Tactile Asset Management

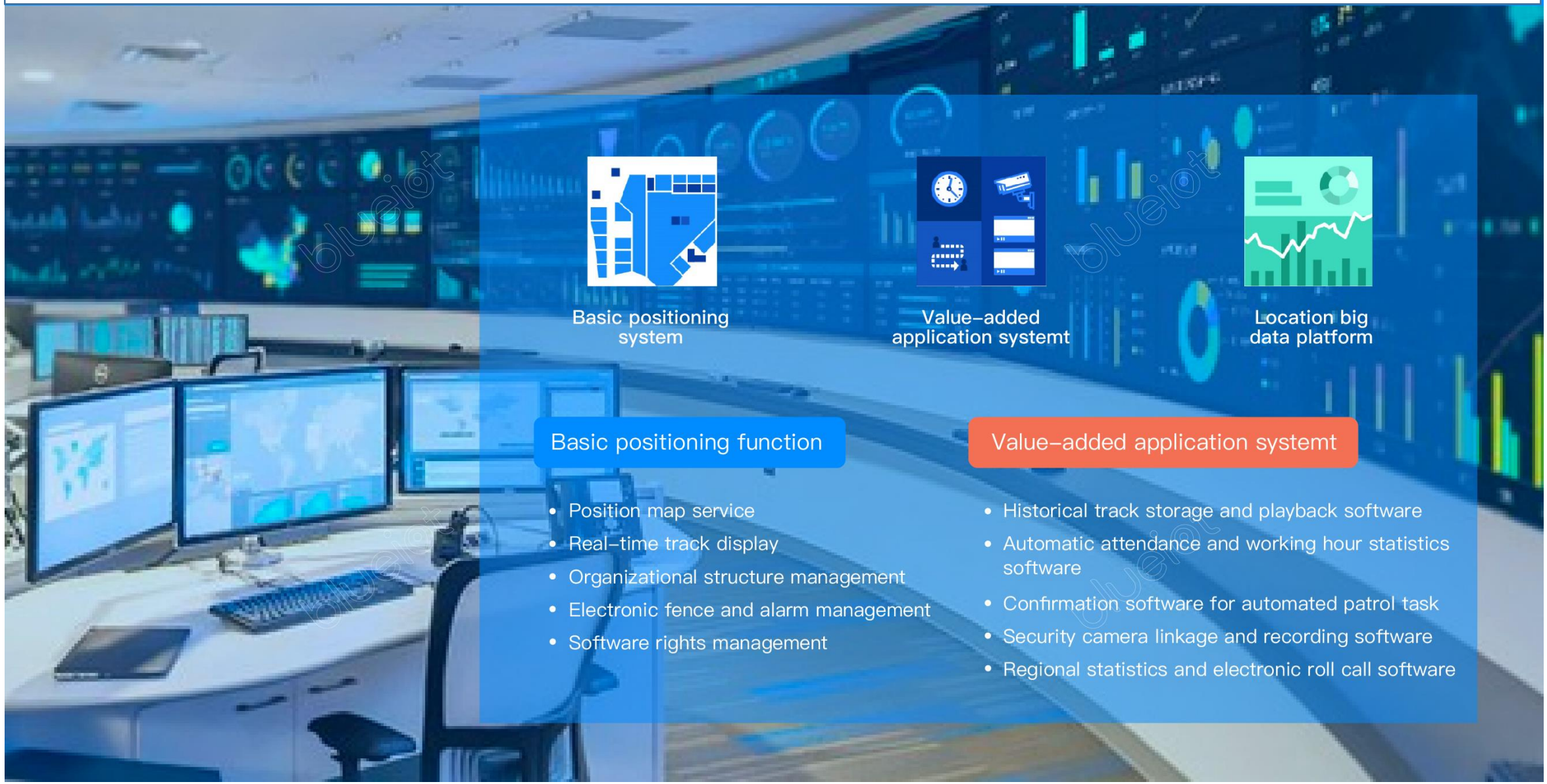
tactile

rugged solutions —

THE COMPANY

- Head Office and service center in Stockholm
- Focused on rugged IPC products and IT Solutions
- Head Office and service center in Stockholm
- Close cooperation with leading partners In Taiwan and the United States.
- Own production, assembly and configuration locally in Sweden.
- Serivce / repair and support is performed in Sweden.

Positioning System Introduction



Basic positioning system

Value-added application systemt

Location big data platform

Basic positioning function

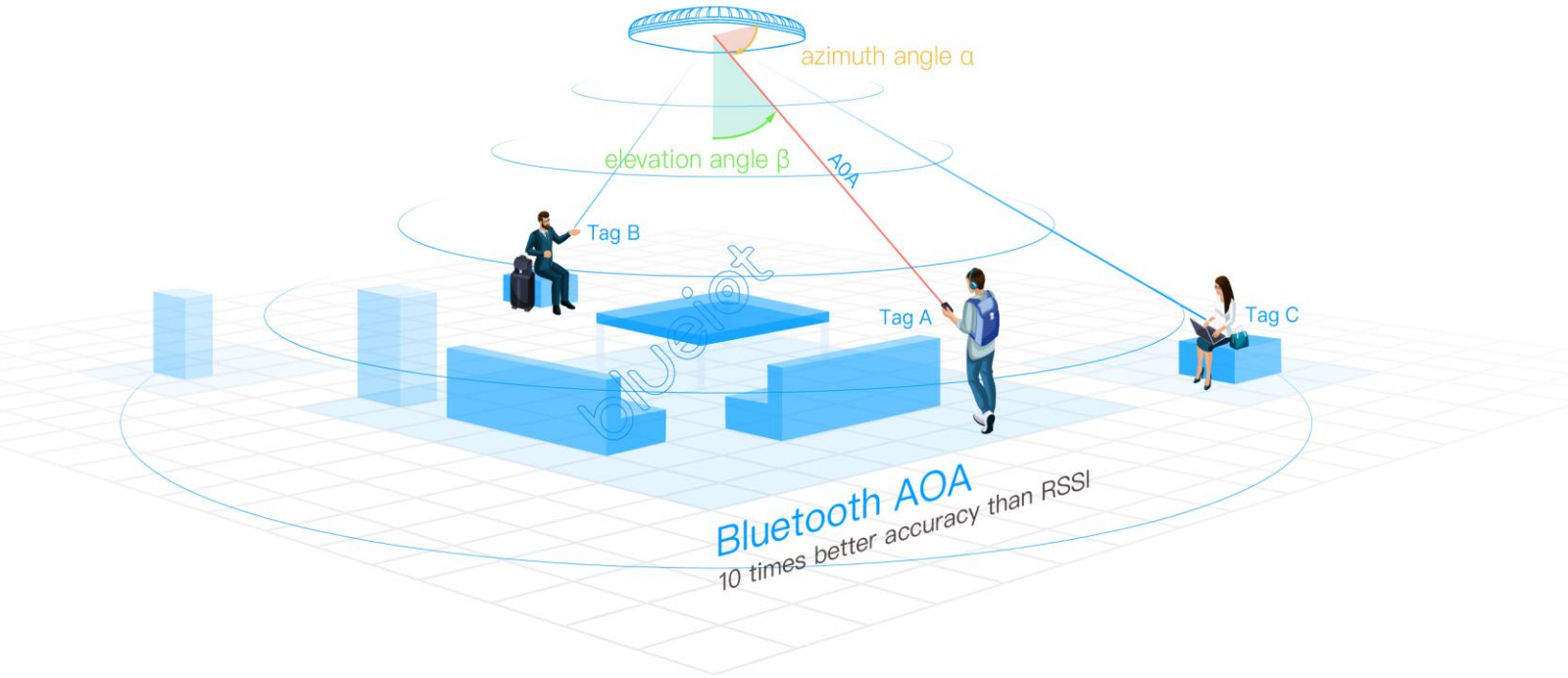
- Position map service
- Real-time track display
- Organizational structure management
- Electronic fence and alarm management
- Software rights management

Value-added application systemt

- Historical track storage and playback software
- Automatic attendance and working hour statistics software
- Confirmation software for automated patrol task
- Security camera linkage and recording software
- Regional statistics and electronic roll call software

blueiot

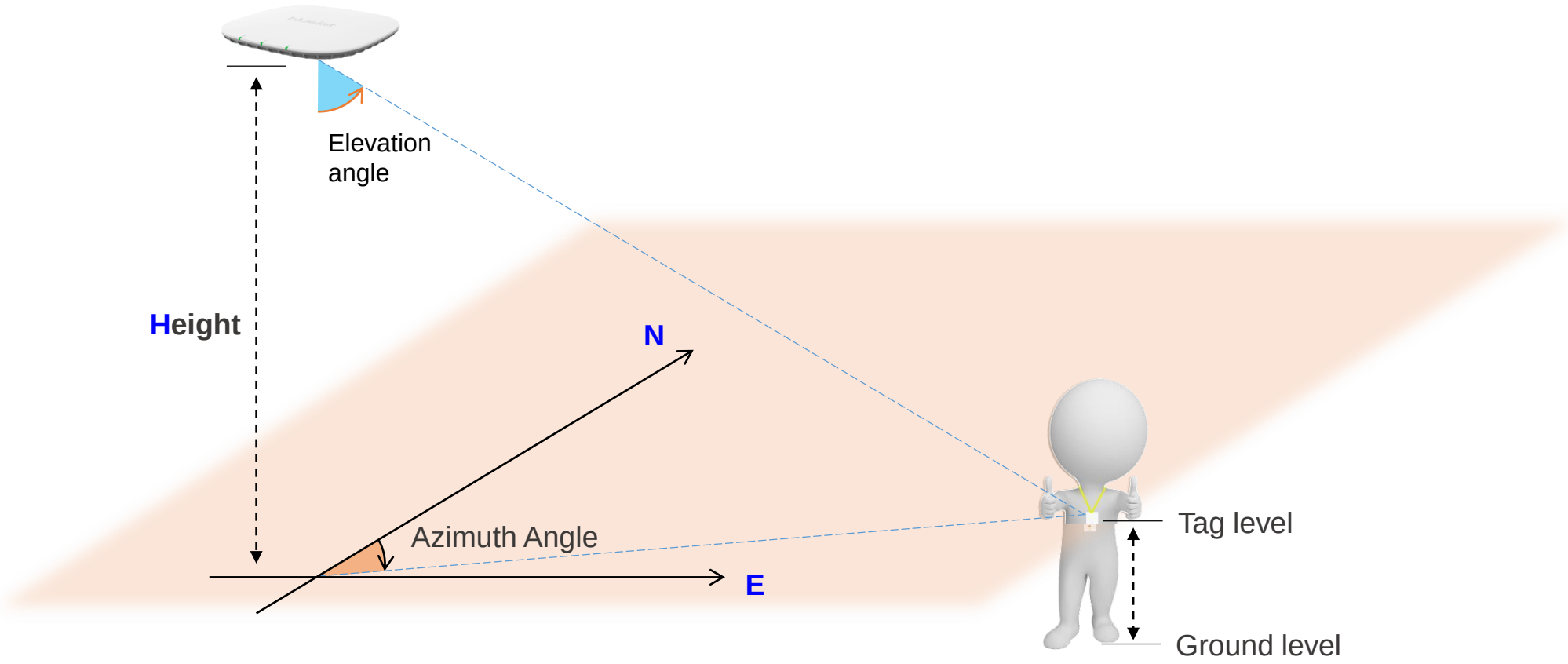
Technology Overview



Typical accuracy: 0.1 ~ 0.5m

- Locating with one anchor and two angles
- Accuracy level down to 10cm
- Supports Bluetooth 5.1
- Compatible with BLE 4.0 tags or above
- Compatible with mobile phones

How does Bluetooth AoA work ?



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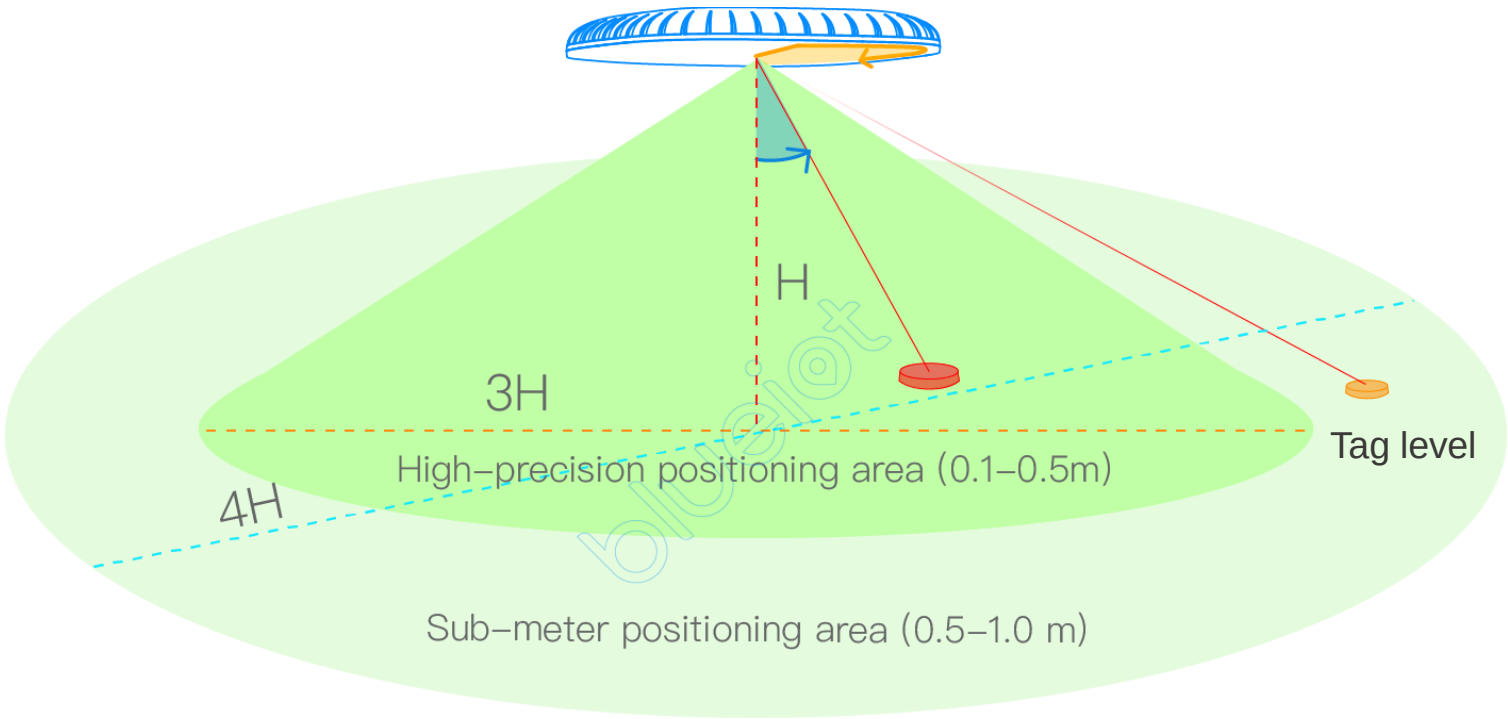


Locating with one single locator

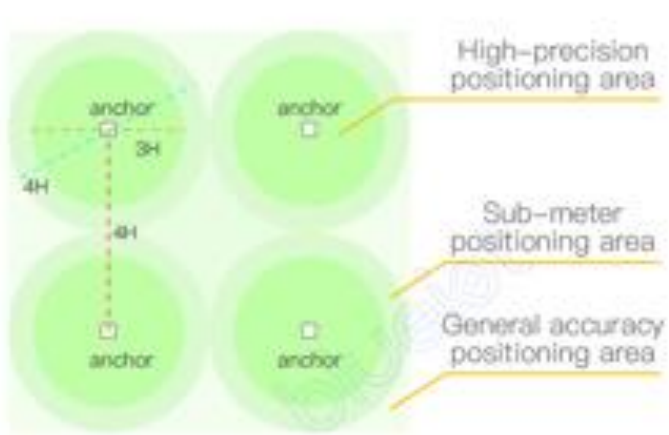
Height difference		
	< 5m	High precision locating area 3H*
		Sub–meter accuracy 4H*
	>5m	16~20meters

* Based on laboratory test results.

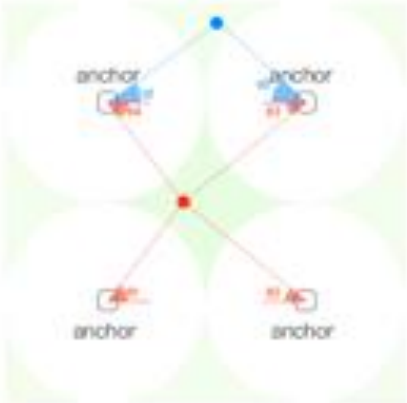
How does Bluetooth AoA work ?

Multi-anchor and large area positioning

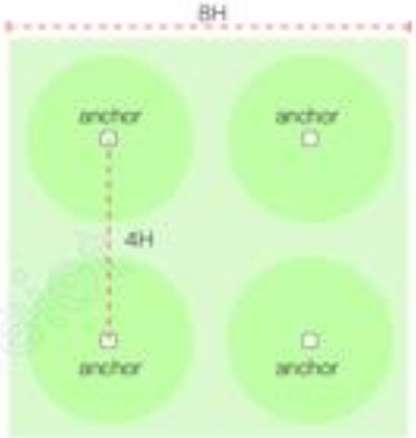
Strapdown combination of multiple anchors to obtain larger positioning coverage space
Multiple anchor course angel calculations improve the global spatial accuracy level



Coverage area of each anchor



Joint calculation of course angle of multiple anchors



High-precision/sub-meter precision full coverage

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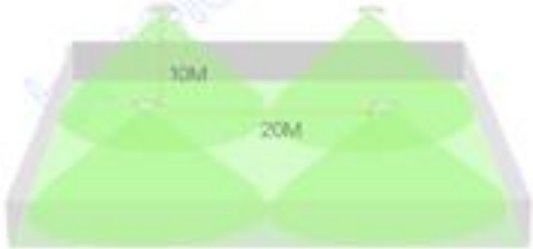
How are AoA anchors deployed?

Different ceiling height scenarios	Recommended anchor spacing	Typical average accuracy	Schematic diagram
3.5 meters (General office buildings)	10–12 meters	0.1–1.0 meters	
5 meters Supermarket/station /warehouse	12–16 meters	0.3–1.0 meters	
10 meters Exhibition/Airport	16–20 meters	0.3–1.0 meters	

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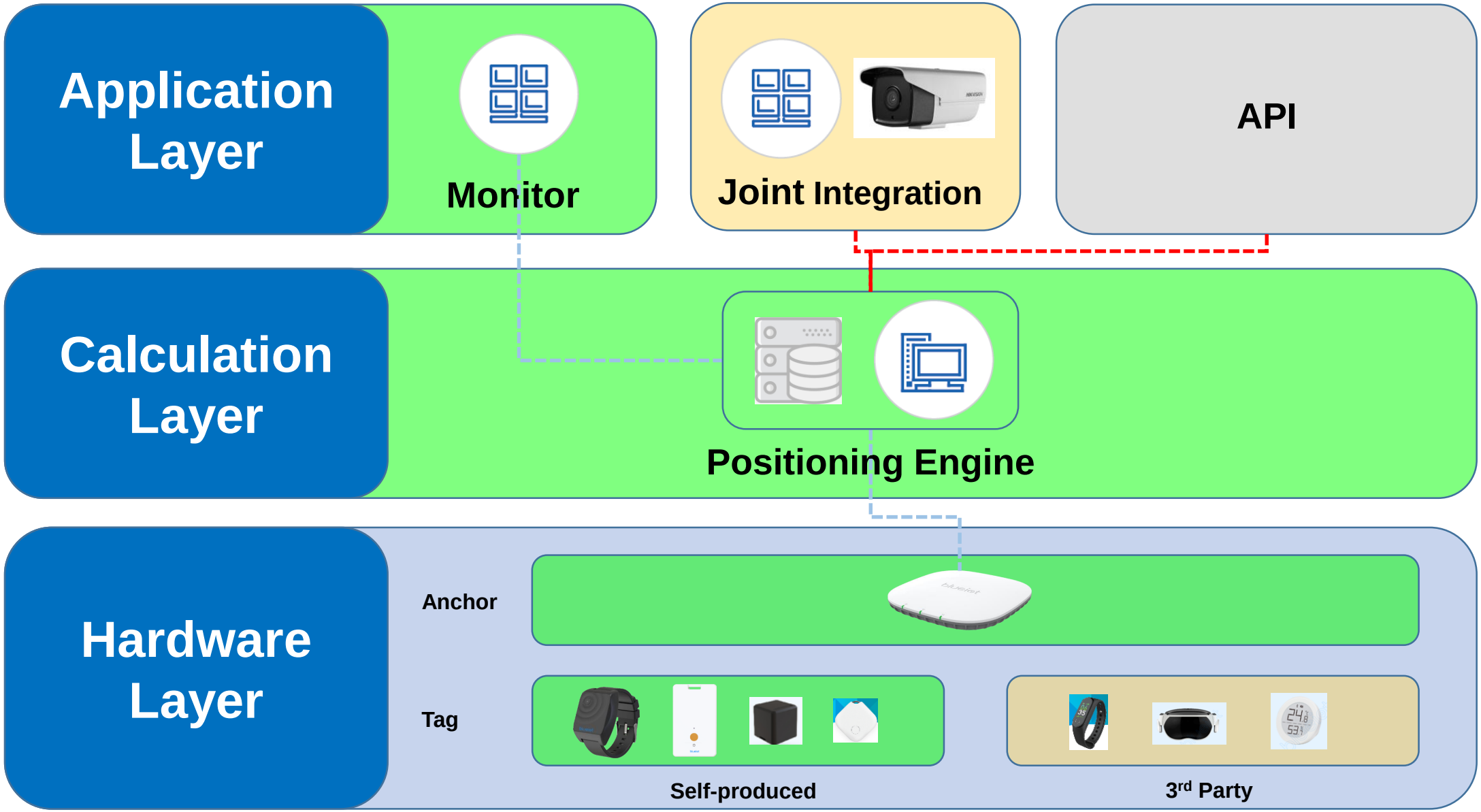
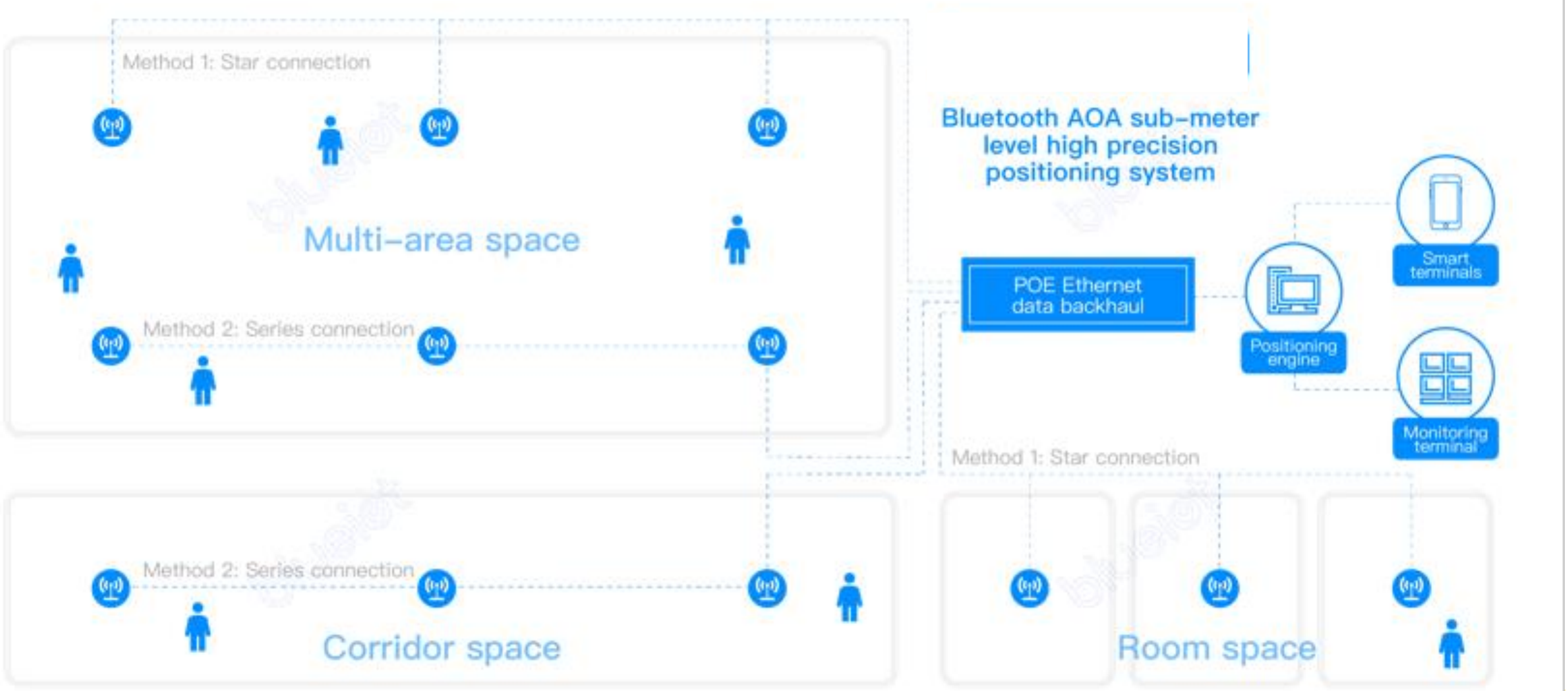
Solution


Application Layer
Monitor
Joint Integration
API
Calculation Layer
Positioning Engine
Hardware Layer
Anchor
Tag
Self-produced
3rd Party

Methods


Method 1: Star connection
Multi-area space
Method 2: Series connection
Bluetooth AOA sub-meter level high precision positioning system
POE Ethernet data backhaul
Positioning engine
Smart terminals
Monitoring terminal
Method 1: Star connection
Method 2: Series connection
Corridor space
Room space

Advantages of Bluetooth AOA

Accurate

Positioning accuracy
down to 0.1-0.5m

Long-lasting

Lower power consumption
battery lasting up to 5 years

Small

Various tags as
small as a coin

Low-cost

The lowest total cost of
ownership in the industry

High Concurrence

One anchor supports
500 tags (1Hz)

Open Ecology

Compatible with Bluetooth terminals,
accurate LBS for smartphone

Products

Locating tag

BT1000-w (Tb1100-w)

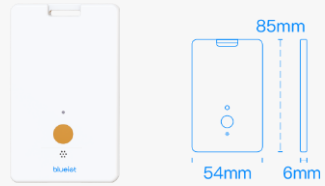
Wristband | Bluetooth Location Tag

Battery type：Rechargeable LI
Working hours：charge every 4 ~ 6 months
Working temperature：-20 ~ 70℃
Waterproof rating：IP65
Size：54.5 * 40 * 16.5mm

- Buzzer
- Button alarm
- Vibrator
- Swiping RFID

BT1000-g (Tb1100-g)

Badge | Bluetooth Location Tag



Battery type：Rechargeable LI
Working hours：charge every 4 ~ 6 months
Working temperature：-20 ~ 70℃
Working humidity：10% ~ 90% no condensation
Size：85 * 54 * 6mm

- Buzzer
- Button alarm
- Vibrator
- Swiping RFID

Locating anchor

BA3000-p (outdoor)

Data interface：Standard Ethernet
Power interface：POE
Working temperature：-40 ~ 80℃
size：330mm*330mm*53mm
Ingress Protection: IP67

BA3000-t (indoor)

Data interface：Standard Ethernet
Power interface：POE
Working temperature：-20 ~ 70℃
size：230mm*230mm*35mm
Ingress Protection: IP43

BT2000-z
Assets

BT2000-z
Patch

BT1000-p
bracelet

BT1000-e
Children watch

BTS1000-w
fitness watch

BT4500-b
Anti-dismantle

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Products

Tags with open ecosystem

One line of code, access any Bluetooth terminal (BT4.0+)
Empower mobile phones, PDAs, watches, bracelets, with sub-meter precision positioning capabilities

Fitness wristband
BE101-zw

tracks heart rate displayed on color screen, 20 days' standby time

Patch tag
BE201-zb

Light & Compact,
Replaceable button battery

Temperature and humidity tag
BE301-cg

Sensors with industrial-level precision, data can be uploaded

MR Glasses tag
BE401-xr

HD display of Mix Reality 3D, gestures and voice interaction

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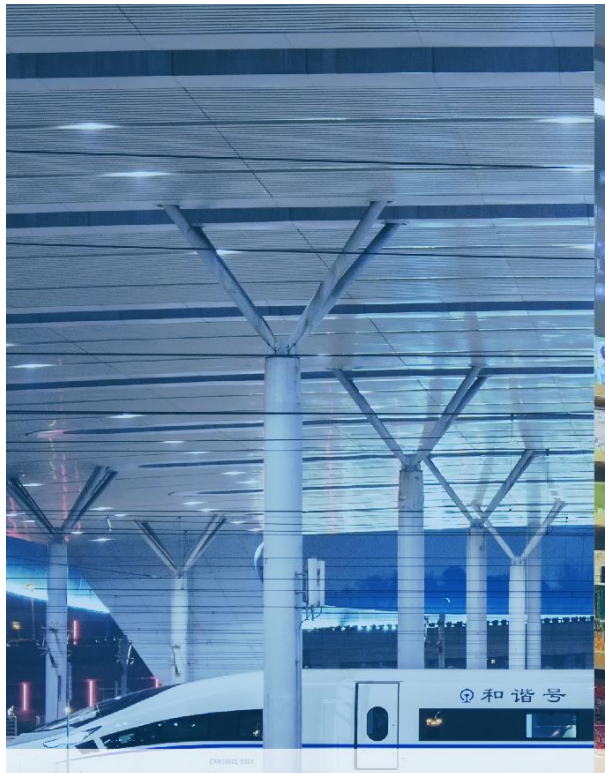
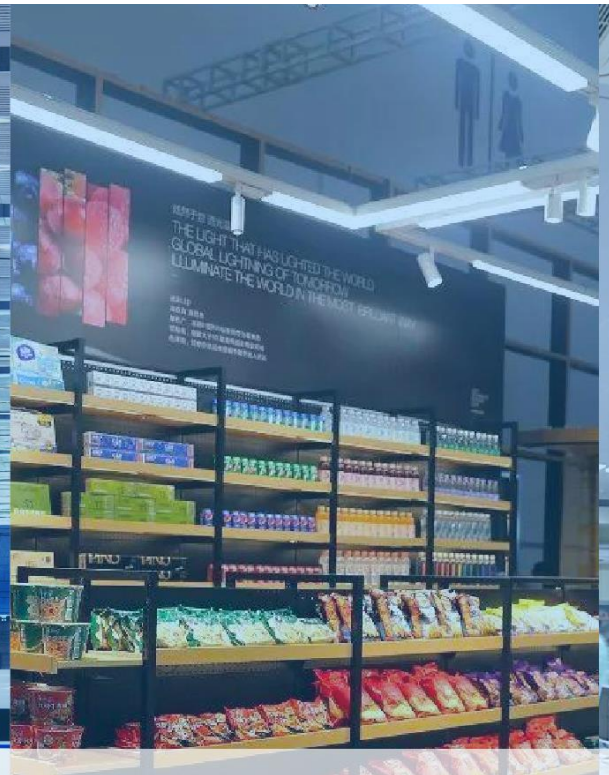
Application Scenario



Transportation

Effectively release the value of the location data of the "last mile" of the transportation hub, improve the intel-ligent traffic management and per-sonalized service

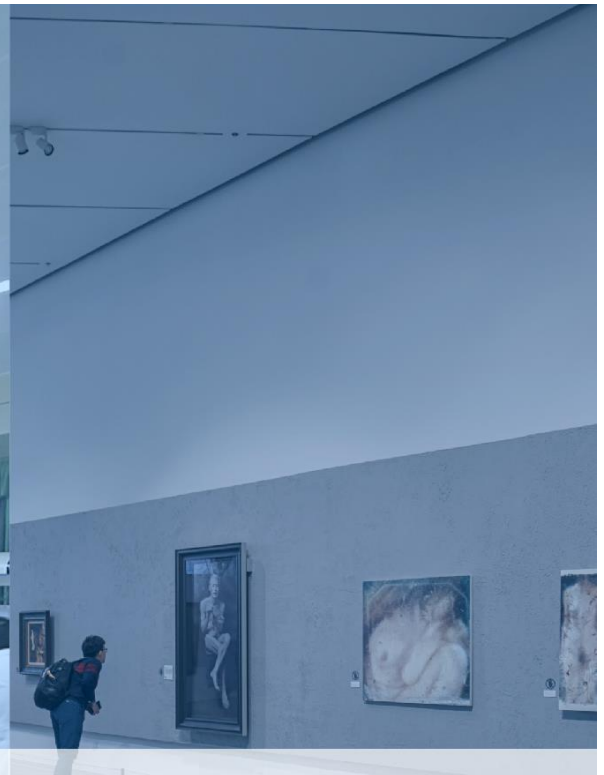


Retail

Shopping cart and goods positioning management, consumer navigation and shopping guide, empowers su-permarket big data analysis and refined management

Hospital/Healthcare

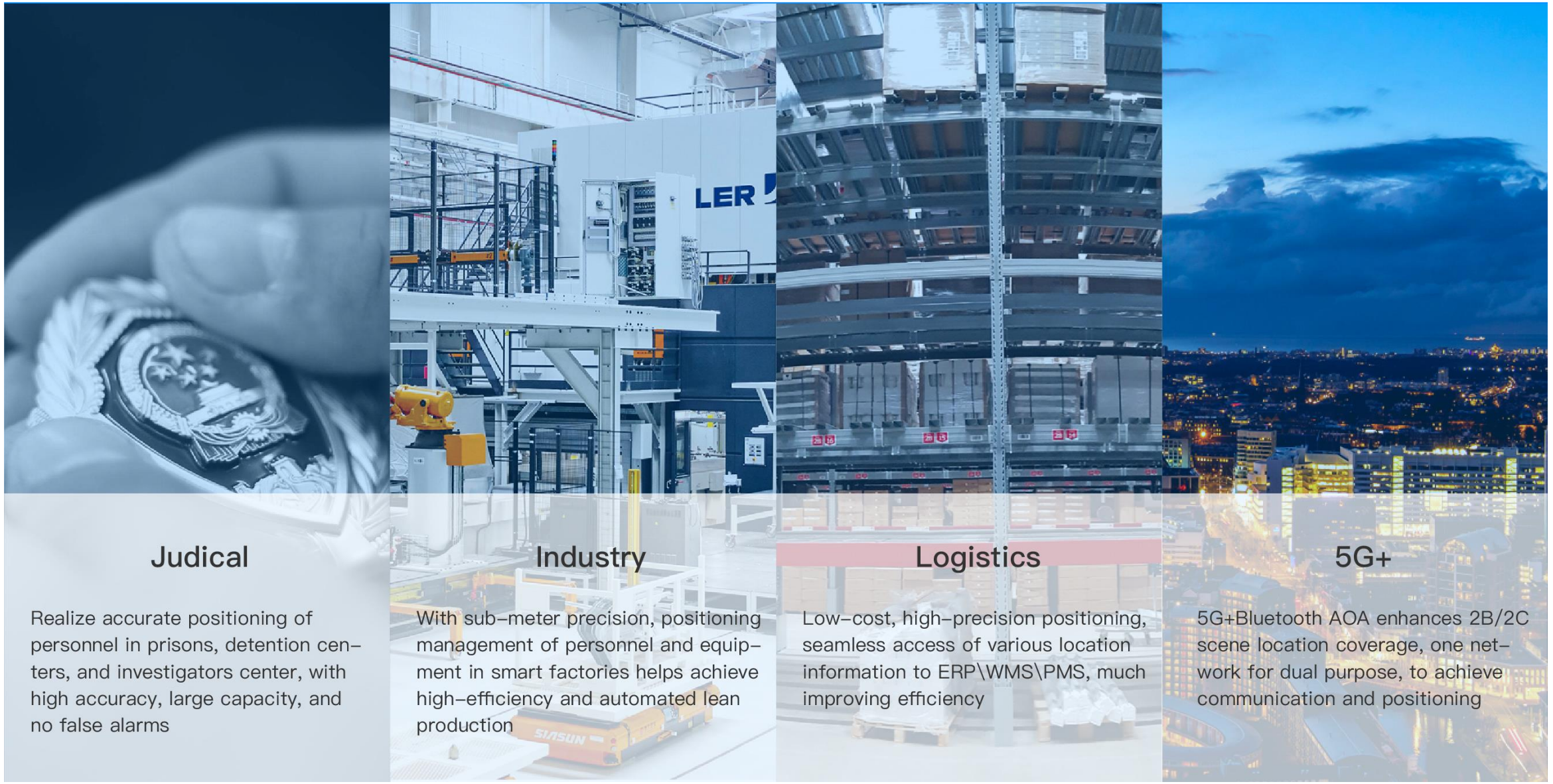
Location-based internal management and business processes bring more reliable services and smarter hu-man-to-human interaction



Exhibition

Using mobile phone navigation, low-cost Bluetooth tags position venue precisely, building a new model of exhibition location data value

Application Scenario



Judical

Realize accurate positioning of personnel in prisons, detention centers, and investigators center, with high accuracy, large capacity, and no false alarms

Industry

With sub-meter precision, positioning management of personnel and equipment in smart factories helps achieve high-efficiency and automated lean production

Logistics

Low-cost, high-precision positioning, seamless access of various location information to ERP\WMS\PMS, much improving efficiency

5G+

5G+Bluetooth AOA enhances 2B/2C scene location coverage, one network for dual purpose, to achieve communication and positioning