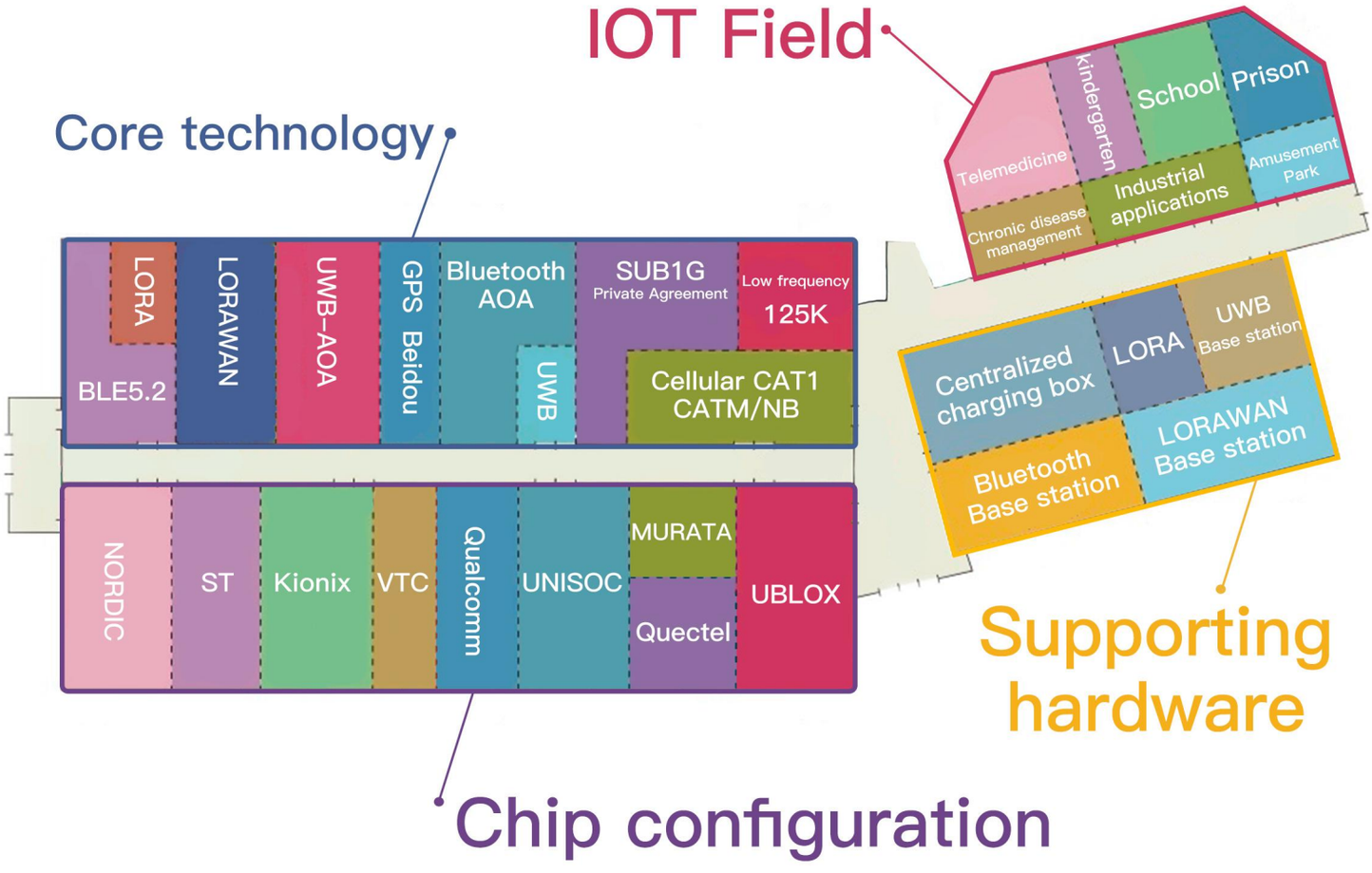
iSmarch

SMART WEARABLES +IOT FIELD

2013–2024



CENTRALIZED CHARGING MANAGEMENT WAREHOUSE

50 WRISTBANDS/WATCHES/ARMBANDS SIMULTANEOUSLY CHARGED

DESIGN A SEPARATE CHARGING COMPARTMENT FOR EACH PRODUCT

CUSTOMIZABLE TROLLEY CASE VERSION

SAFE, EFFICIENT, AND RELIABLE

Bluetooth gateway/UWB gateway/LORA/LORAWAN gateway/AOA gateway

1.TeleHealth Management Smart Watch Series

Application Scenario: Health Management/Chronic Disease Management/Remote Medicine/Home Medicine/Emotion and Stress

X6

(ECG+PPG+3-axis acceleration * 2 groups * 3-axis gyroscope+3-axis geomagnetism+vital signs)

Main functions::

1. Dynamic heart rate
2. Blood oxygen SPO2
3. ECG electrocardiogram
4. Respiratory rate/sleep/NFC/
5. Blood pressure/fatigue/pressure value
6. HRV/RRI
7. Exercise distance Calories
8. Acceleration sensor XYZ RAWDATA
9. Gyroscope sensor XYZ RAWDATA
10. Automatic calibration of batch time for bracelets
11. Bluetooth BEACON Broadcast/SOS

Cooperate with Bluetooth Gateway station function:

1. Support batch time calibration of Bluetooth Gateway stations
2. Support connecting and issuing commands to obtain body data
3. Support the display of user information on the bracelet page (4 fields including name, organization, number, etc.)
4. Support Bluetooth Gateway station push messages (each text content can be up to 50 Chinese characters long)
5. Support for storing 5 messages

X5

(PPG+3-axis acceleration * 2 groups * 3-axis gyroscope+3-axis geomagnetism+vital signs)

major function:

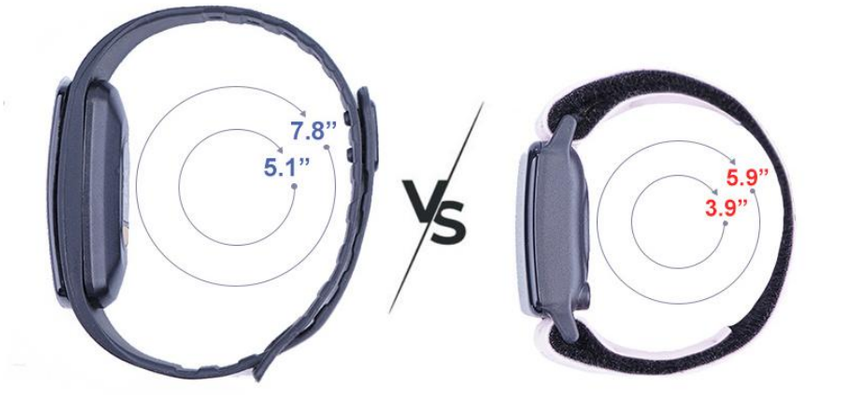
1. Dynamic heart rate
2. Blood oxygen SPO2/respiratory rate
3. Body temperature/blood pressure/fatigue
4. Pressure value/HRV/RRI
5. Exercise Distance Calories/Sleep
6. Acceleration sensor XYZ RAWDATA
7. Gyroscope sensor XYZ RAWDATA
8. Automatic calibration of batch time for bracelets
9. NFC/SOS
10. Bluetooth BEACON broadcast

Cooperate with Bluetooth Gateway station function:

1. Support batch time calibration of Bluetooth Gateway stations
2. Support connecting and issuing commands to obtain body data
3. Support the display of user information on the bracelet page (4 fields including name, organization, number, etc.)
4. Support Bluetooth base station push messages (each text content can be up to 50 Chinese characters long)
5. Support for storing 5 messages

2. Smart Campus+Smart Kindergarten Series

C1 (Minimal style, easier to wear for kindergarten+infants)



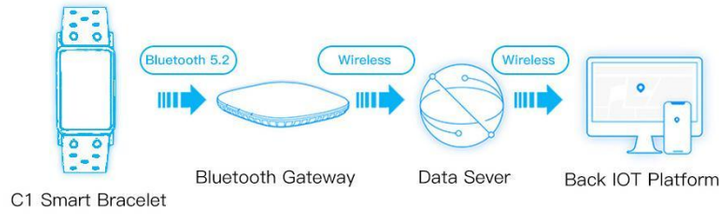
SH09 Smallest range: 5.1cm
Biggest range: 7.8cm
(5.1cm–7.8cm) wrist size

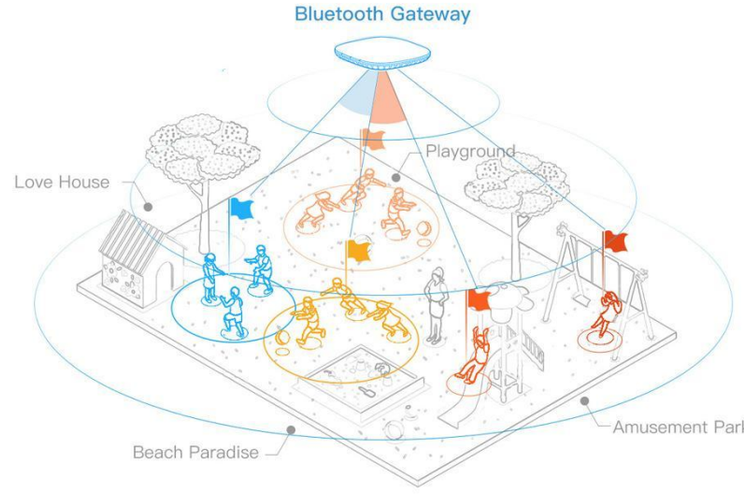
C1 Smallest range: 39mm
Biggest range: 59mm
(3.9cm–5.9cm) wrist size

Ultra light strap

Area of interest at campus

Bluetooth gateway can be located in every corner of the campus to understand each child's after-school hobbies





SH09-HTO2

(Screen+Blood Oxygen+Heart Rate+Body Temperature+Breathing+Exercise Sleep)

SH07S

(Screen+exercise sleep without heart rate)

SH06-HTO2

(Exercise/Sleep, Without Screen, With Heart Rate and Body Temperature, With UV)

SH08-HTO2

No display,

multiple color choices

Teacher's bracelet X3 (1-to-many collection of heart rate exercise data, like)

1–200 Students

Name	Order
1 Annie	8
2 Emily	6
3 Jasmine	5
⋮	⋮

Collision between teacher's bracelet and student's bracelet
The bracelet vibrates and records the number of times sent to the background display

Sign in	
Belen	Arrived
Daisy	Arrived
Henry	Arrived
Cassie	Arrived

Heart rate risk control	
Belen	139
Daisy	112
Henry	98
Cassie	97

3. Smart Armband and Bracelet Series

T3 (Student/Adult)

T5 (Student/Adult)

C1

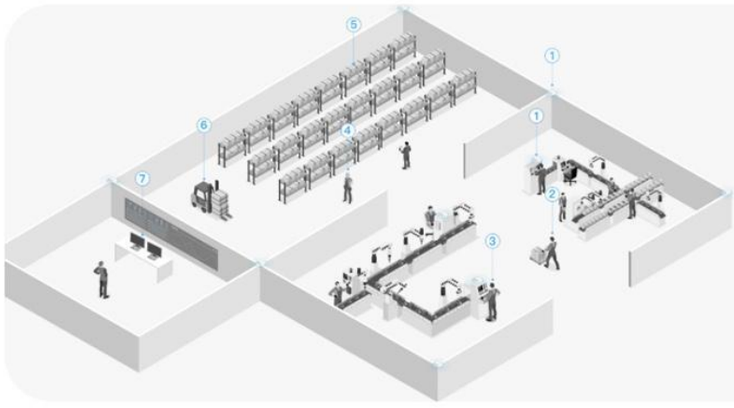
(Kindergarten/Primary School)

C2

I7

(Extra -school sports training version)

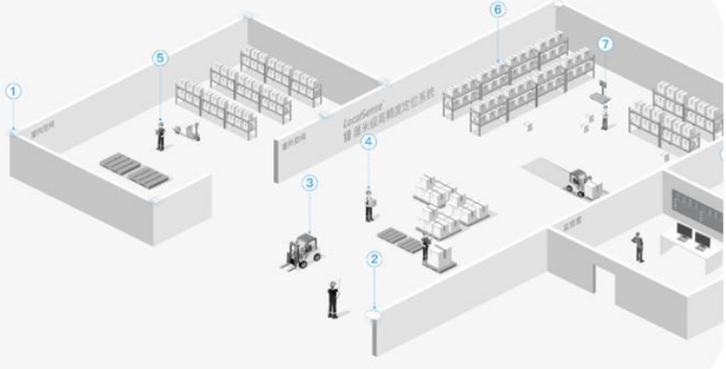
4. LORA/LORAWAN +GPS and UWB Smart Watch Series



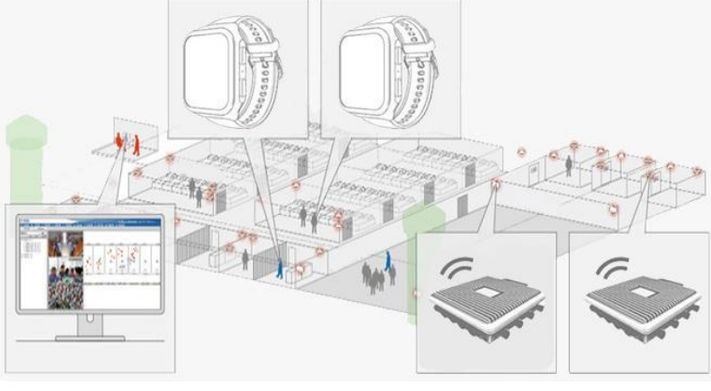
Smart Factory

Smart medical

Smart Building



Warehouse Logistics



Wisdom Prison

J3-LORA/LORAWAN Multi -band

(EU868 US915 AS923 AU915)

J3-UWB

JYCS001-LORA

(470 domestic frequency band)

J3-CATM/NB/+GPS(Version)

(Overseas version with ESIM)

5. Smart Watch (Anti Demolition) -Prison/ Psychiatric/Community Correction

J1 anti -demolition watch (Bluetooth AOA+125K)

J2 anti -demolition watch (Bluetooth 5.2+GPS/Beidou+NBIOT)

6. Smart Hybird Watch（Quartz watch Outlooking）

H03PRO

8. X7 Smart IoT Watch

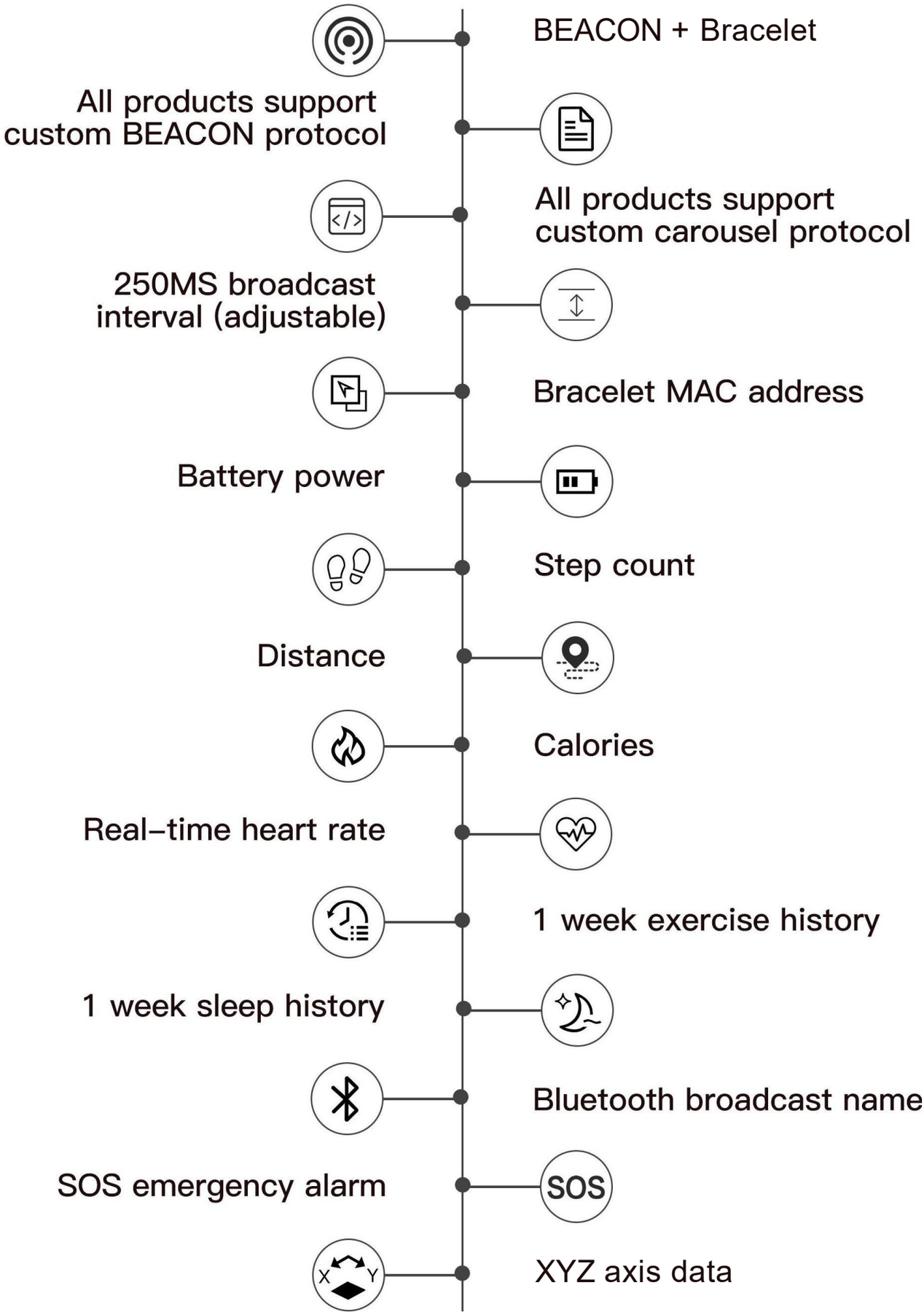
BLE5.2+GPS+LORAWAN

9. Charging Platform（1V50 or customized）

Function:

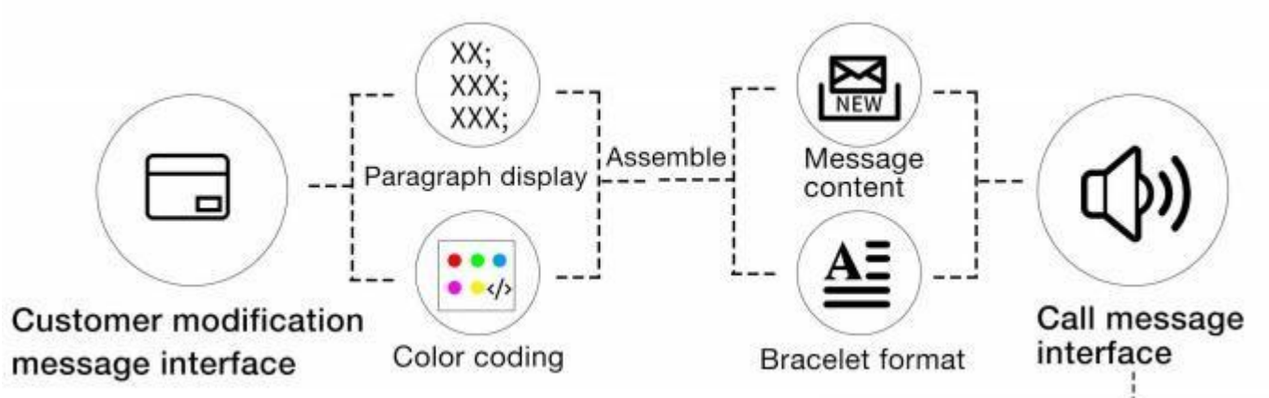
1. Charging **50** sports bracelets or arms at the same time
2. Reference size 400*250*90 (mm)
3. Power 40W, output 5V 1A,
4. Use new ABS materials,
5. Strong impact, disassembly
6. Different styles of charging management boxes are different, you need to customize

Technical solutions



Message push and storage

- With the Bluetooth gateway to establish a connection
- The bracelet can receive 10 messages and store them.
- The number of words displayed per screen is 50 Chinese characters (160*80 resolution color TFT display)



1. Each message sent by thebracelet can customize the text color;
2. The bracelet message can be displayed in paragraphs;

For example, send

11Respiratory;

303 beds;

breathe too fast; end of infusion11

On the bracelet,

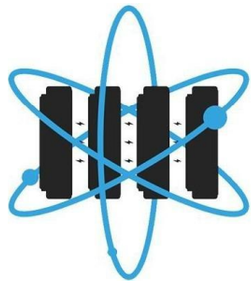
the format displayed on the bracelet is:

Batch automatic time calibration

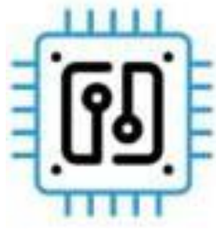
- Using the master-slave bracelet to automatically calibrate the time in the Bluetooth base station coverage
- Solved the problem of batch time of multiple bracelets
- Solved the problem that the bracelet should be set repeatedly after there is no power time recovery.
- Solved the problem that users can't use APP and can't synchronize time in similar school scenes.

Ultra low power heart rate

- Original charged ultra-low once, power heart heart rate rate can support algorithm 10-15 and chip days when combinationit
- fully charged once, heart rate can support 10-15 days when it 1s normally open 24 hours (depending on different models)



Ultra low power heart rate



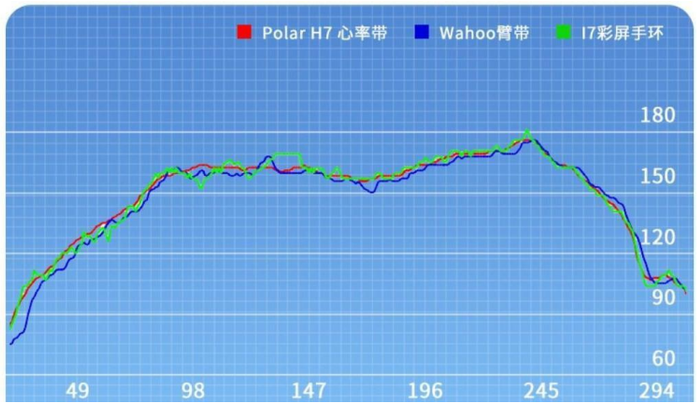
Algorithm and chip combination

Addressed customer requirements for medical and health management

Long-term collection of heart rate data for power analysis of algorithm analysis

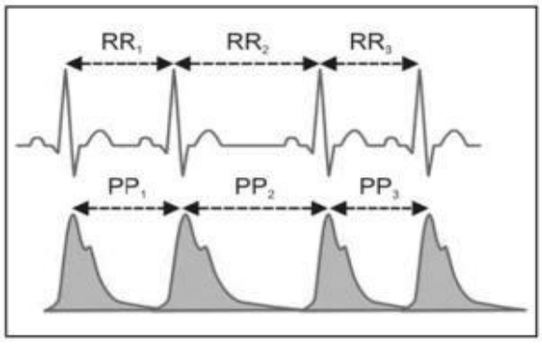
Precise heart rate

- Unique dynamic heart rate algorithm that makes heart rate accuracy in life scenes, walking, and even irregular move- ments
- In the process of contrast with heart rate, it shows strong dynamic followability.

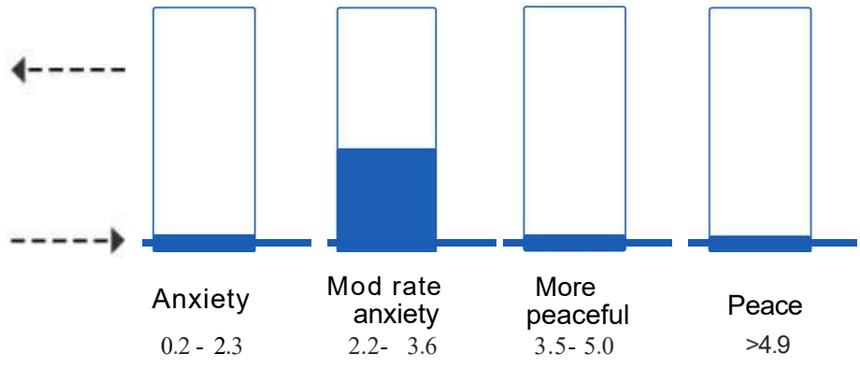


Heart rate variability HRV data collection

HRV applies to the body's daily stress check, which can lead to emotional and stress prescriptions



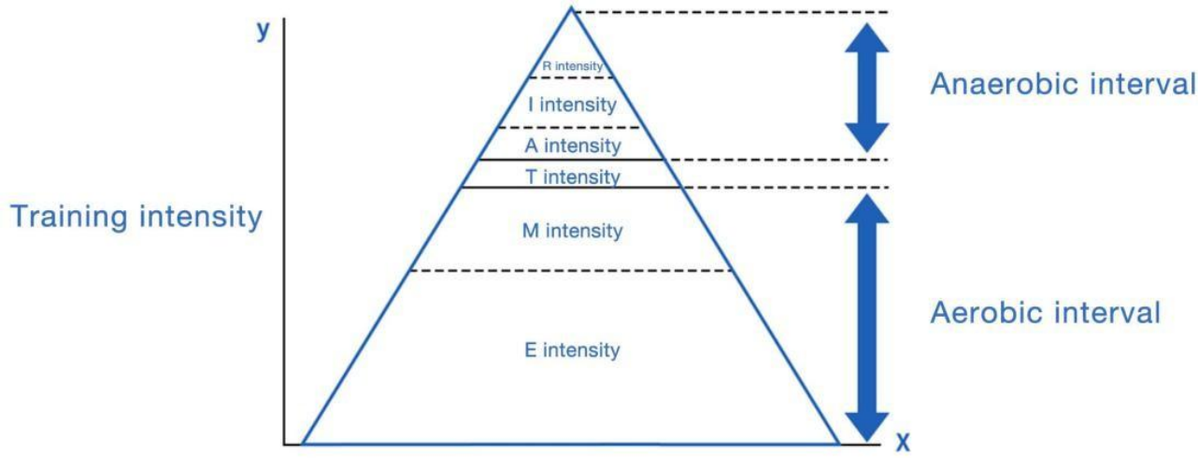
Heart rate variability HRV



Emotional measurement

Heart rate raw PPG RAW DATA data collection up to 1000HZ

- Multi-dimensional sensor data output including acceleration sensor gyroscope, etc.
- Using the reserve heart rate HRR to divide the exercise intensity interval is more scientific



HRR = (maximum heart rate - resting heart rate)* intensity percentage+ resting heart rate

HRR uses raw data for RRI and XYZ axes

Bluetooth One-to-many Technology

All products support Bluetooth One-to-many Technology. This technol- ogy enables integrated customers who do indoor positioning to reduce the deployment data and cable cost of the gateway to a large extent, so that the original location of the deployed gateway is changed to deploy beacons, not only the overall solution cost. Low, construction costs and customer convenience have also been greatly improved. This solution transforms the traditional single Beacon positioning mode into active posi- tioning, which provides a more competitive solution for indoor positioning integrators.

	Group One-to-many Positioning Wristb	Single Wristband Beacon positioning broadc
Technical characteristics	Bracelet scanning Beacon Broadcast simultaneously and received by the AP	The individual ring of the bracelet is received by the AP
Deploying a gateway	Rarely	a lot of
Deployment beacon	Originally deployedgateway Place to deployBeacon	Do not deployBeacon
Cost budget	Lower cost	Because there aremore gateways higher cost
Deployment convenience	Less pull line, easy to deploy	Pulling more lines, deploying trouble

Applicati on Fields

Smart campus

1) Daily behavior monitoring and safety warning for students in school

Using radio frequency (FRID), Bluetooth gateway, wireless hotspot (wifi ap) and other technologies, special space point monitoring and analysis is carried out for students wearing smart bracelets.

2) Student catering behavior monitoring and nutritional health assessment

Monitoring the student's eating behavior can monitor the student's meal time, meal volume, and meal type in the restaurant, and form a student's dietary pref- erence and nutritional meal recommendation report.

3) Student physical exercise behavior monitoring and physical fitness assessment

Focus on monitoring students• exercise patterns and exercise volumes to form individual and overall sports statistics

4) Student reading behavior monitoring and reading ability assessment

5) Student attendance leave behavior monitoring and disease warning

Multiple bracelets + gateway + IoT platform + application platform + applet/APP remote

The fourth generation kindergarten bracelet (designed for smart kindergartens)

Exterior

Multi-color appearance
High recognition

Volume

Extremely lightweight,
suitable for children to wear

Heart rate
Accurate heart rate

Ultra-small wristband circumference,
suitable for children's wrists

Ultra-low power consumption
heart rate always on

Safety

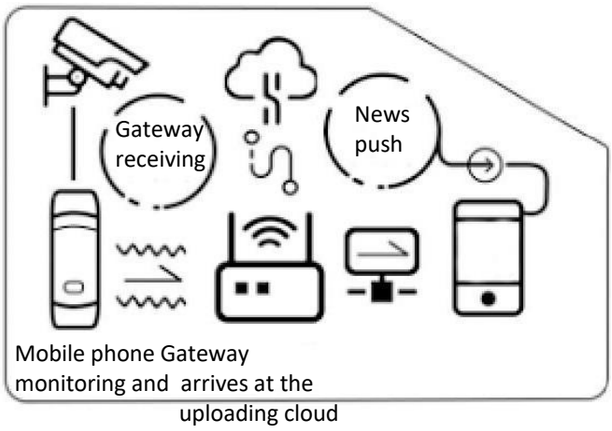
Bayer grade food material

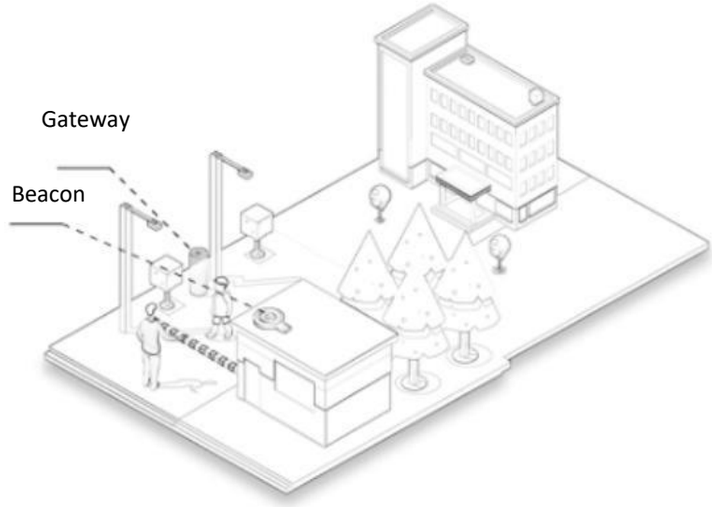
12 CM ~ 16 CM
16 CM ~ 20 CM

24h X 14 day

On-campus attendance

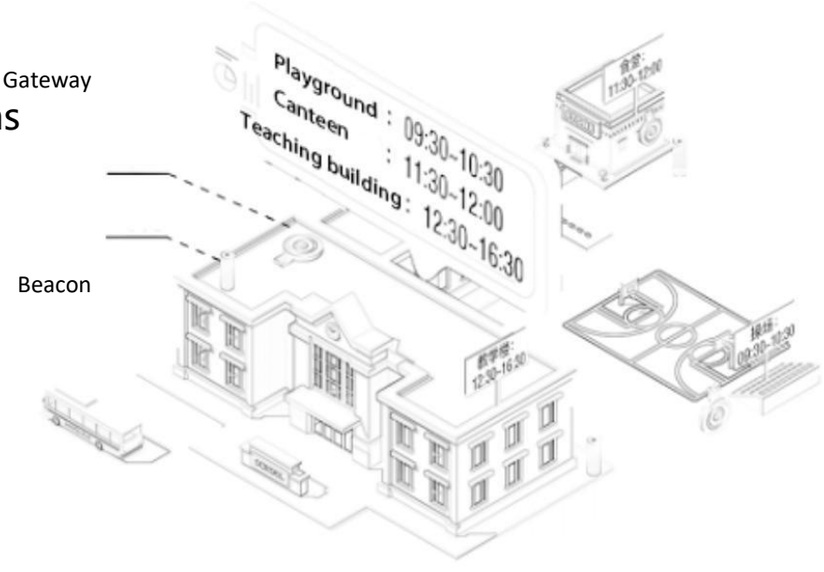
When children enter and leave campus,
The gateway will record and push to parents





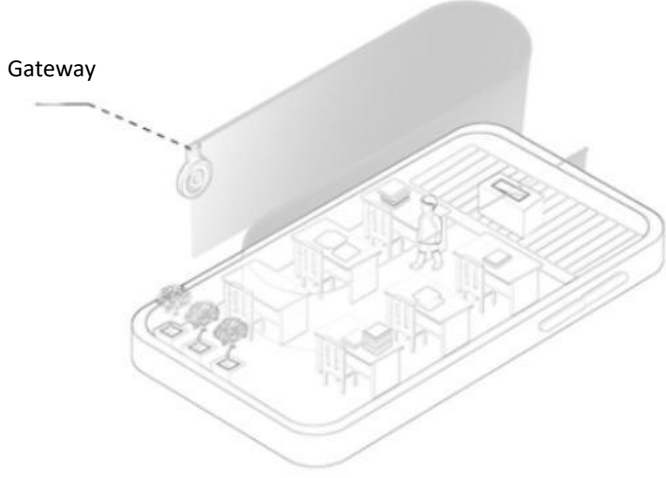
Regional positioning

Keep track of where each student has been And record the length of time spent.



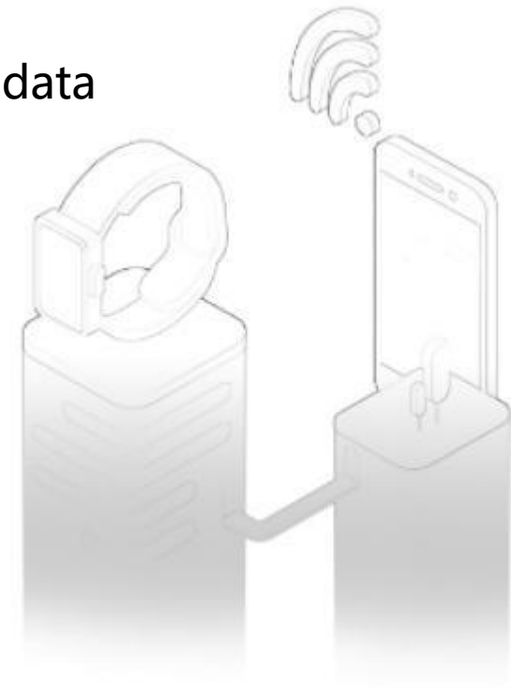
Indoor track navigation

Record the classroom activity track of each student
Real-time classroom attendance



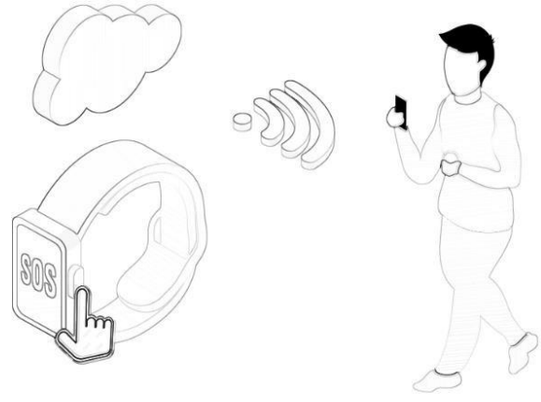
News push

Real-time push of health monitoring big data
Real-time push of attendance records



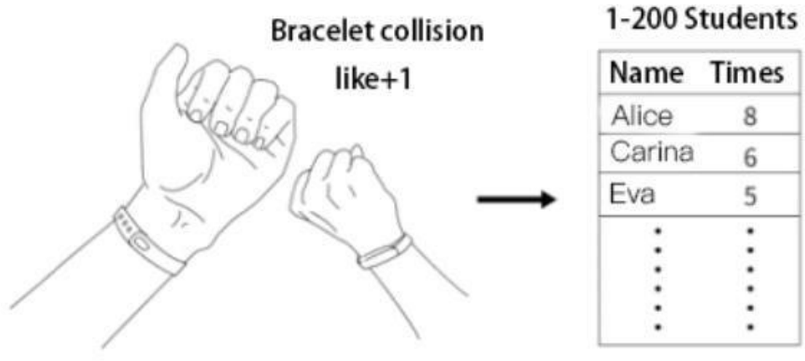
SOS one-key alarm

One-click alarm; contact your pre-stored emergency contacts



Teacher's praise to children

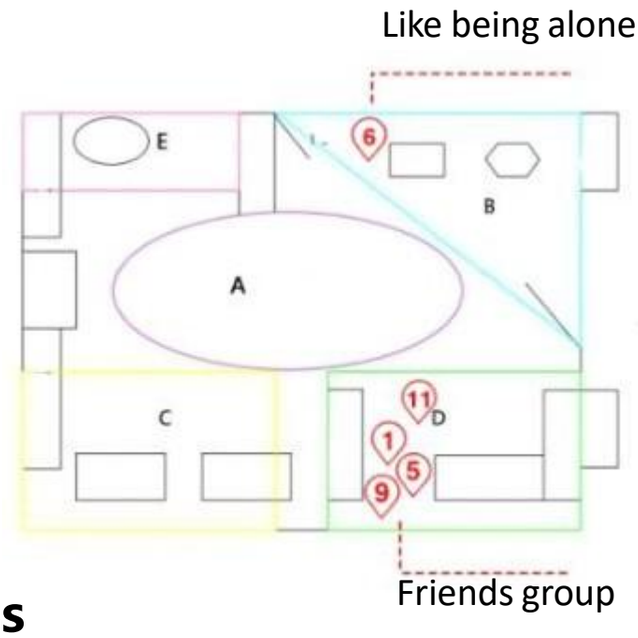
The teacher's bracelet and the student's bracelet collide
The bracelet vibrates and records the number of times sent to the background display



The teacher's bracelet collides with the students
The bracelet vibrates and records the number of times sent to the background display

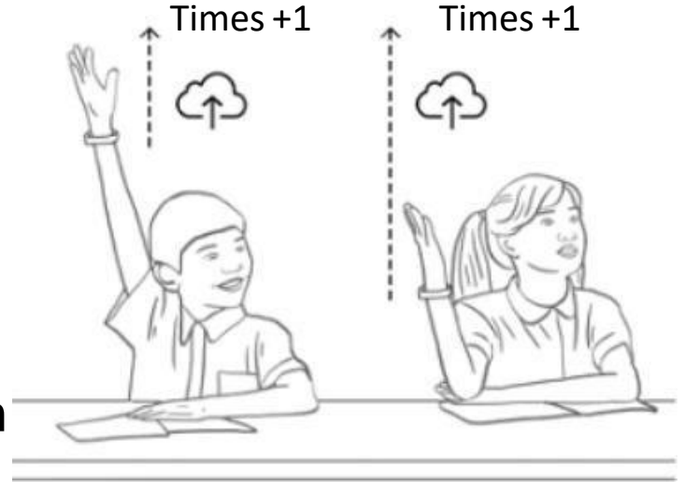
Child friend group identification

Identify friend groups
through regional positioning



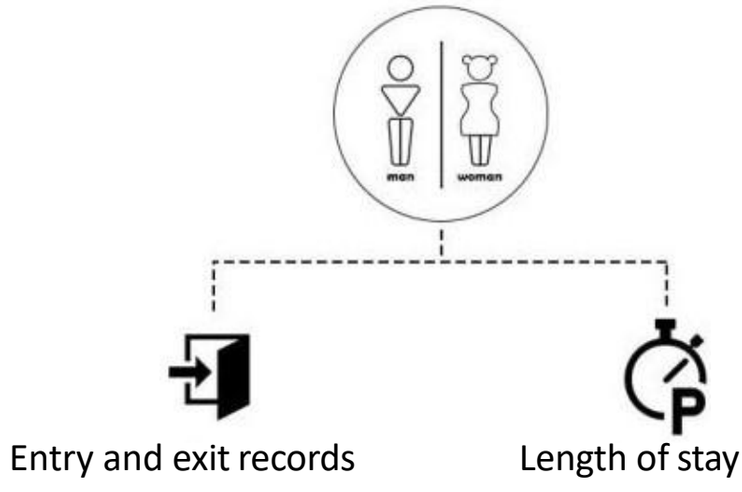
The number of times the child raised his hand in class

Record times through
gravity sensor and display
times in the background



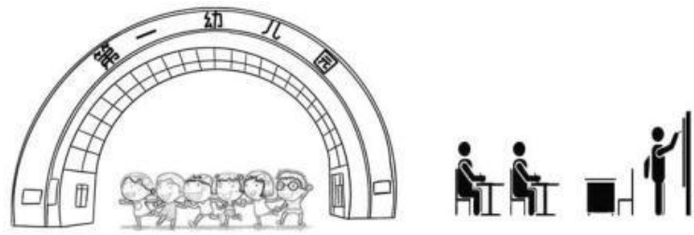
How long does the child go in and out of the bathroom

Install sensors at the door of the toilet
and record the time spent in the toilet



Check in and check out

Electronic fences, sensors, and automatic sensing are placed at the entrance of the park. Children check in and out of the park, and teachers check in and out of get off work.



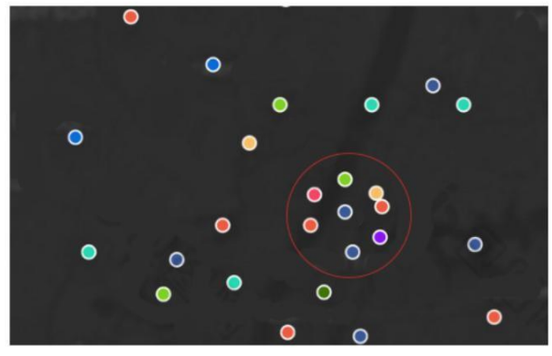
Electric fence　　Sensor　　Real-time clock in

Children getting on and off the school bus record

Record the time of getting on and off the school bus and push the message to parents

Crowd gathering alarm

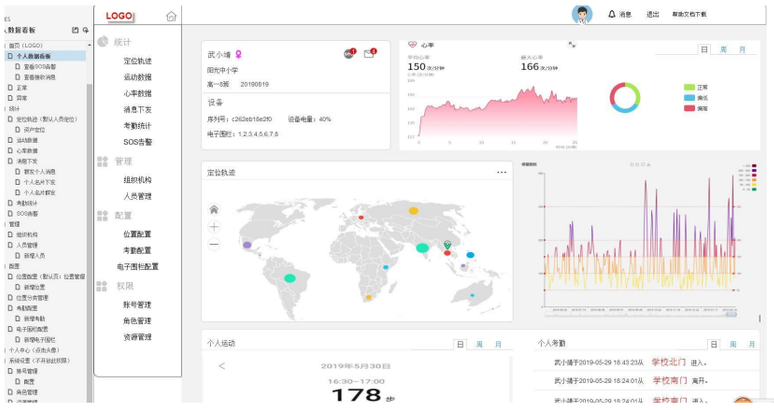
Realize crowd gathering judgment t...ough indoor positioning technology



More than 5 people + more than 5 minutes; the bracelet will alarm

Management background

Background statistics



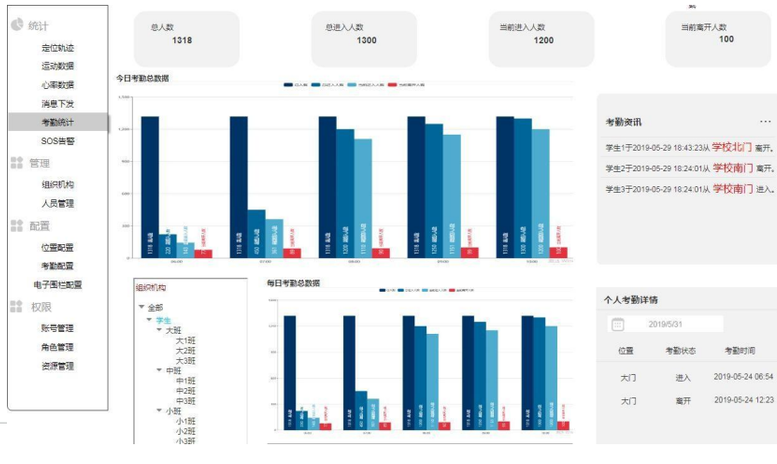
Body temperature data

Heart rate data

Sports data analysis

Personnel positioning

Attendance statistics



Historical case

Five schools in Pengzhou: Baima Shishi Middle School, Pengzhou No. 1 Middle School, Pengzhou Middle School, Aoping Middle School, Mengyang Middle School

Realize function:
1.Cooperate with the class scheduling software and electronic class card for the class attendance of all middle schools;
2. Realize that parents can send messages to students;
3.Realize student campus positioning (prevent students from skipping classes, leaving school without reason, electronic fences, etc.)
4. Realize student's exercise and health (heart rate) monitoring







Historical case

Tianfu No. 4 Middle School strives to create a smart, efficient, and ecological smart campus, with first-class hardware supporting facilities to fully meet the needs of teachers, students, parents and the public for smart education. 10 Gigabit LAN, Gigabit to the desktop, build a cloud platform to create an integrated network environment with full coverage of wired and wireless. The school vigorously promotes smart applications in four aspects: adaptive smart teaching, scientific smart management, collaborative smart teaching and research, and customized smart services, and efficiently conducts big data analysis of school-wide informatization education and teaching to achieve precise management and precision Teaching and precise service.

Shenyang No. 176 Middle School

Realize function:

1.Cooperate with the class scheduling software and electronic class card for the class attendance of all middle schools;

2. Realize that parents can send messages to students;

3.Realize student campus positioning (prevent students from skipping classes, leaving school without reason, electronic fences, etc.)

4. Realize student's exercise and health (heart rate) monitoring

Application scenario

Smart sports

1) Physical exercise behavior monitoring and physical fitness assessment

Monitor the daily exercise volume and exercise patterns of the students, including the amount of exercise such as daily walking, running, jumping, etc., the length of exercise of the students in the playground, etc., combined with the physical data of the students (gender, height, weight, illness, etc.) Form a daily exercise compliance report for each student, and request the system to periodically analyze the exercise data of the monitored students to form a physical development situation map and trend map of the individual and all students, and according to the growth rules of the students in each semester And physical fitness indicators suggest scientific training advice and guide-lines.

Application scenari

Smart medical

1) Body side data message push

Patient's body data is uploaded to the cloud platform

Patient's relevant measurement data can be transmitted simultaneously Cloud platform such as blood pressure ECG ECG blood oxygen

Blood sugar/ fetal heart I breathing / body temperature, etc. Infusion judgment

Sleep data upload (sleeping heart mattress)

2) Patient SOS One Call for help

The patient can call the cloud platform through the wrist button. Call for help information can be pushed to the nurse on duty or on the guard1s bracelet

3) Track positioning

Patients will have trajectory records and real-time location and statistics in the hospital;

Judging too long in a particular location

4) Medical equipment/ medical waste and asset management

5) Baby theft/nurse and room management

Physical test data news push

Upload the patient's body data to the cloud platform

The patient's relevant measurement data can be transmitted to the cloud platform at the same time

Blood sugar, fetal heart, respiration, body temperature, etc.

Infusion judgment

Sleep data upload (sleep ECG mattress)

Patient SOS call for help

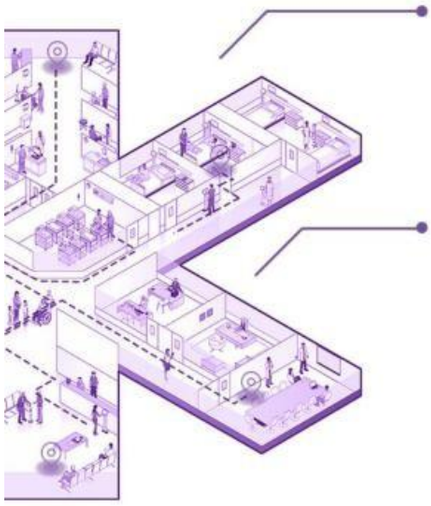
Patients can call for help to the cloud platform through the bracelet buttons

Call for help information can be pushed to the nurse on duty bracelet

Call for help can be pushed to the nurse

Track positioning

Patients will have track records and real-time positioning and statistics in the hospital



Length of stay in a specific location

Medical equipment and asset management

Movement tracking

Real-time positioning

Medical waste management

Visualized management of medical waste indoor

Seamless connection between indoor and outdoor

Baby Burglar

Anti-theft and anti-lost

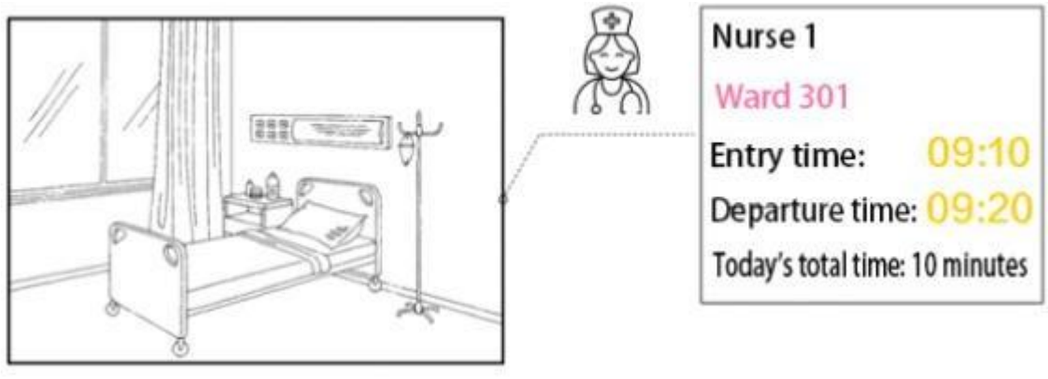
Error proof

Prevent malicious exchange

Application scenario

Smart Nurse Station

1) Count the length of time a nurse has been in a ward, including the time of entry and exit, time distribution, and total time per day.

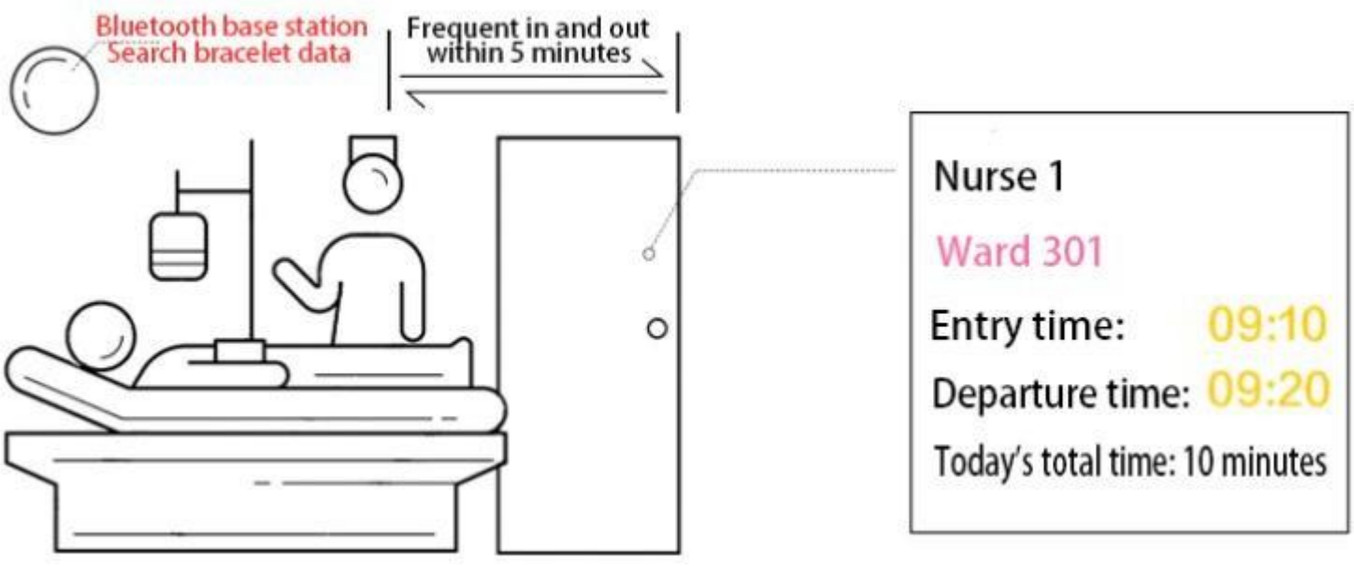


2)The data is stored for 12 hours, and the data is cleared the next day.

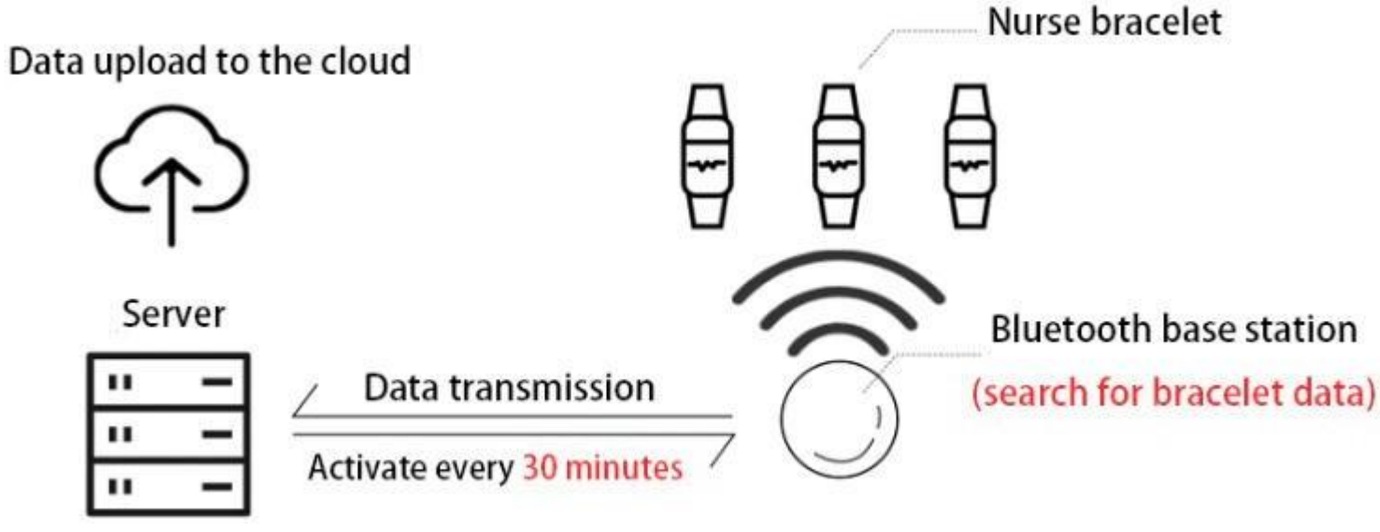
3) Keep the total number of nurses within 30.

4) Keep the maximum number of wards within 50.

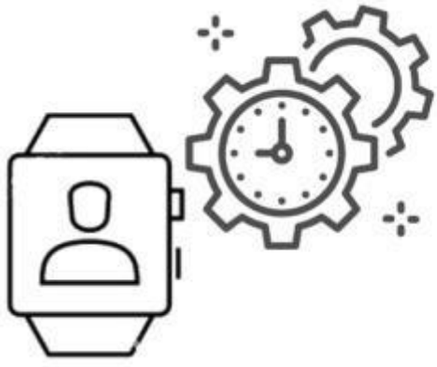
5) If a nurse frequently enters a certain room within (5 minutes), then only one piece of data is counted, including the earliest entry time, the latest departure time and the total length of time, not multiple data.



6) The Bluetooth base station provides API to the server, and the server activates the base station every 30 minutes to search for the data in all nurse bracelets and report back to the cloud.



7) The wristband and base station provide an interface for setting the working hours of nurses. The start and end times of different nurses are different.



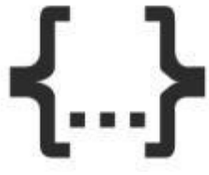
Setting interface of bracelet and base station

Working time setting

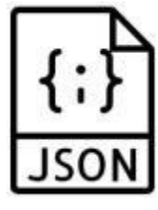
8) When the bracelet is set to start, the default data storage time is 12 hours after the beginning of this time; the data clearing time is 24 hours after the beginning of this time (refers to the nurse's work the next day)

9）

HTTP protocol



MOTT service



JSON data format

Applicati on scenario

Wisdom pension

1) Body side data message push

The old man•s body data is uploaded to the cloud platform
The relevant measurement data of the elderly can be transmitted simultaneously Cloud platform such as blood pressure ECG ECG blood oxygen Blood sugar/ breathing / body temperature, etc.
Sleep data upload (sleeping heart mattress)

2) SOS one- call call for help

The old man can call the cloud platform through the bracelet button. Call for help information can be pushed to the nurse on duty or on the guard's bracelet

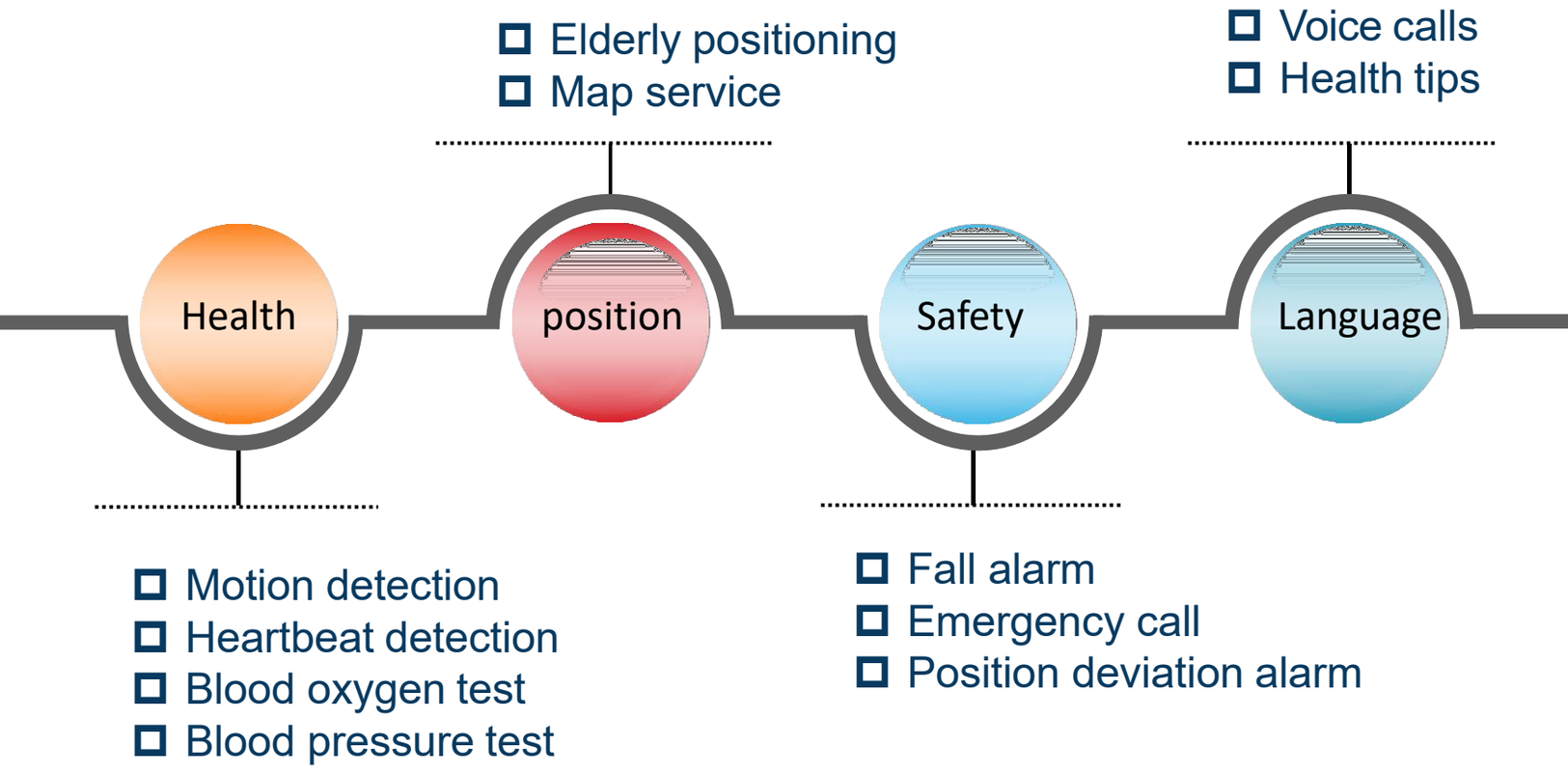
3) Track positioning

There will be track records and real-time positioning and statistics in the nursing home;
Judging too long in a particular location

4) Electronic fence setting, safe and healthy intelligent warning

5) Monitoring of vital signs of the elderly

Service Content



Program composition

The iSmarch elderly care solution consists of four parts: smart hardware, wireless network, IoT platform and application software

System composition and main functions

iSmarch Intelligent Elderly Care System

The system is mainly for the elderly, elderly care institutions and elderly family members, providing one-stop smart elderly care services

Smart hardware

- Personnel positioning
- Consumer payment
- Step detection
- Heartbeat detection
- Blood oxygen test
- Blood pressure test
- Emergency call
- Voice calls
- Electronic sign-in
- Electronic roll call

WeChat & APP application

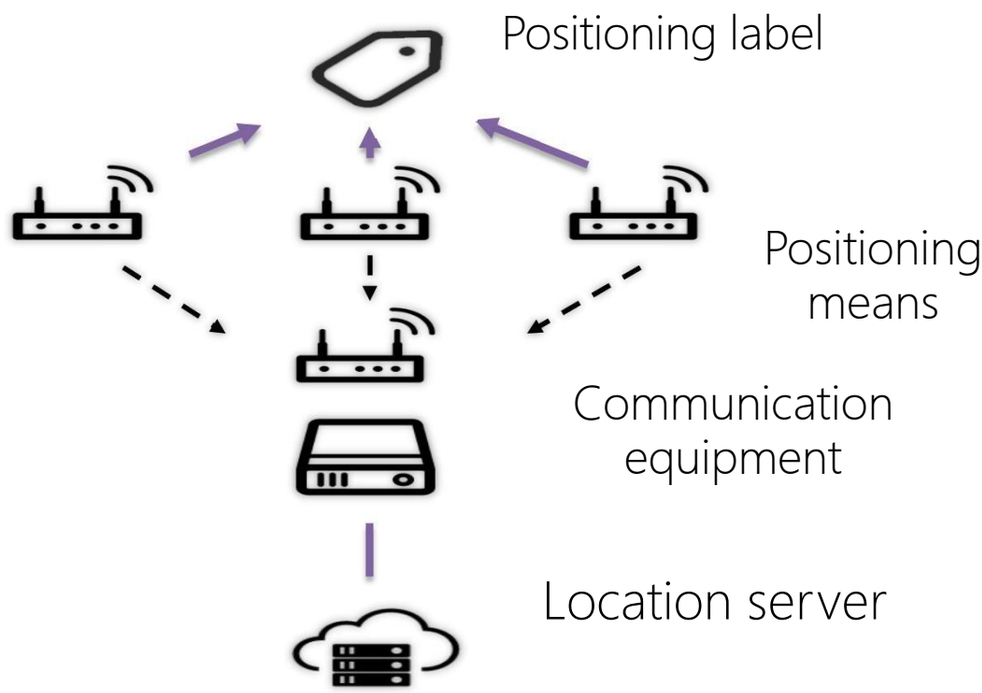
- Real-time location view
- Historical track query
- Voice calls
- voice message
- Health Index View

Management background

- Location view
- Video linkage
- Position deviation alarm
- Disappear alarm
- Alarm for too long stay
- Fall alarm
- Health problem alarm
- Emergency call answer
- Voice calls
- data analysis
- Equipment management

Technical advantage: positioning algorithm

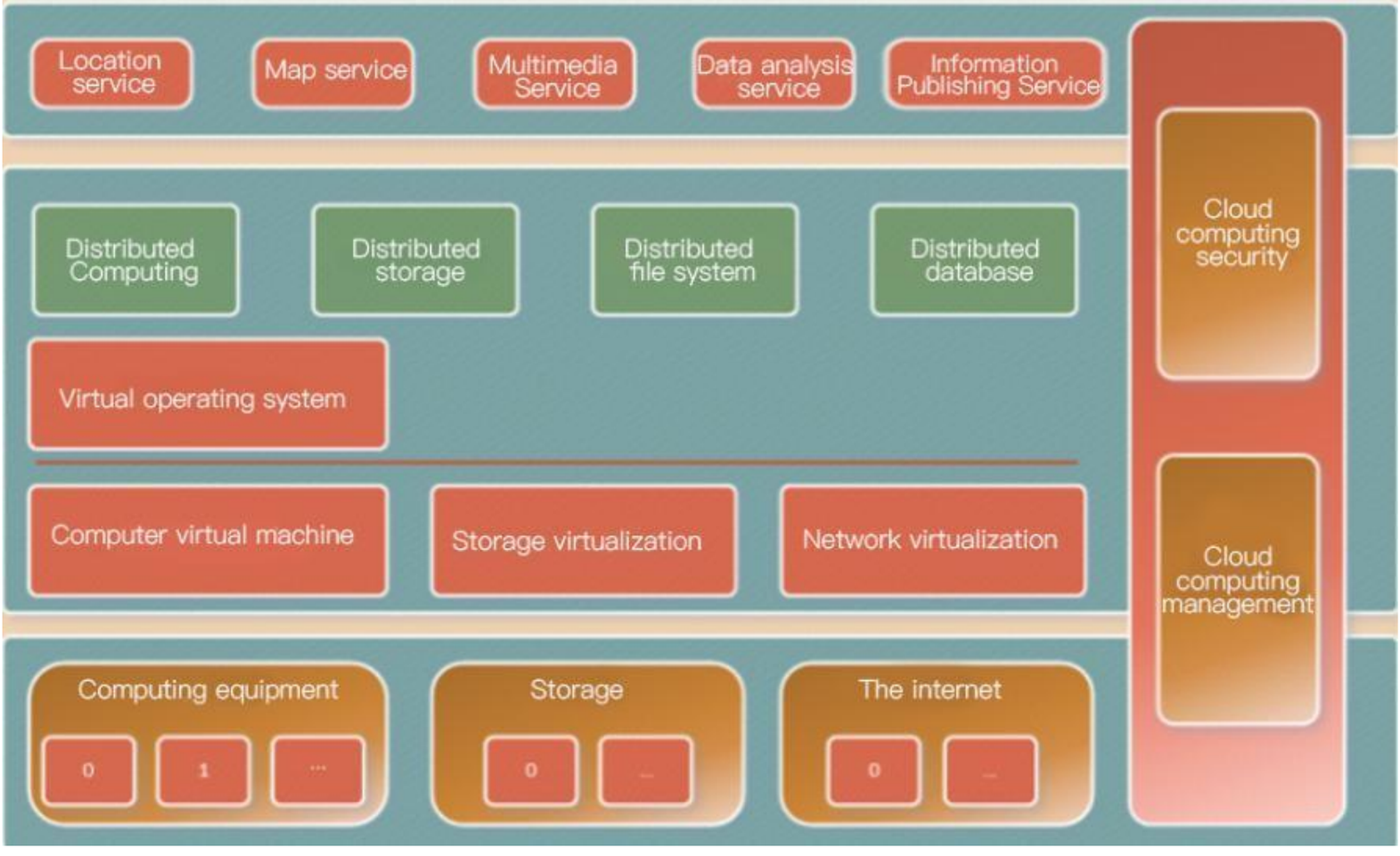
The Bluetooth gateway scans the Bluetooth signal broadcast by the positioning tag, and then uploads it to the positioning engine. The positioning engine uses the unique enhanced triangulation algorithm of Family Interactive IoT to determine the location of the positioning tag with a positioning accuracy of 1 to 3 meters.



Technical advantage: 3D map

- High map accuracy, average accuracy up to 10CM
- Using vector map format, zooming is clear and unaffected
- Use 3D map format to display more vividly
- Adopt international general WGS84 coordinate standard
- The map is rich in color and can be adjusted or customized as needed
- Rich POI material library, and can be set by yourself
- The map has functions such as query positioning, route planning, navigation, etc.

Technical advantages: cloud architecture + big data analysis



Applicati on scenario

Smart workstation

1) Worker positioning

Employees are positioned in real time, and managers can view the real-time location of different types of people in the system background.

2) Automatic electronic attendance, no perception punch

Every day when the worker enters the factory for the first time, the position and time of the worker will be automatically recorded, and an attendance record will be automatically generated in the background.

3) Hazardous area alarm

Custom fence area settings, when workers enter the electronic fence will immediately send alarm information to the background system

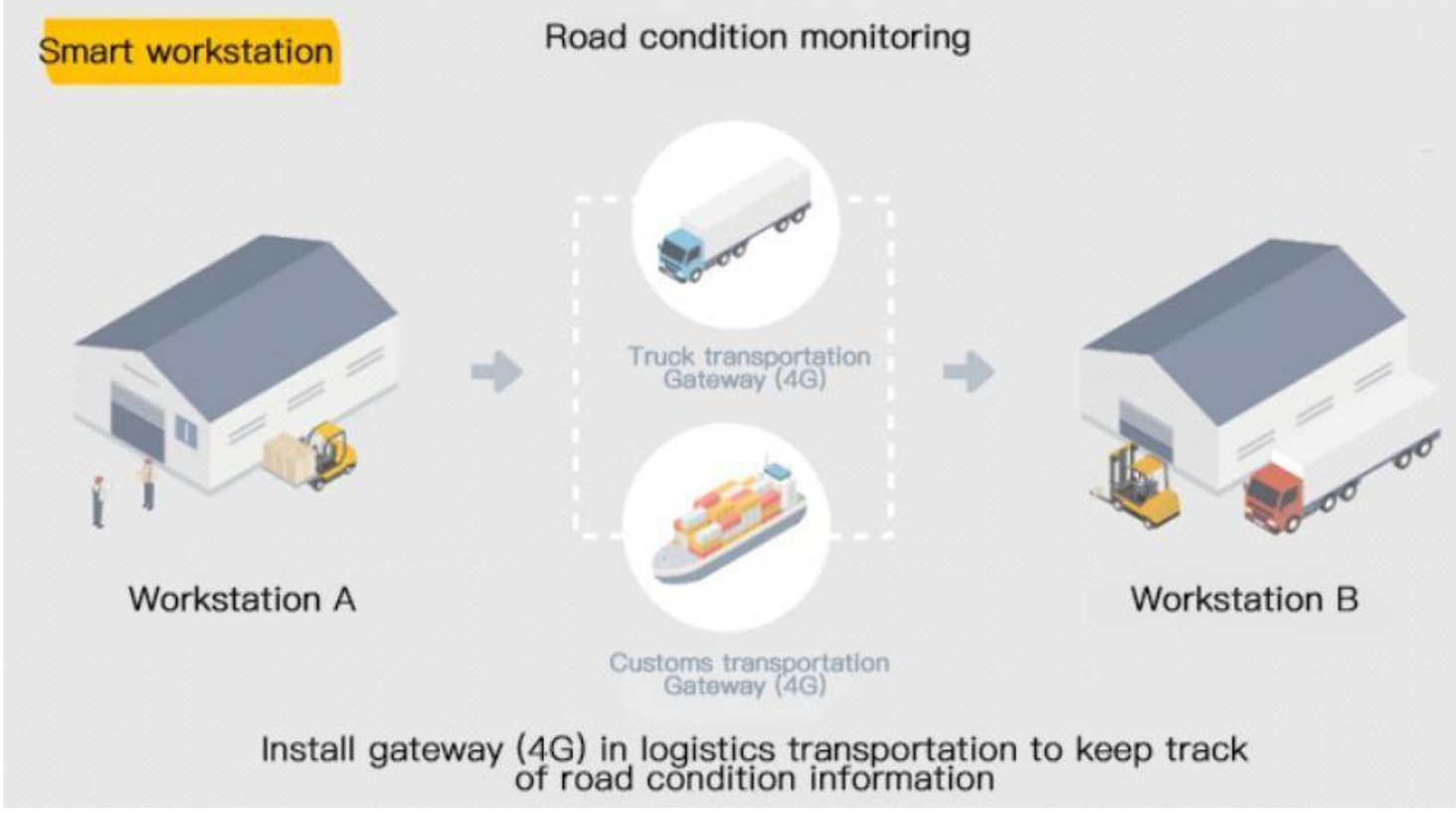
4) Static alarm

Long-term stationary alarm to prevent workers from being lazy or accidental

5) Health monitoring / caring for employee vital signs

Worker positioning / track playback

Road condition monitoring



Dangerous area alarm

Custom fence settings
Dangerous area alarm

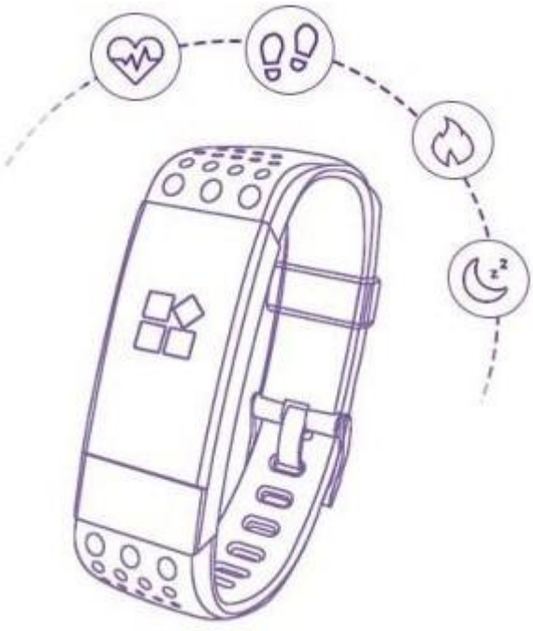
Alarm prohibited

Long time inactivity alarm
Prevent workers from being lazy

Automatic attendance

Automatic electronic attendance
No perception punch

Health monitoring



Caring for employee health vital signs testing

Applicati on scenario

Smart gym

1)) Real- t ime control of sports data

The bracelet can monitor each student1s heart rate exercise intensity, calories, steps and other movements at any time; for different training intervals to achieve training purposes

2) Data projection

Each student's exercise data and heart rate will be displayed on the big screen, so that each student can understand their own sports situation; at the same time, the coach will also supervise the students.

3) Heart rate warning

Heart rate warning settings for certain sports and students; v to prevent accidents