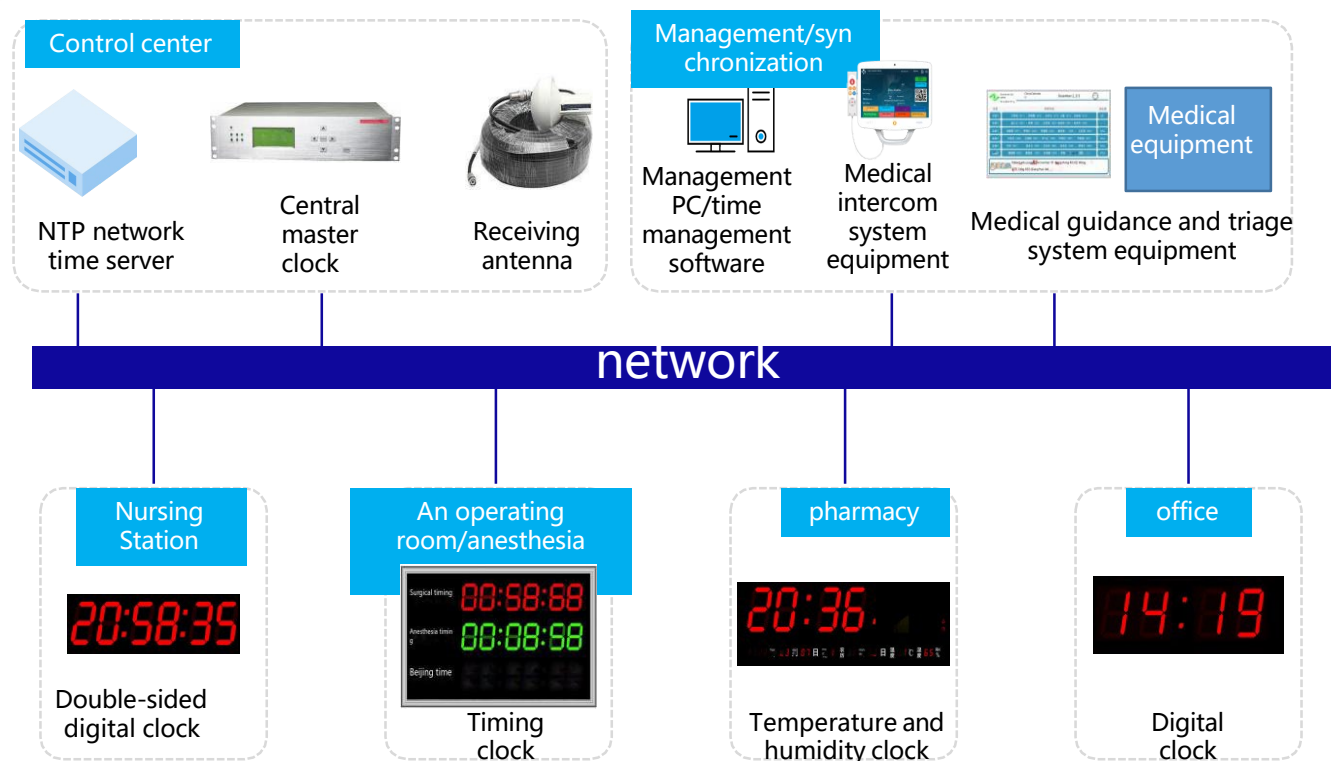
Off-line intercom

Solve the pain point of communication interruption caused by unstable server operation. When the server is disconnected, it supports the offline intercom function to ensure that patients can call medical care at any time and ensure the safety of patients.

Master Clock System



System Function



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Corridor, nurse station



Lobby



Waiting area



Duty room, control room and operating room



meeting room



Other places

•As a time display unit, the display clock can be configured in the halls, corridor, offices and functional departments of the hospital.

•The slave clock receives the time signal of the master clock by network NTP or serial port message, and provides time display, timing, temperature and humidity display and other services for ICU, CCU, DSA, operating room, imaging center, emergency room, rescue room, hemodialysis room, anesthesia room, recovery room, observation room, ward nurse station and other medical places.

ICU visitation system



ICU visitation

- Interconnected with ICU wards, family members initiate visits, nurses transfer visits, and family members and patients conduct real-time visual intercom.
- Interconnect with hospital HIS system, and automatically update patient data and doctor's advice information.
- Medical staff can monitor, force in and force out the whole process, reducing the burden of hospital visit management.
- The remote visiting service can be expanded, and the hospital can charge by time/per visit to realize the operation of remote visiting.

Hospital public areas

>> Hospital public areas

Public address system



Public address system



Service consulting front desk



Ward area



Car parking area



Third-party docking (fire fighting/CCTV)

The public address system provides the hospital with daily automatic BGM, paging and fire emergency evacuation.

Background music can play different music contents according to different environments and atmospheres in different areas of the hospital, and local people can flexibly insert spots, search for people, emergency broadcasts, etc.

Emergency broadcast can realize automatic linkage alarm with the fire center, and guide evacuation to a safe place through broadcast in an emergency.

Landscape lighting system



Landscape lighting system

Landscape lighting design is an organic combination of lighting science and art, and it is an inevitable requirement for people to diversify the living environment landscape after the social civilization material reaches a certain height.

Through the lighting organization of high-level lighting, low-level lighting and landscape lighting, it shows the rich space atmosphere of the hospital and creates a beautiful and pleasant night scene atmosphere.

>> Hospital public areas

Landscape lighting system



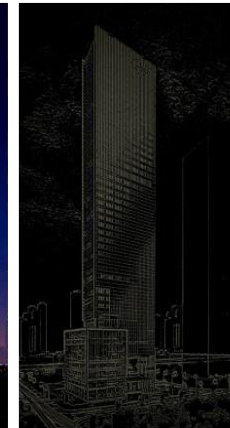
Landscape lighting



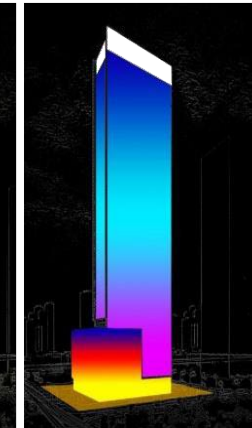
Modern factory manufacturing



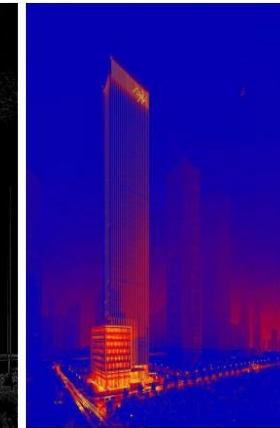
Landscape lighting design



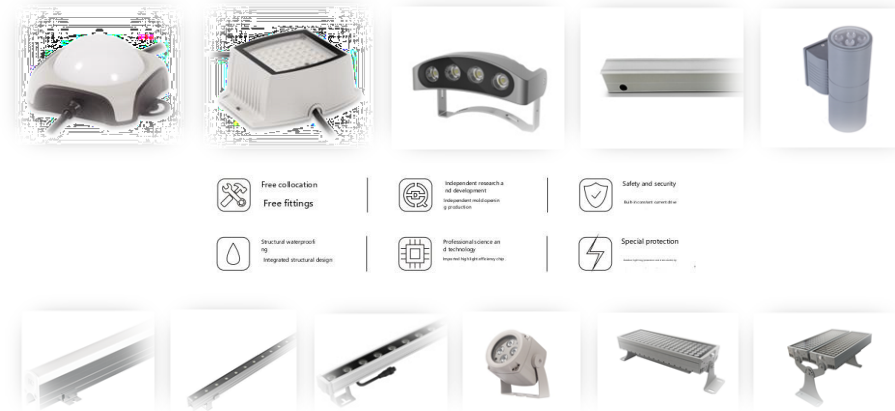
Scale design



Color temperature design



Brightness design



Selection of different lights



Medical Operation and Maintenance Data Center

Integrated operation and maintenance command and dispatch center

Remotely communicate with external mobile ambulances to conduct remote emergency rescue and improve medical emergency services.

- Joint drills on emergency management, command, and rescue plans for virtual emergencies
- Unified command and dispatch of various first aid resources to resolve emergencies quickly, efficiently and accurately.
- Scheduling, display and efficient management of all operation and maintenance data in the hospital.



Medical Operation and Maintenance Data Center



Solution of medical operation data center

“Data collaboration and one screen unified management”

Doctors remotely communicate with external mobile ambulances to conduct remote emergency rescue and improve medical emergency services.

Manage the data of medical operation center with "one screen of medical management", visualize audio and video data through intelligent computing, command and dispatch various emergency resources in a

unified manner, and solve emergencies quickly, efficiently and accurately.

- **LED screen system**
4K Ultra HD Seamless Splicing Display

- **VMS system**
Command and dispatch, visual management and control

- **HD video conference system**
Remote command conference, interconnection

- **Professional sound reinforcement system**
HD sound quality

- **Digital conference system**
Long pickup distance and high sound reproduction.

- **HD recording and broadcasting system**
Command high-definition recording and storage

Multifunctional lecture hall



Multifunctional academic lecture hall

- Small-pitch LED display system to meet various needs such as PPT playback, conference data display, performance background, etc.
- Professional venue sound reinforcement, high-fidelity sound quality, clear sound, meeting the needs of training, conferences, performances, etc.
- Easy meeting speaking, meeting functions such as meeting voting, voting, election, etc., can meet various large-scale report meetings, speeches, academic exchanges, etc.
- The recording of the meeting process is convenient for review and playback, and at the same time, it can be watched live online remotely
- Intelligent management and control of lecture hall equipment and multi-signal switching can meet the needs of different scenarios of the lecture hall.

Lecture Hall



Professional
sound system



LED screen



Meeting
management



Stage lighting



Environmental
control system



Wireless
microphone
system



5G WIFI digital
conference



Live broadcast &
recording system



Video conference
system

Smart conference room



Smart meeting room

- Hospital internal medical seminars, Electronic annotation of meeting documents, easy and efficient.
- Realize the connection of meetings between upper and lower hospitals, and the linkage of cross-department meeting information to meet the needs of daily academic discussions, disease analysis, comprehensive consultation, and live video training display.
- The meeting initiates voting, sign-in, and discussion in real time, and automatic camera tracking function.

Surgical Teaching Room



Surgical demonstration classroom

- Interconnect with the operating room in audio and video, carry out school-based training and teaching observation, meet the attention and medical discussion.
- Conduct remote surgical teaching and guidance, and deepen medical staff's cognition of standardized operation through simulated training and teaching of surgical scene.
- All-in-one teaching device meets various needs such as PPT playing, medical data display and teaching review.
- The teaching process can be recorded, for review and playback, and it can be watched remotely online.

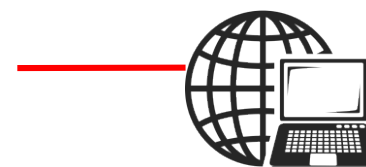
Remote Consultation Room

Teleconsultation room for experts in higher-level hospitals



Remote consultation for subordinate hospitals

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- Experts from hospitals with high-quality resources help their subordinate hospitals through remote consultation and create a medical community operation model.
- Non-destructive presentation of medical images, face-to-face consultation effect, and efficient solution of patients' pain.
- Doctors conduct remote consultations for critically ill patients who are inconvenient to move, connect with medical imaging and data systems, and record and query various information of patients at any time.
- Remote video docking with mobile ambulances, command and respond to emergency patients , improving the rescue rate of patients, and providing timely and effective hospital resources for emergency patients

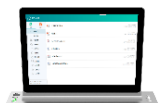
System



**Professional
sound
system**



**Fine pitch HD
LED screen**



**Paperless
conference
system**



**Speech-to-text
System**



**Environmental
control system**



**Wireless
Microphone**



**Full digital
conference system**



**Recording
system**



**HD video
conference system**

04

Application case



Selected cases of hospitals



**Affiliated Hospital of
Guangdong Medical
University**



**Affiliated Hospital of Sun
Yat-sen University**



**Chongqing Fuling Central
Hospital**



**Dongguan Donghua
Hospital**



**Tianjin Central Hospital Of
Gynecology Obstetrics**



**Guangxi Liuzhou
Hospital of Traditional
Chinese Medicine**



**Shanghai Jiangqiao
Hospital**



**Chengmai Ecological
Software Park Hospital**



**Dr. Sulaiman Alhabib Hospital
SAUDI ARABIA**



**Cancer Hospital of Inner
Mongolia Autonomous
Region**



**Cafam Hospital,
Colombia**



**Jurong Hospital,
Singapore**



Shenzhen Hospital, University of Hong Kong





Jurong Hospital, Singapore

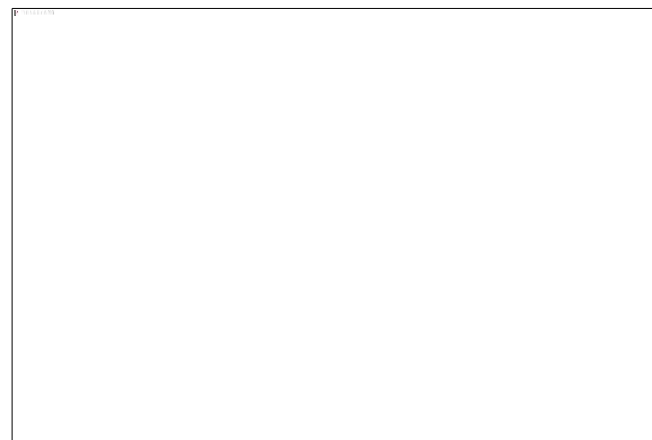
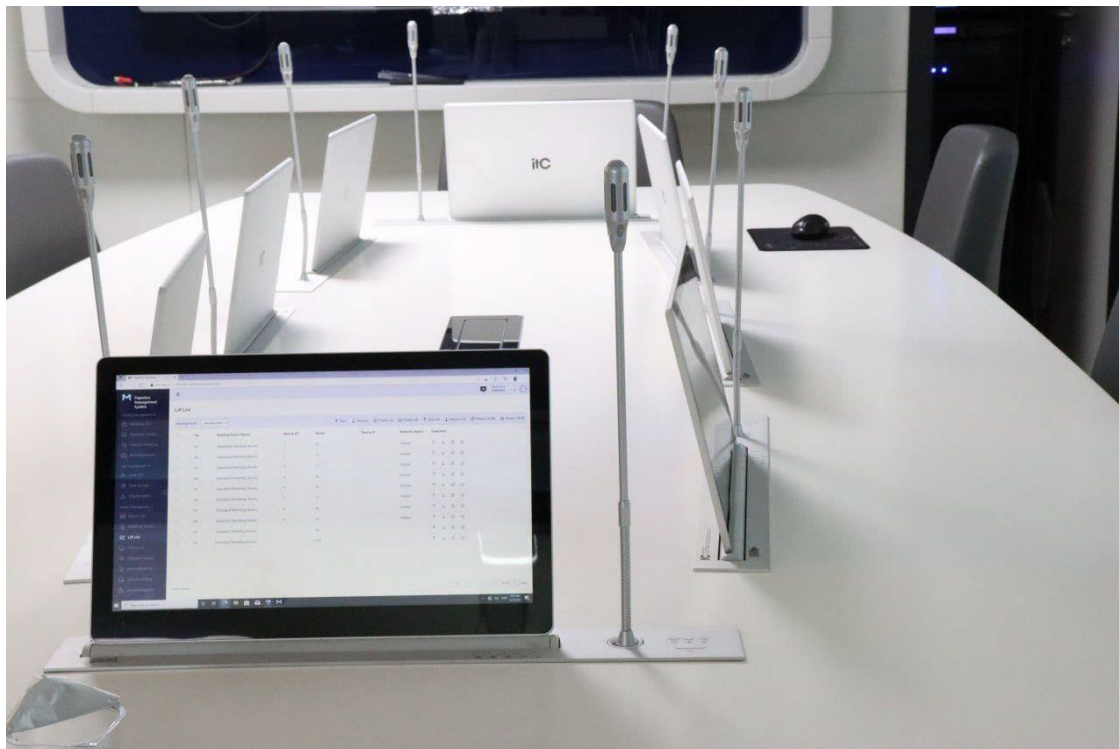




Al-saefer Hospital, Iraq

video conference camera+ sound system+paperless conference system

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Cambodia Children's Hospital Project





TAKSIM HASTANE(Hospital),Istanbul, Turkey





Peshawar General Hospital, Pakistan



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