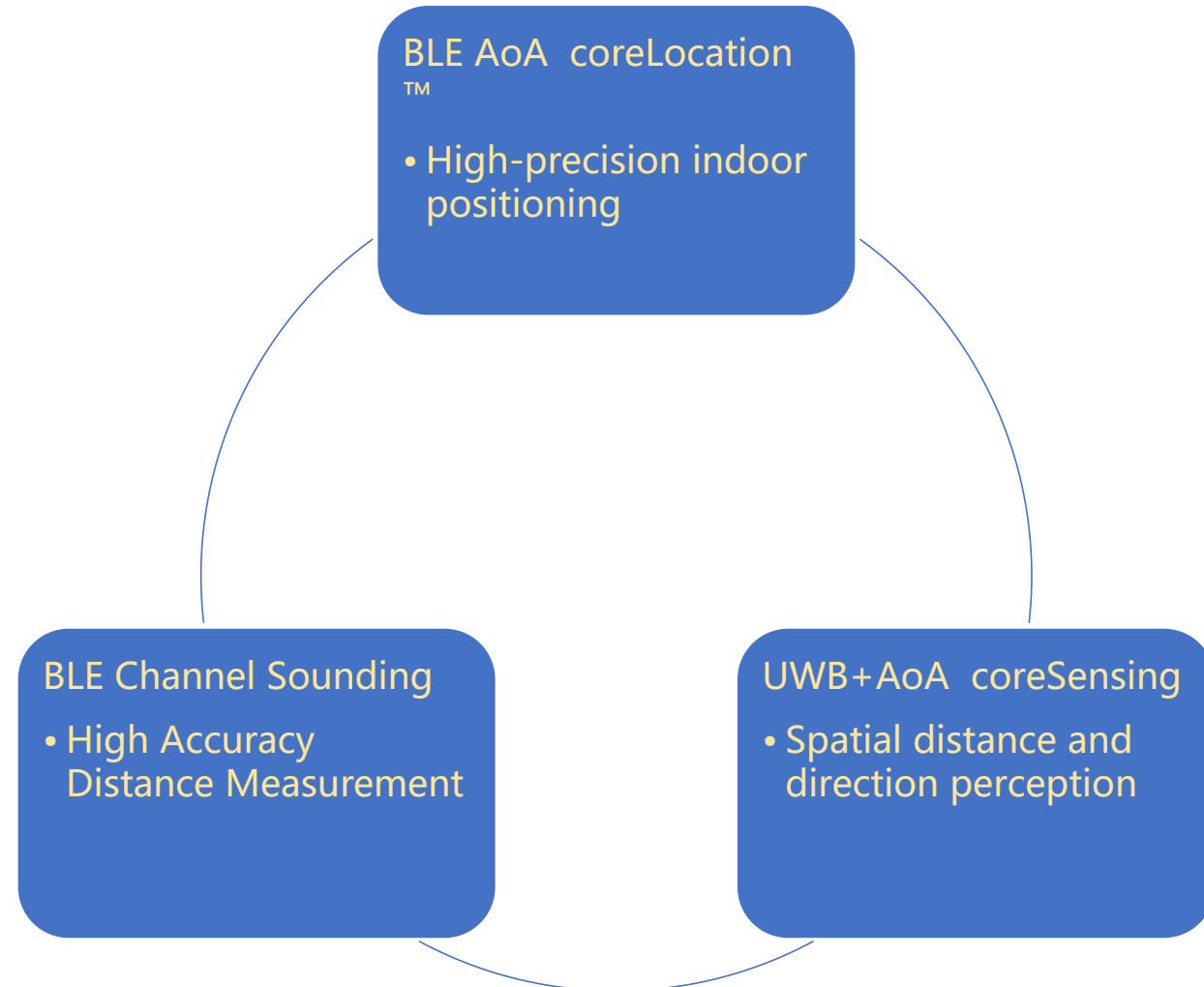




ShenZhen Coreaiot Technology Co., LTD

BLE AoA positioning locator original manufacturer

- CoreAloT is a start-up focusing on high-precision positioning. We are a leading manufacturer of BLE AoA locators. In September 2019, we became the first company in China to mass-produce and ship BLE AoA locators to our partners.
- For the past 5 years, we have heavily invested in R&D in the field of BLE AoA. Our independently developed array antennas and high-precision positioning algorithms are now widely recognized as cutting-edge technologies.
- Our company currently focuses on three main product lines:
 - BLE AoA product line, which has been widely used in smart factories, warehouses, hospitals, and amusement parks.
 - UWB+AoA, our new product line, which creatively combine our advantages in AoA with UWB to address the spatial distance and direction finding needs of a massive number of IoT devices
 - BLE Channel Sounding, Not deliver the Channel Sounding IQ data but the final High Accuracy Distance Measurement Result



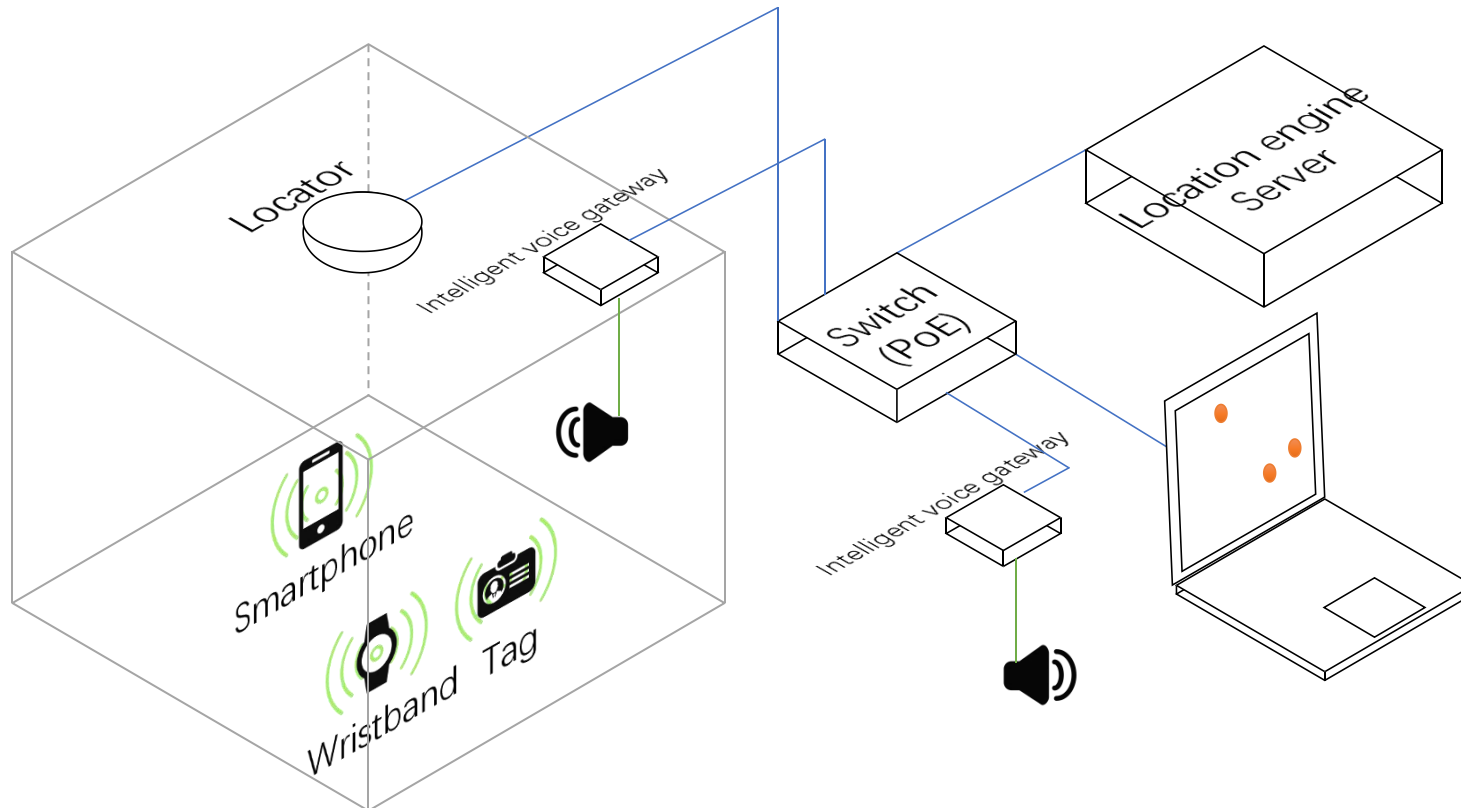
- About 20 colleagues
- Hardware design engineer: 2
- RF antenna engineer: 1
- Hardware test engineer: 1
- Embedded engineer: 2
- Algorithm engineer: 2
- Full-stack engineer: 2
- Front-end & Product Engineer: 1
- Software test engineer: 1
- Technical support engineer: 1
- Marketing engineer: 2
- R & D assistant: 1
- Production engineer: 1
- Supervisor team: 3

Well-rounded and highly efficient team!



- The coreLocation® Intelligent Locating System is a reliable technology platform for location based services and applications. Its unique “angle of arrival” technology and positioning algorithms enable real-time tracking of BLE Tags and devices (smartphone included), with centimeter level accuracy.
- The coreLocation® Intelligent Locating System is a reliable, versatile, highly customizable, fully scalable and economic Real Time Locating System (RTLS) solution for all industries.

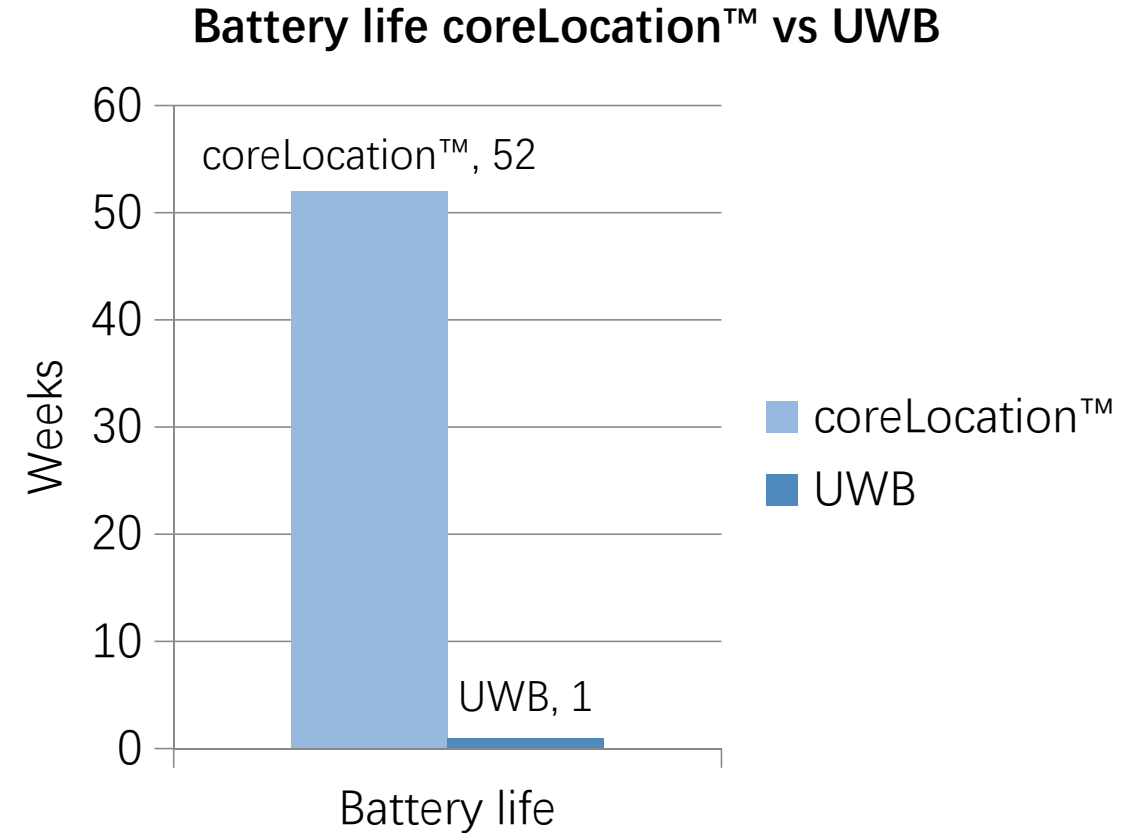
coreLocation® real time localization system(RTLS) uses BLE low power technology, state of the art angle of arrival positioning algorithm, high sensitivity micro antenna array, tracking wristband and integrated vital sensors to realize 24-7 continuous tracking and monitoring.



Key Features

- **Precise:** centimeter level
- **Realtime:** less than 100ms response time
- **Secure:** encrypted private channel
- **Open interface:** easy integration
- **Long battery life:** more than 1 year
- **Customizable tag:** for different scenarios
- **Big data engine:** help for decision

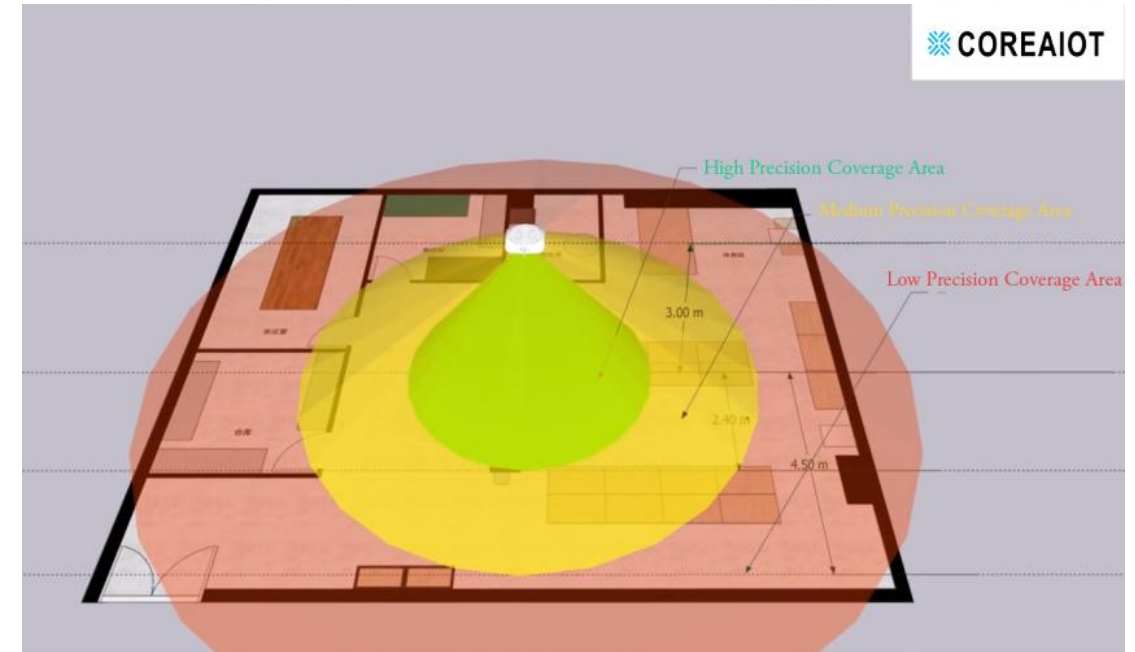
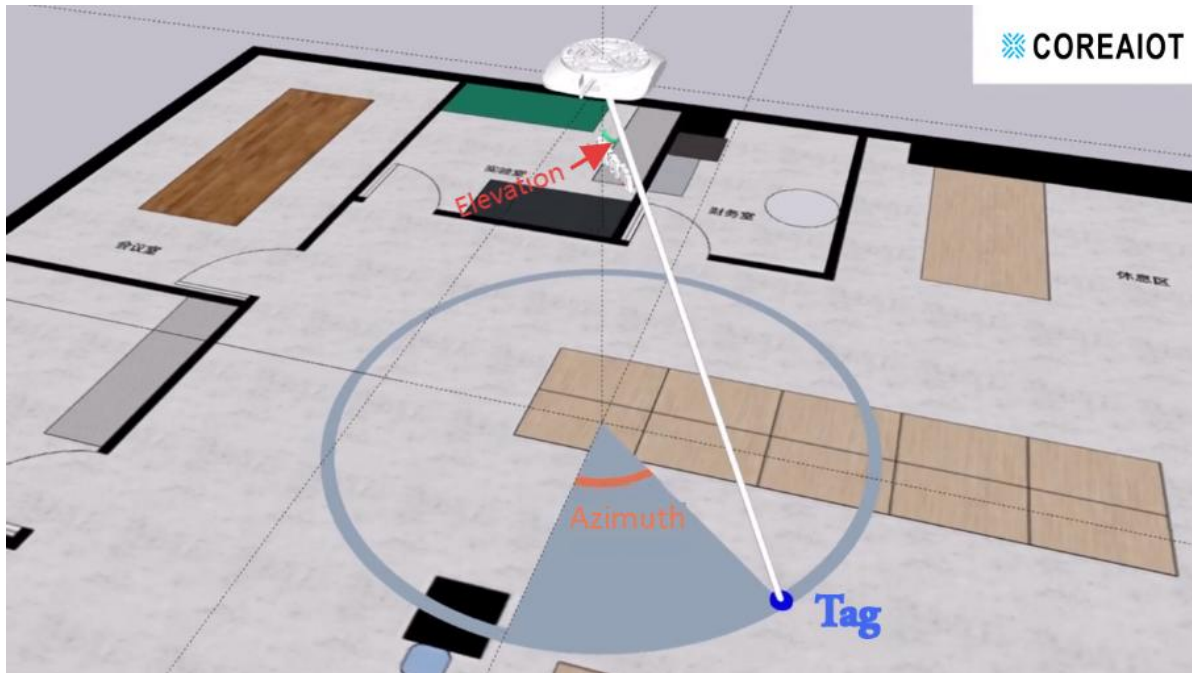
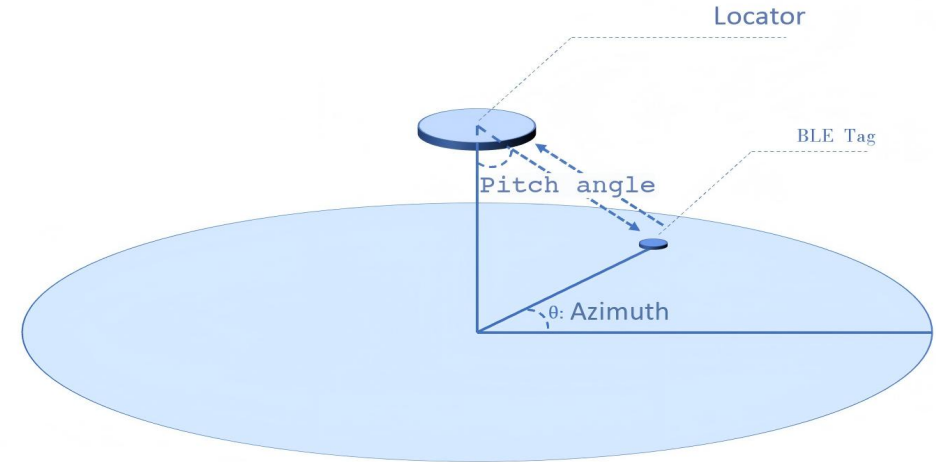
| Technology | coreLocation® | UWB |
|-------------------------|---------------|--------|
| Real time | Yes | Yes |
| Precision | High | High |
| Anti-interference | Strong | Weak |
| Battery Life | 1 Year | 1 Week |
| Smart phone support | Yes | No |
| Installation complexity | Medium | High |



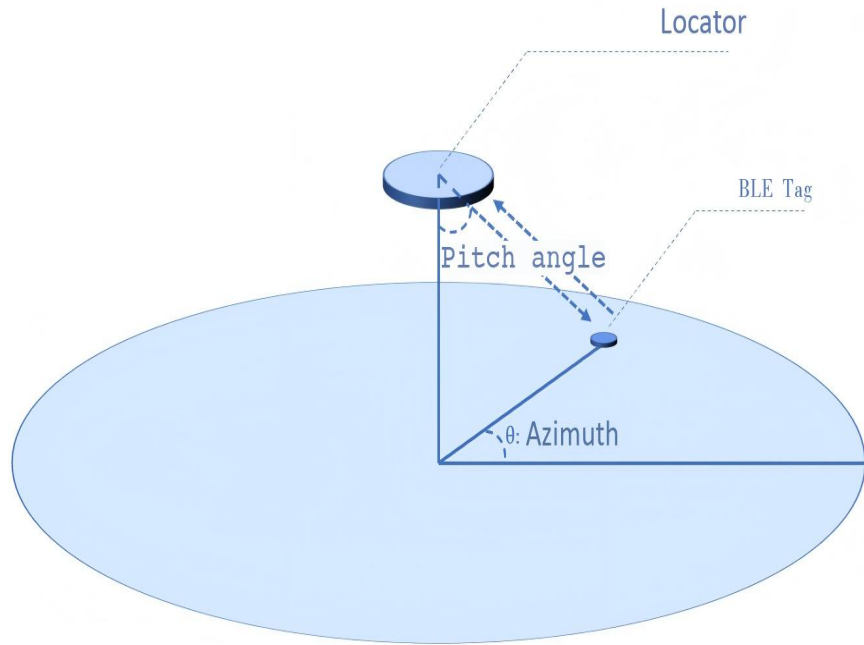
coreLocation® rewards ultra-low power BLE technology to achieve more than **52x** better battery life over UWB.

Basic Principle – BLE AoA

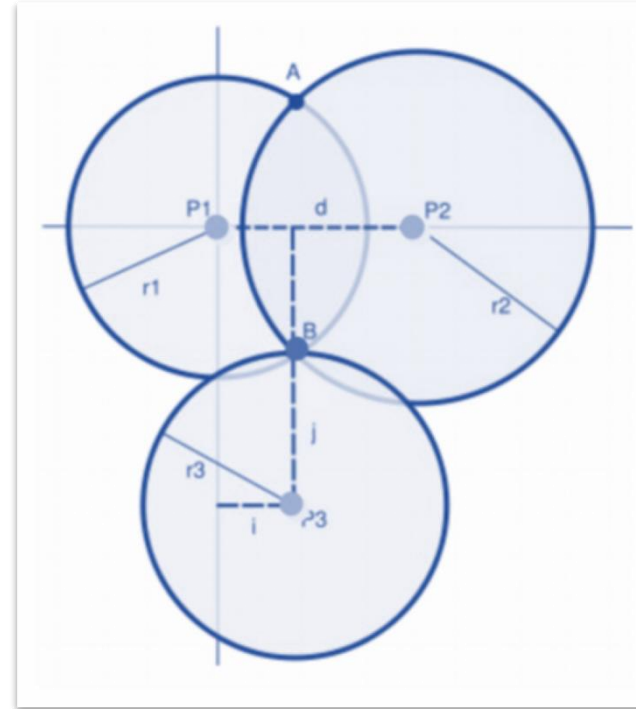
BLE AoA (Angle of Arrival) is a technology based on array antennas and high-precision direction finding algorithms that can determine the direction of a Bluetooth signal. This technology is widely used for indoor high-precision positioning in existing Bluetooth devices and smartphones.



Difference in positioning mode



BLE AoA technology only one locator to achieve two-dimensional positioning



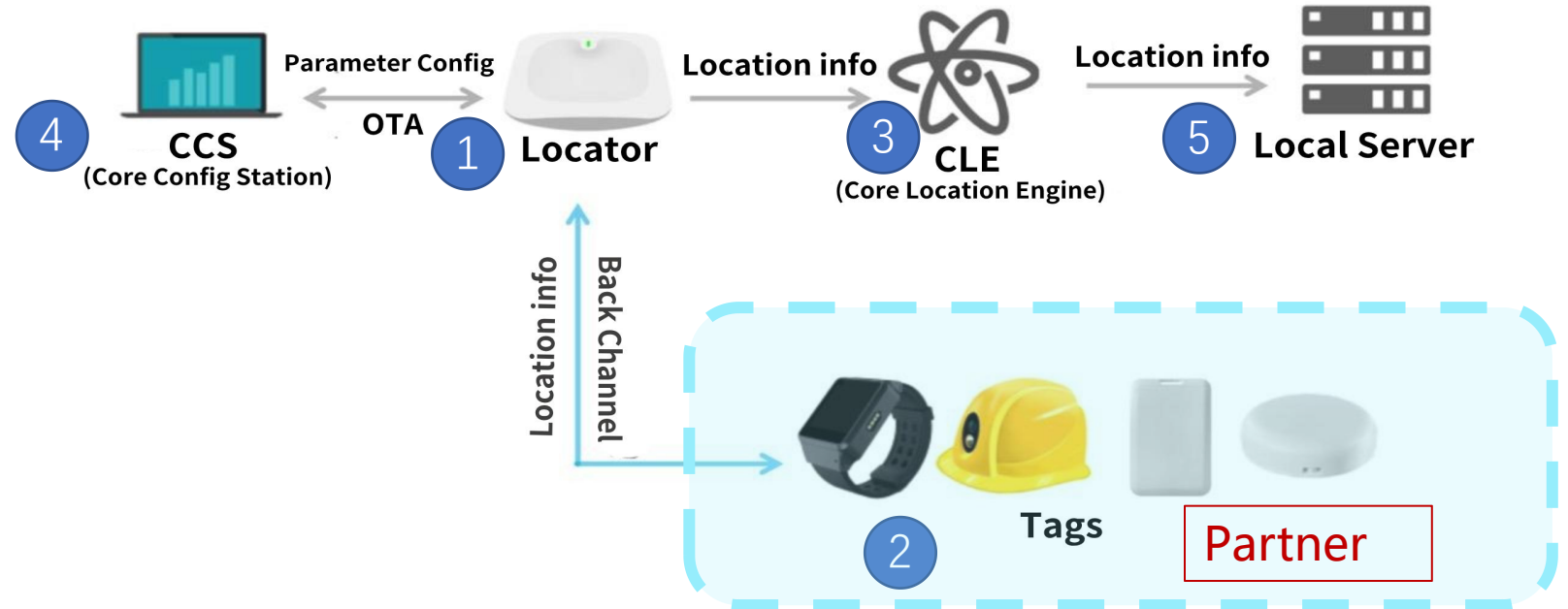
Other technology must use three or four locators to achieve two-dimensional positioning



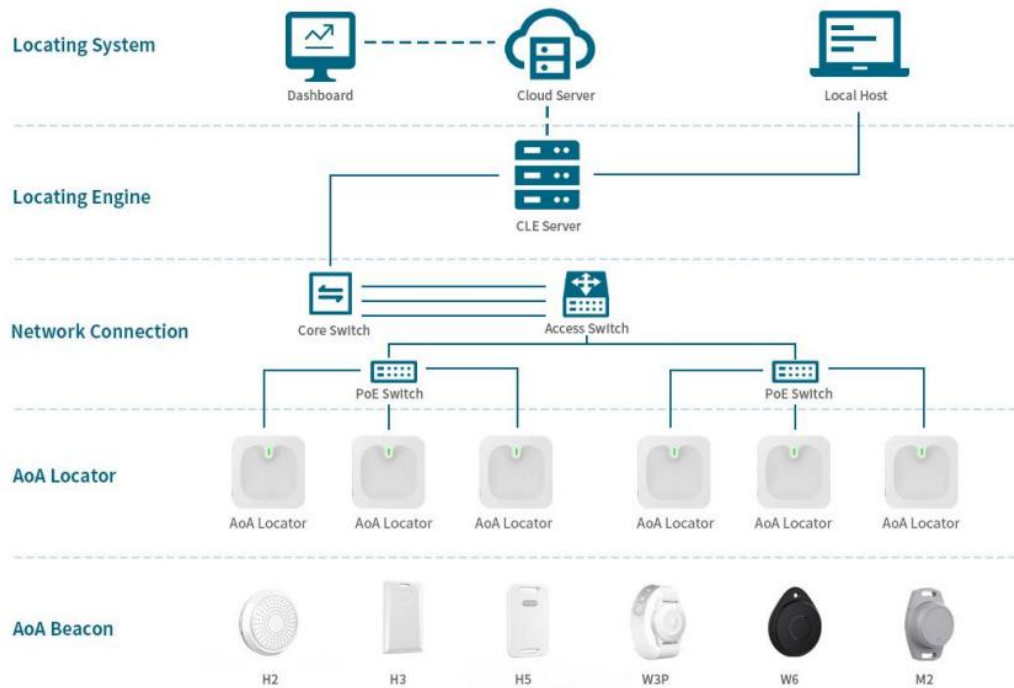
First BLE AoA positioning system in China

The first domestic hardware and software products based on BLE AoA technology, providing high-precision location service.

- 1 AoA locator ✓
- 2 AoA tags ✓
- 3 Location engine ✓
- 4 Configuration software ✓
- 5 Location Api Service ✓
- 6 RTLS Application ✓



Deploy network topology



| class | order number | Sub-name | remarks |
|-----------------|--------------|---------------------------------|---|
| display device | 1 | Monitor | To display the business system |
| | 2 | PC | Used to match the field display |
| locator device | 3 | Locators | Positioning basic equipment |
| | 4 | Tags | Card type / asset type / hand ring type |
| network devices | 5 | core switch | To aggregate all base station data and communicate with the server |
| | 6 | PoE switch | Need to power the location base station POE |
| | 7 | Super CAT 5 class network cable | Power supply and data |
| | 8 | Server / high-performance PC | For deploying the location engine |
| | 9 | core Location engine | Used to calculate the positional information |
| software system | 10 | Business management system | Used to realize the intelligent management of the maintenance factory |

Application Scenarios

Public Safety

Smart
Healthcare

Warehousing
& Logistics

Smart
Manufacturing

Cultural
Museum and
Amusement

Exhibition Hall

Electric power
energy

Smart Retail

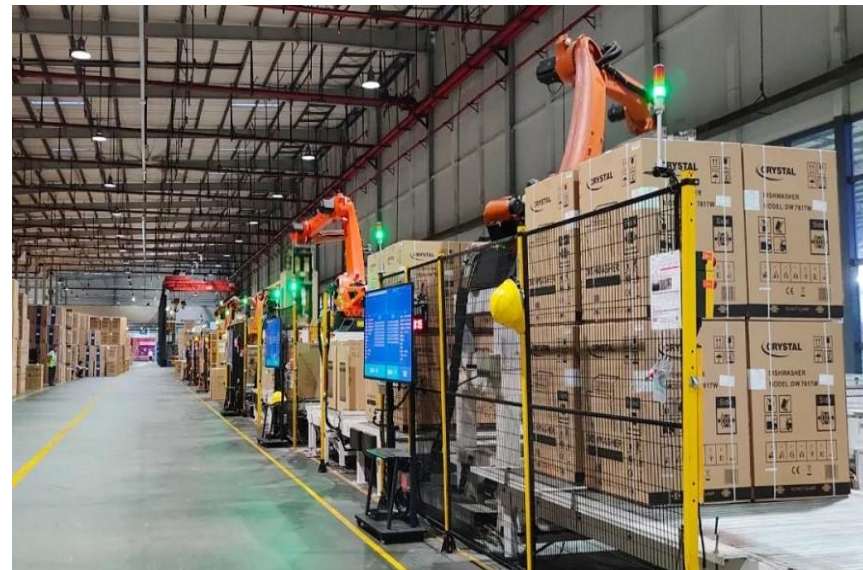
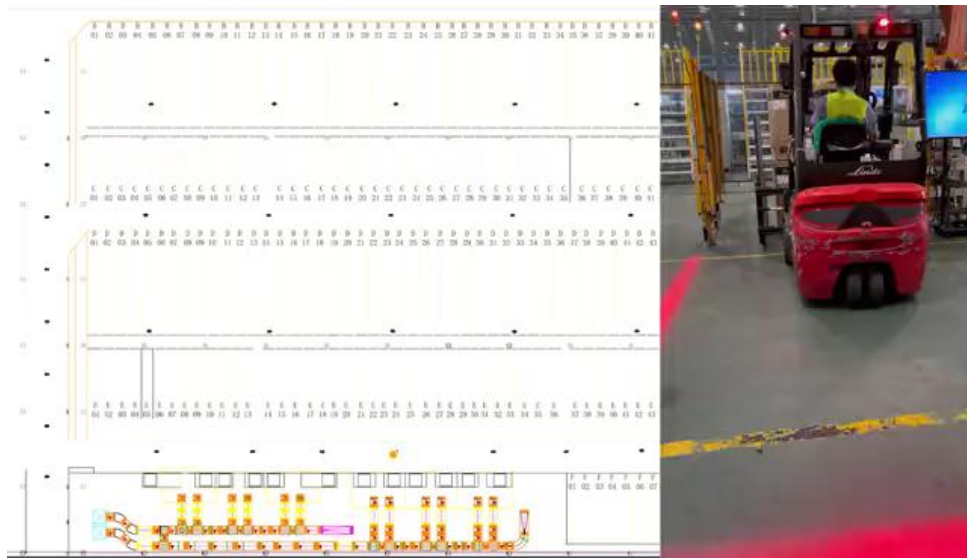
Smart Building
and Park



A 5G fully-connected intelligent manufacturing factory

Based on the fusion localization technology of 5G and AoA, the intelligent warehousing business has been launched in the factory of XX Group's Kitchen & Hot Business Unit. This is the first application of 5G and AoA fusion localization technology in global smart factory operations.

The application of 5G and AoA fusion localization technology ensures accurate transmission of location information of finished goods warehouse forklifts to the warehousing system, which is associated with physical information. The system achieves sub-meter-level accuracy in positioning, increases shipment loading efficiency by 50%, and effectively reduces warehousing costs. The factory manager of the disinfection sub-plant in XX Group's Kitchen & Hot Business Unit said

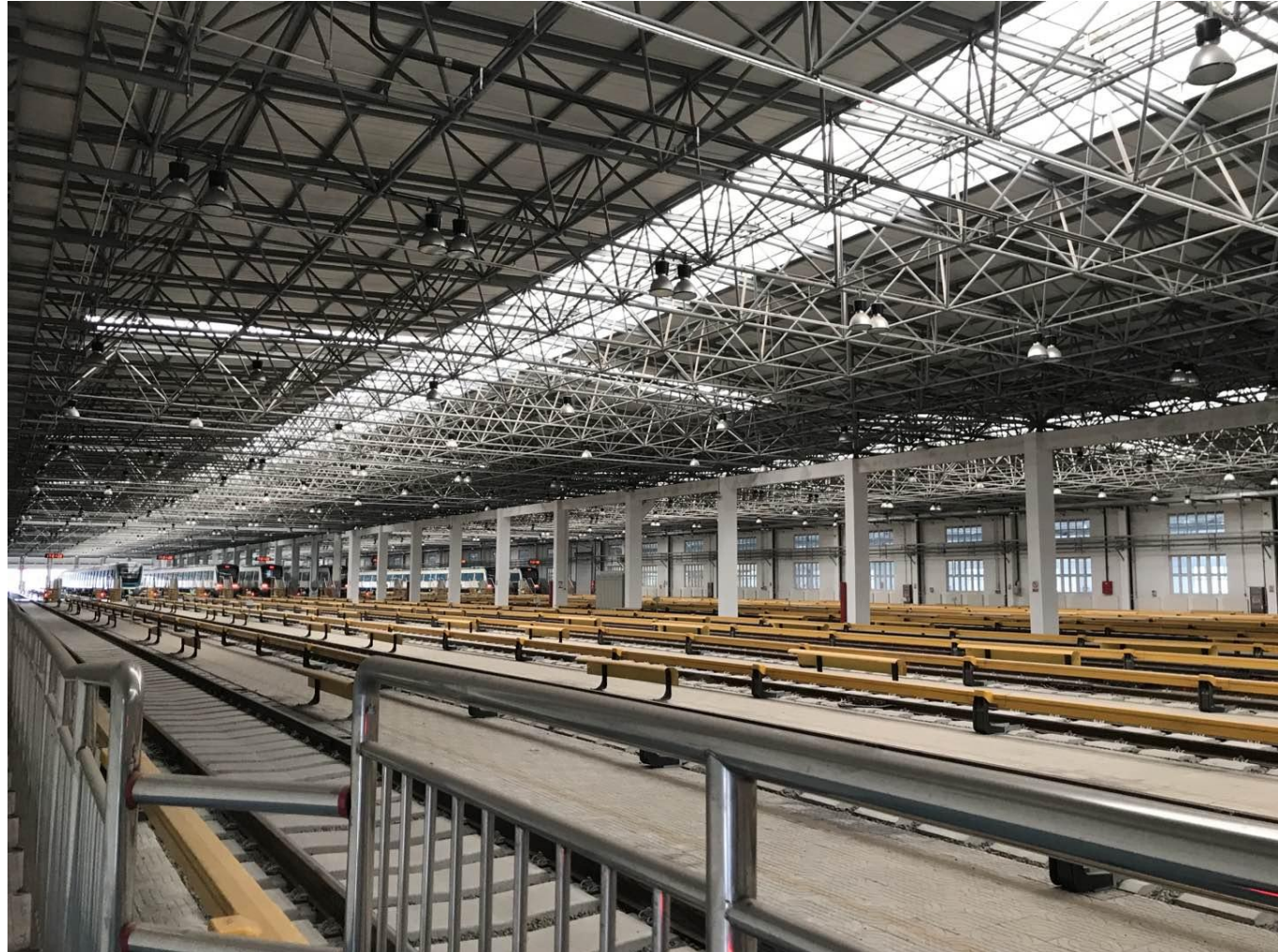


[5G+BLE AoA tracking application in warehousing](#)

Application of BLE AoA in asset management in GMP plants

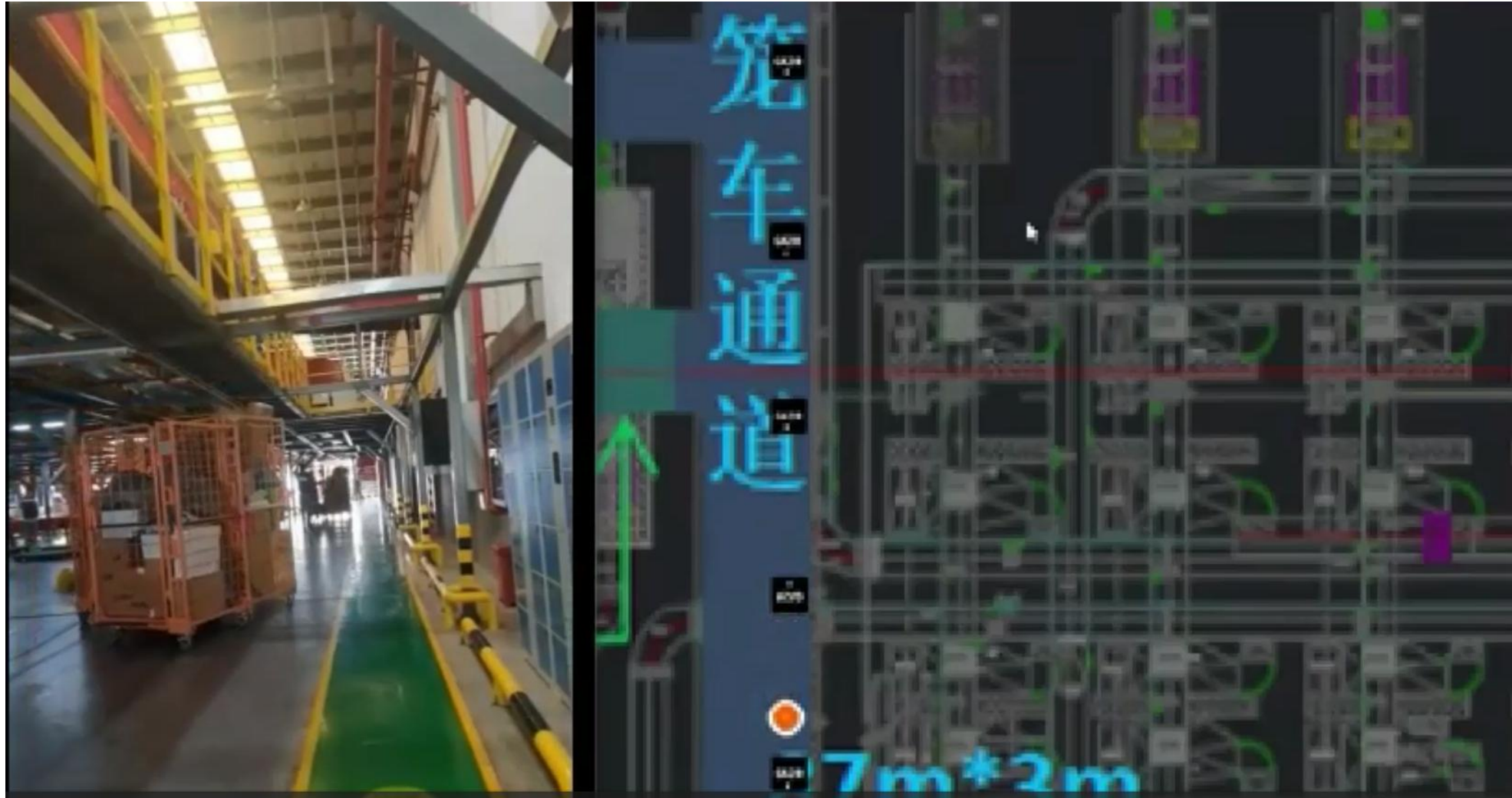


Safety Tracking Management for Subway Maintenance Workshop Personnel



[Subway operator safety tracking](#)

Tracking management of transfer vehicles in the logistics warehouse



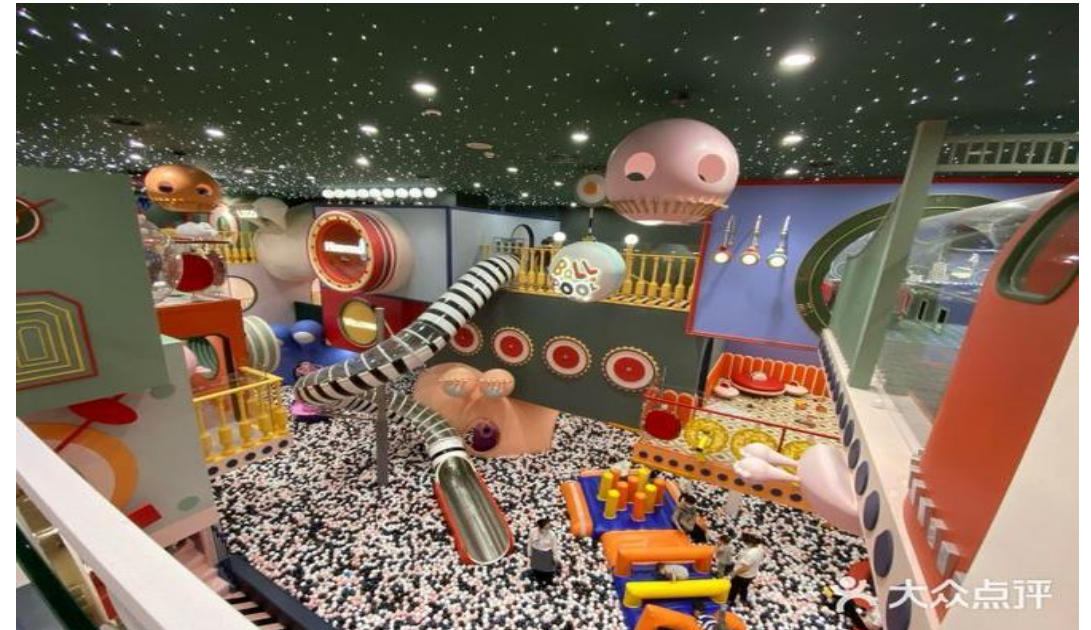
[Tracking management of transfer vehicles](#)

Indoor kids safety positioning

It provides precise and real-time positioning of children, offering safety alerts and allowing parents and children to play freely in the amusement park.

"Relax and let the parents enjoy their time with their children!"

"When kids go wild, it can be exhausting to search all over the place" Parents say.

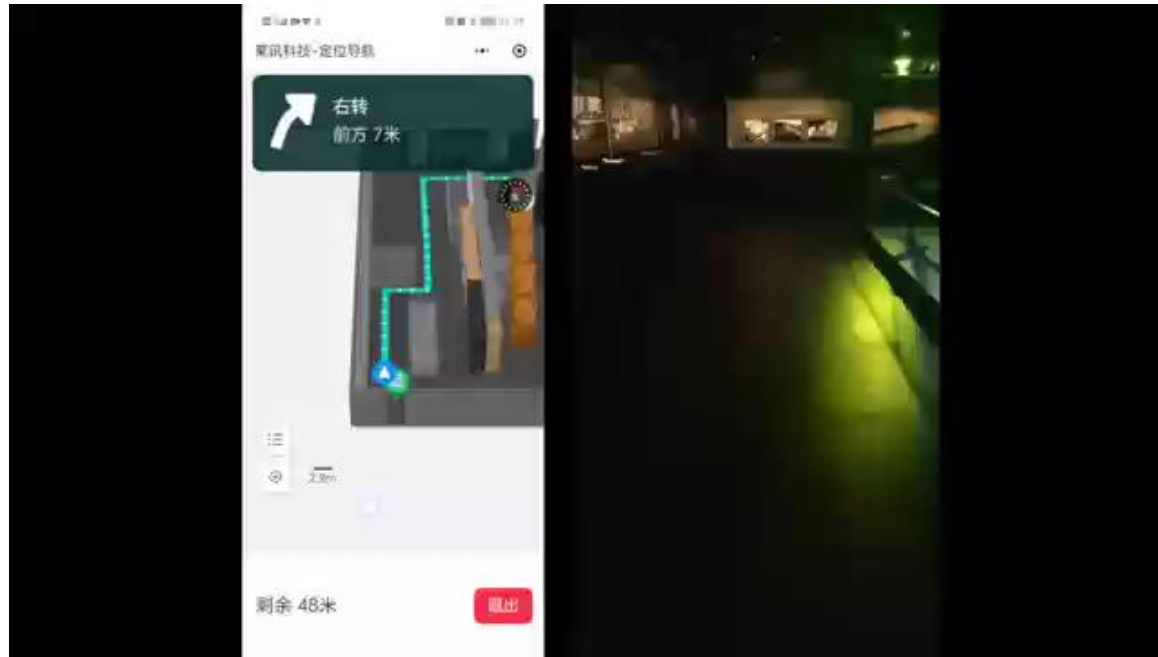


[BLE AoA application in children's security](#)

Classic cases : library

The National Library of China

Indoor navigation system based on BLE AOA
+ mobile phone positioning technology.



Chinese National Library

国家典籍博物馆
NATIONAL MUSEUM OF CLASSIC BOOKS



Project Scope

Chinese National Library



Location and Time

Beijing, China, 2023



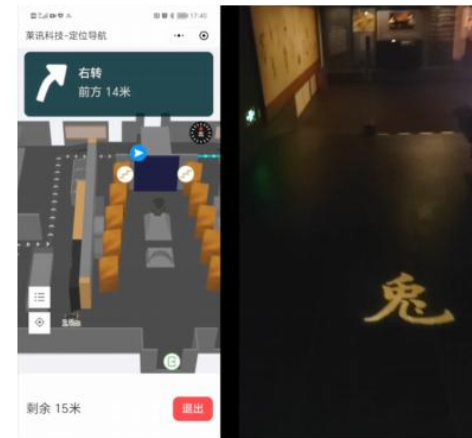
Main Work

- Navigation in exhibition hall
- Routes history
- Introduction pop-up



Tech stack:

- WeChat miniprogram
- Ble-AoA





- Prison violence events drops by 90%
- Response time to emergencies reduced by 95%
- Prison staff workload reduced by 80%

Detachable positioning bracelet

High precision indoor positioning locator

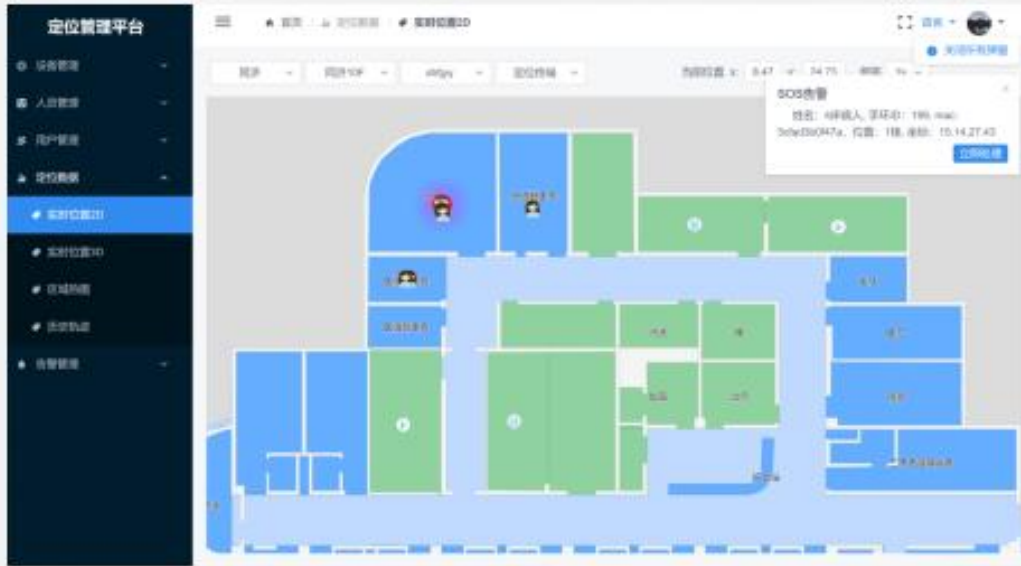


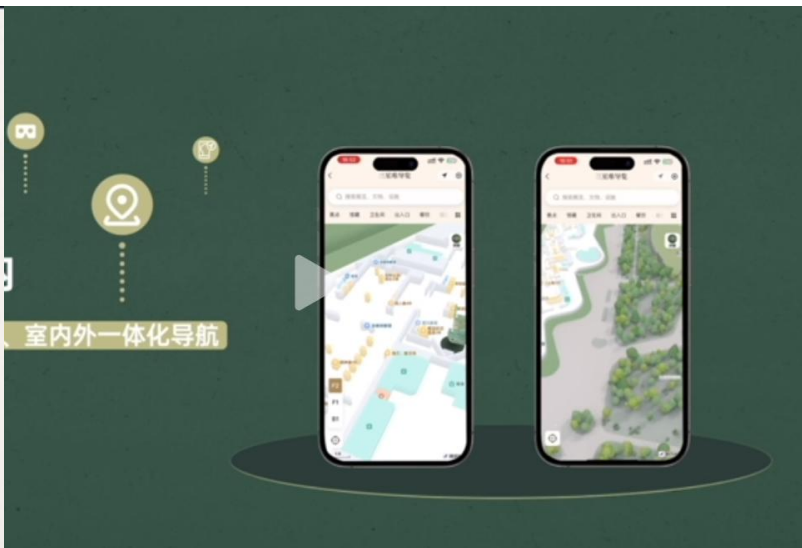


- Integrated with smartphone app
- Viscosity of brand with customers
- Precision marketing increased sales performance
- Interactive marketing received good reputation



Classic cases : Smart Hospital



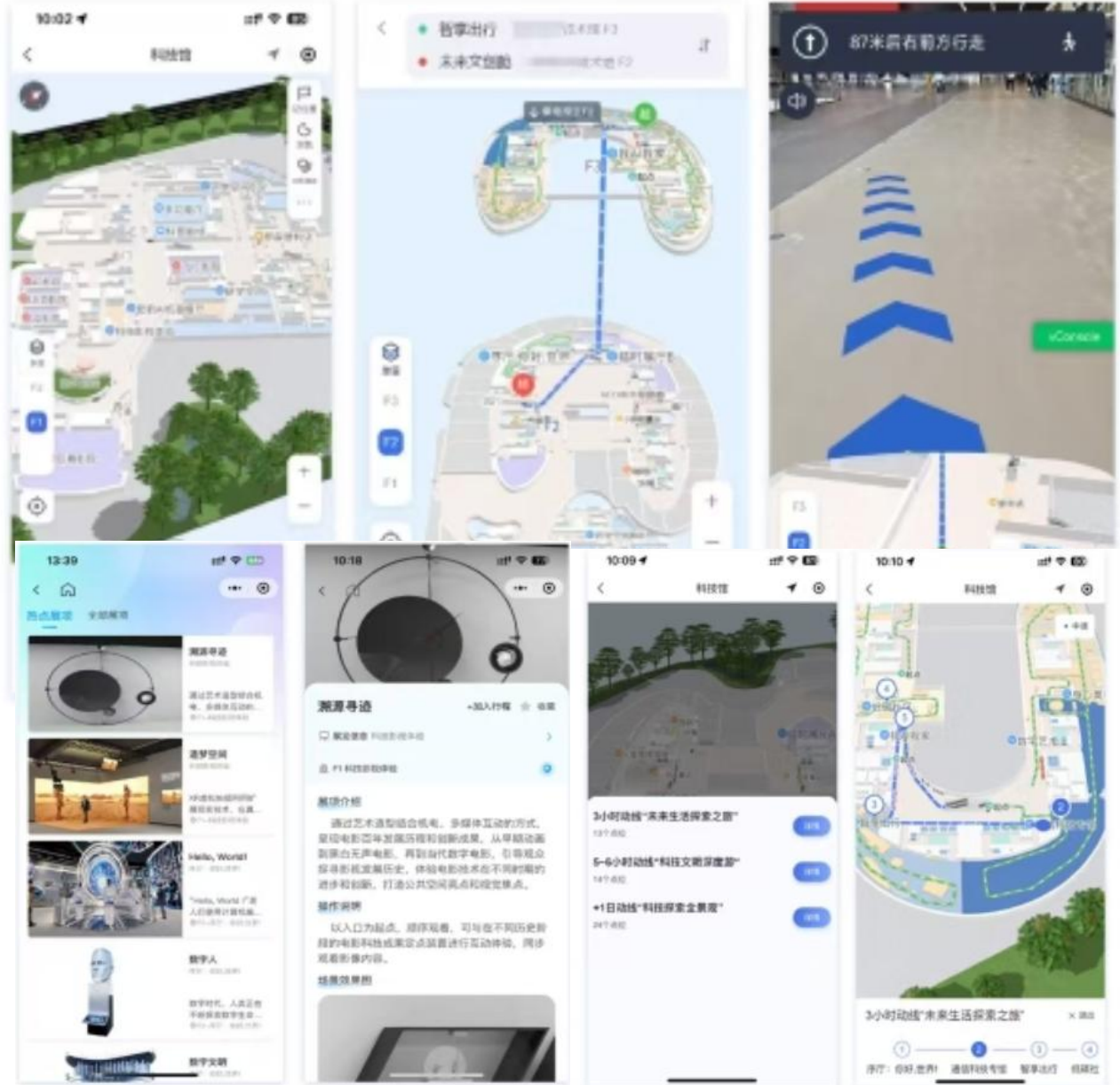


Classic cases : Science and Technology Museum



深圳科技馆项目
SZ Science and Technology Museum

Relying on AOA high-precision positioning technology to achieve centimeter-level accurate navigation indoors and outdoors, the intelligent guiding system quickly plans the optimal route and is integrated with smart voice explanations, 3D dynamic presentations, and other functions, constructing a smart popular science ecosystem of 'meter-level positioning - intelligent path planning - multi-dimensional interactive experience.' This solution provides visitors with an immersive visiting service and has become a benchmark case for the digital transformation of science and technology venues.



Classic cases : Smart Supermarket



商超管理

人员、资产、货品管理、顾客推车行为分析

设备状态采集、照明灯节能

人员及推车定位功能

冷柜温度采集联动节能 设施功耗监视、控制节能

冷柜开合状态采集 塑料袋剩余状态监测

The central image is a composite of a dashboard and several camera feeds. The dashboard displays various data points and charts. The camera feeds show different areas of the supermarket, including aisles, checkout counters, and storage areas.



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2023 10 19 13:43

2023 10 19 13:35



Retail Public Service Expo

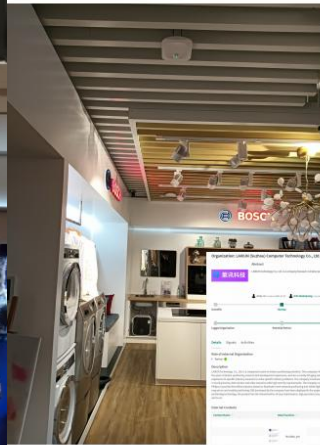
23 2023 omlox China Seminar



Bosch Retail Store

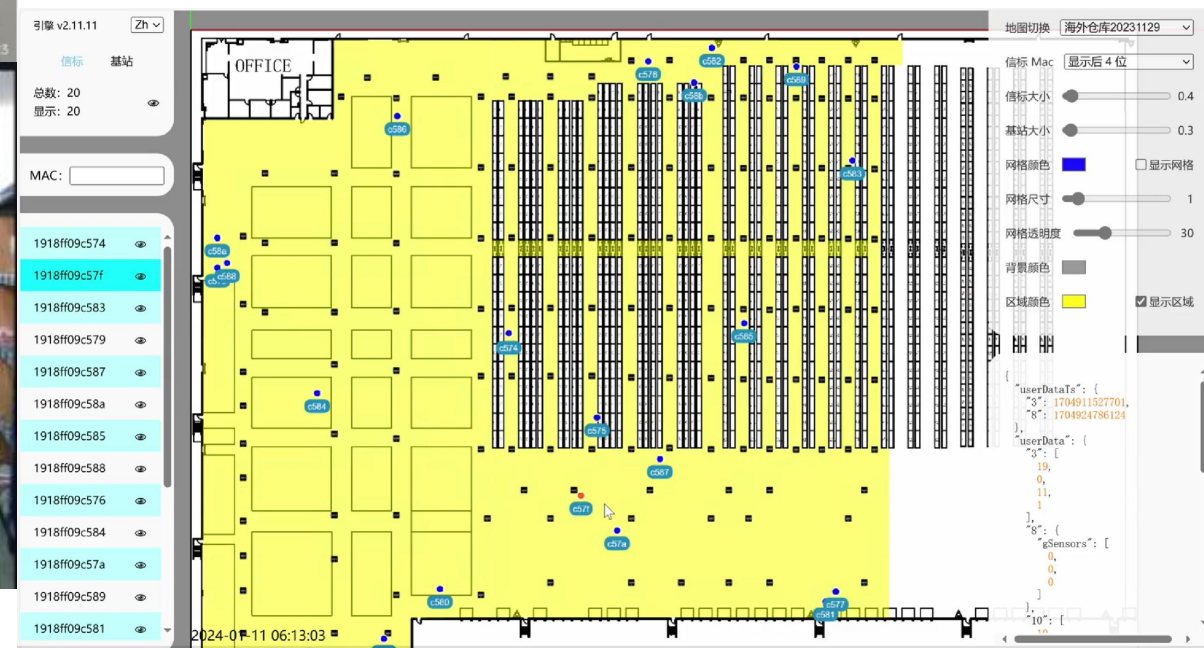
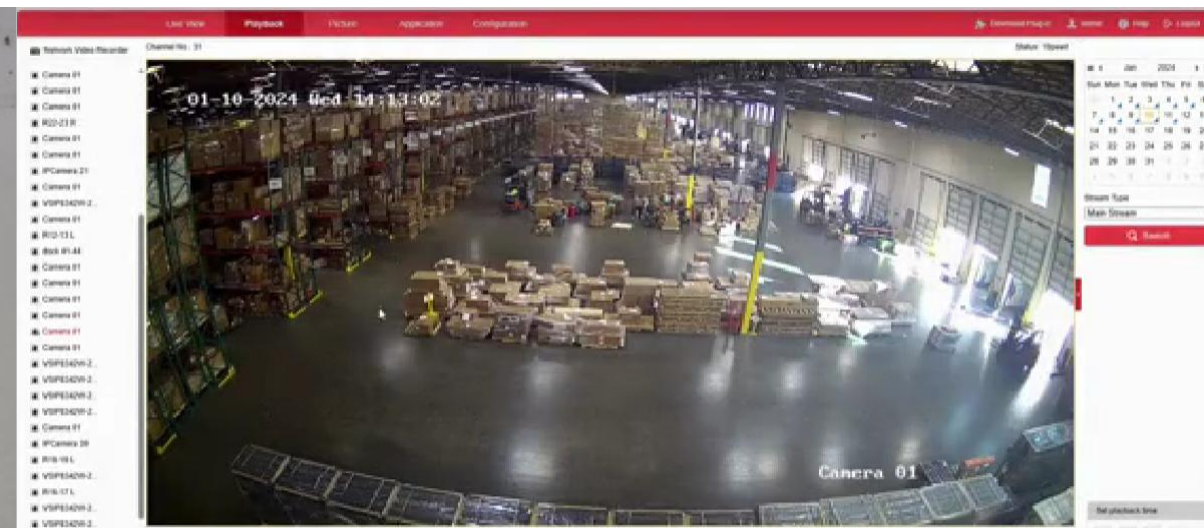
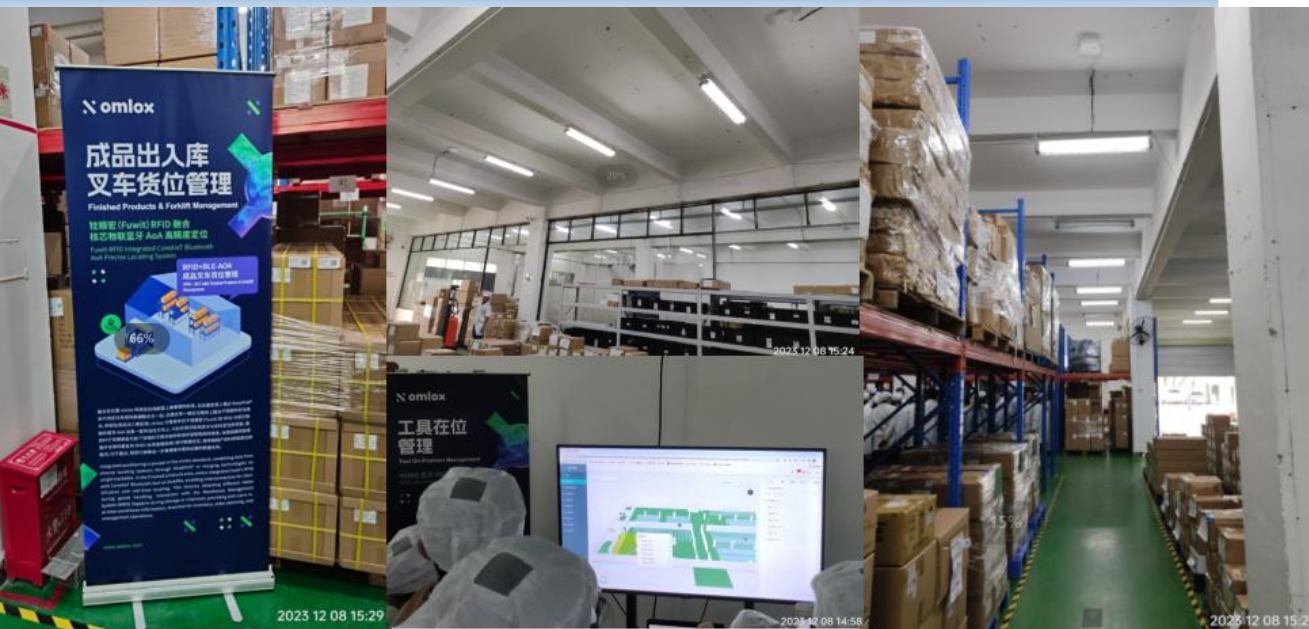


| | | |
|--|--------------------------|--|
| | Project Scope | Bosch retail store |
| | Location and Time | Shanghai, China, 2023 |
| | Main Work | <ul style="list-style-type: none"> Navigation in retail store Statistics in retail store |
| | Tech stack: | <ul style="list-style-type: none"> WeChat miniprogram Ble-AoA |



24 2023 omlox China Seminar

Classic cases :Warehouse RFID + AOA Application



Trolley Tracking System

GE Healthcare



GE Healthcare

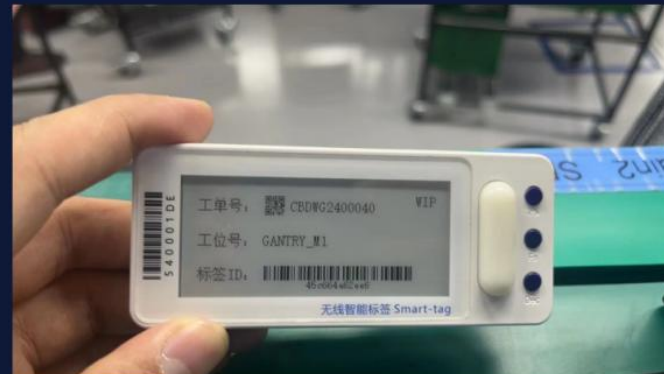
Intralogistics

In order to find all the trolleys belonging to the order in a factory.

Integration Solution -Trolley

Use Ble AoA to track the tag and e-ink tag on trolley. Calculate the timing spent during each process.

Use e-ink tag to display important information during manufacturing.



Classic cases :Smart Manufacturing Factory







1分钟精准定位!
香港首个 全覆盖的智慧货运中心

庫位信息

庫位
庫位
庫區
託盤數
總件數
重量

实现从入库到出库 全程动态可追踪

@菜鸟集团

菜鸟香港 eHub 全面接入 , 成为香港首个
全场景覆盖的智慧货运中心! #菜鸟香港 eHub #...

Customers and partners



meland

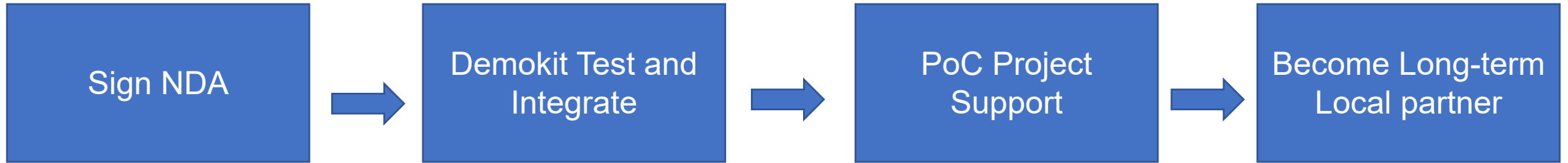
DIOR



三星堆博物馆
SANXINGDUI MUSEUM



How to be our partner?



THANKS

Jelin Zeng,
Business Director | CoreAIoT Ltd.

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