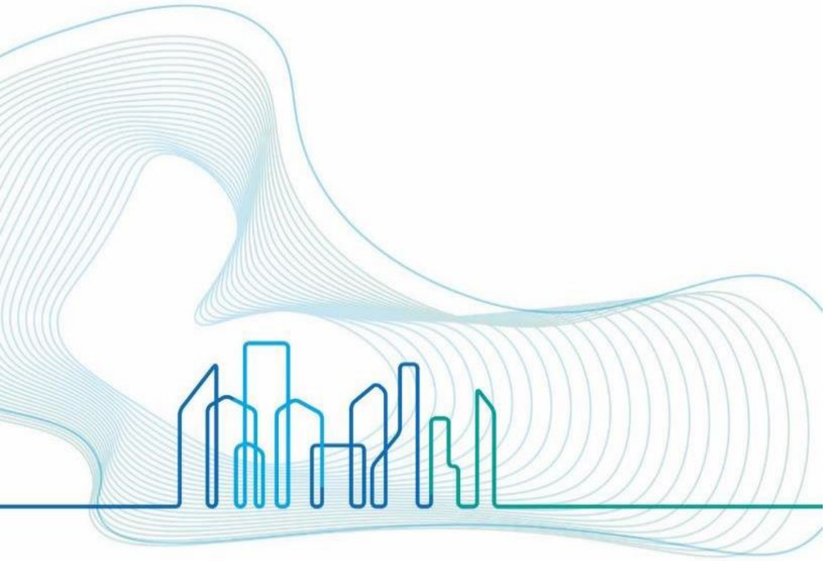
XenseTech

XensePath

UWB Positioning & Safety Management System



XenseTech — Company Profile

SMART CONSTRUCTION TECHNOLOGIES

XenseTech Limited ("XenseTech") was sparked in the new era of Construction 2.0, a time of rebirth and reinvention of construction industry processes, products, people and paradigm.

Based in the Science Park, XenseTech is purposed for **bridging the gap between idea and implementation** in this Renaissance Moment.

We strives to collaborate with institutes, researchers and innovators **to develop and provide total sustainable solutions to all stakeholders of the construction industry** in Hong Kong.

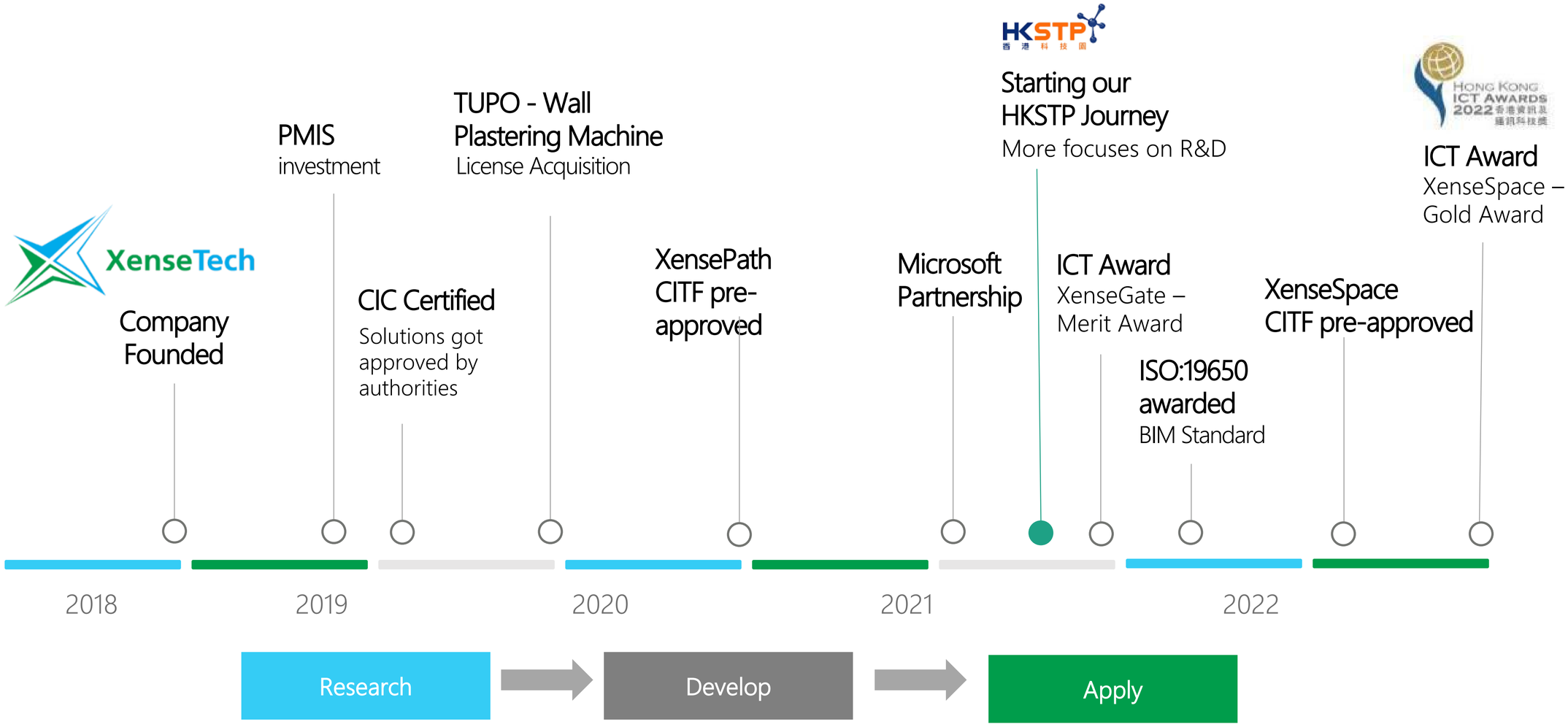
Research → Develop → Apply

XenseTech

Registered address: Unit 715, 7/F, Building 12W, 12 Science Park West Avenue, Hong Kong Science Park

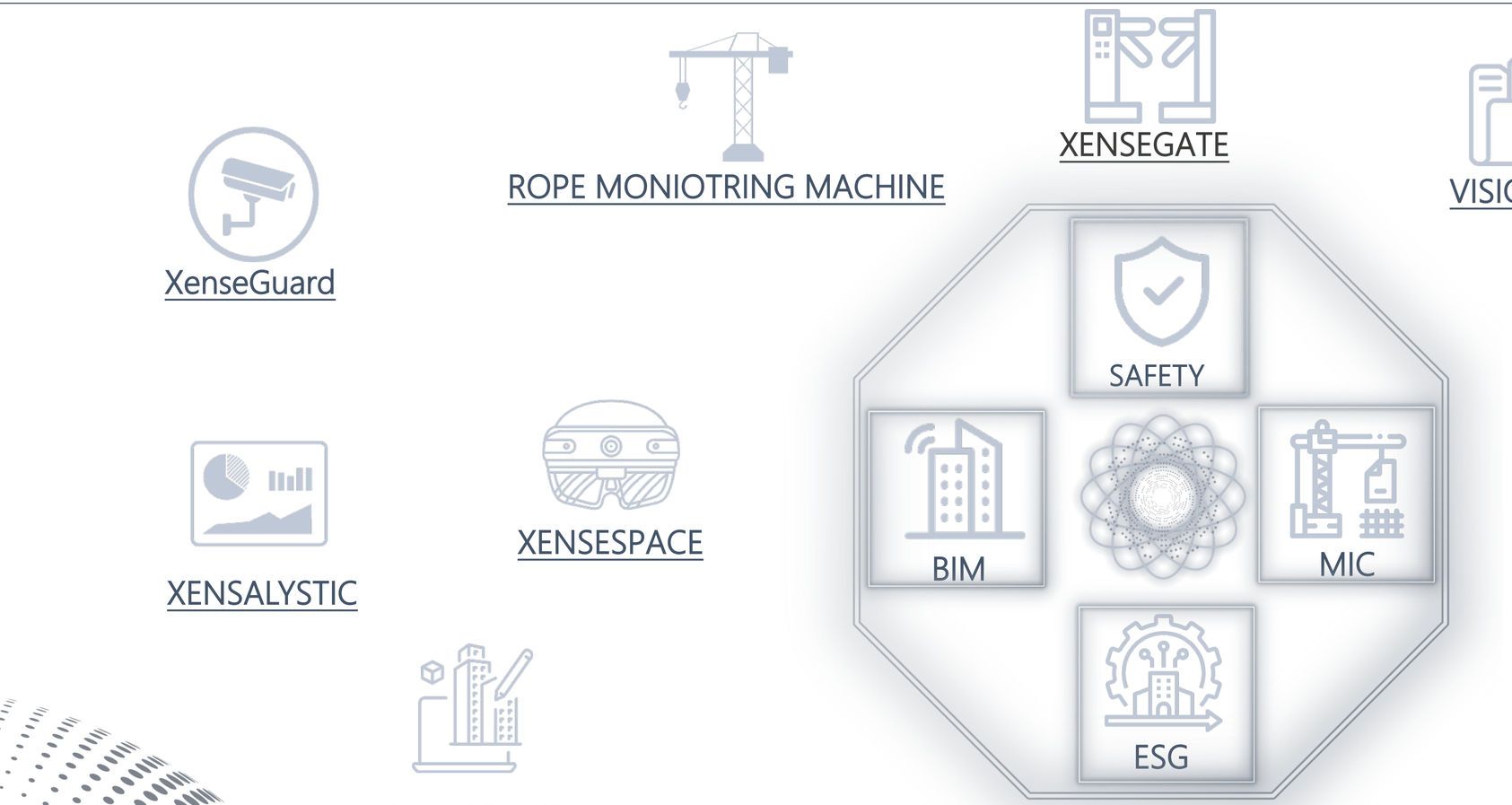
XenseTech — Company Profile

Rapidly growing: history from the beginning



Smart Construction Technologies

All-around solution for construction industry



XenseGuard

ROPE MONIOTRING MACHINE

XENSEGATE

VISIONHUB

XENSEPATH

AUTOMATIC WALL PLASTERING MACHINE

XENSALYSTIC

XENSESPACE

MIC CANDLE-LOC SYSTEM

BIM SERVICE

SURVEYING SERVICE

XENSEPURE

PMIS

BMS

XensePath – UWB Positioning & Anti-Collision

UWB – the future of positioning technology

AirTag

Available on
30 Apr 2021

SAMSUNG

三星電子看好UWB將是無線技術領域的明日之星

Galaxy SmartTag+

Available on 14
May 2021

Introduced
in Oct 2020

XenseTech

Demonstrated on
2019 Cocktail Party

UWB vs RFID vs GNSS

UWB – what make us different

Feature	Ultra-Wideband (UWB)	Radio Frequency Identification (RFID)	Global Navigation Satellite System (GNSS) e.g. GPS
Location Tracking Accuracy	Up to 10 cm	Depends on distance between readers	Up to 5 m
Outdoor Location Tracking	✓ ✓ ✓	✓	✓ ✓
Indoor Location Tracking	✓ ✓ ✓	✓	✗
Local Anti-collision	✓ ✓ ✓	✓ ✓	✗
Energy Durability	✓ ✓ ✓	✓ ✓ ✓	✓
Installation & Maintenance	✓ ✓	✓	✓ ✓ ✓

UWB Positioning & Anti-Collision

UWB Safety Management System

Smart Helmet

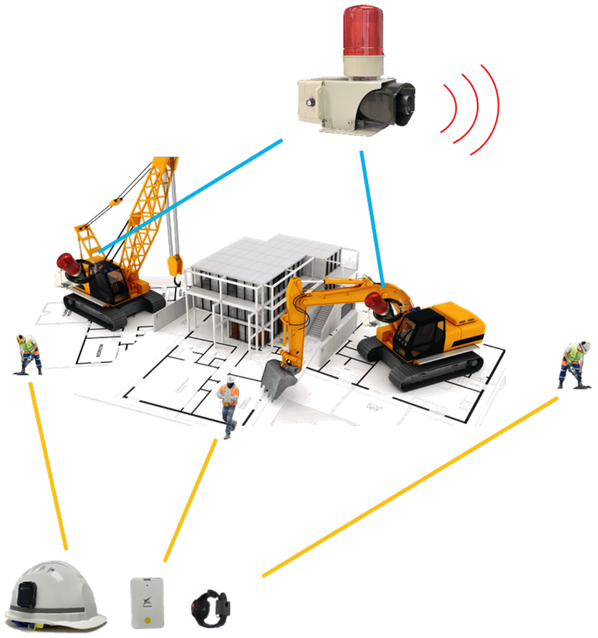
Smart Card

Wireless Long Range Positioning Antenna Station

Long Range Positioning Gateway

Anti-Collision Antenna Station

XensePath utilize the UWB technology which achieved location tracking with accuracy up to 10 cm. The application of XensePath cover both positioning, behaviour monitoring and anti-collision.



Behaviour Monitoring

Anti-Collision & Danger Zone

Location Tracking

UWB Positioning & Anti-Collision

Site Setup

XensePath utilize the UWB technology which achieved location tracking with accuracy up to 10 cm. The application of XensePath cover both positioning, behaviour monitoring and anti-collision.

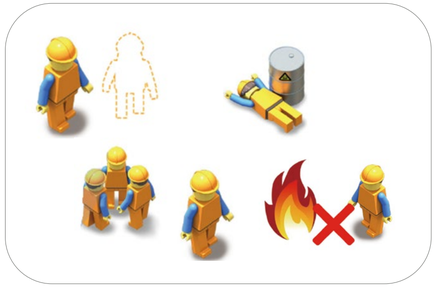
Smart Helmet

Smart Card

Anti-Collision Antenna Station

Anti-Collision & Danger Zone

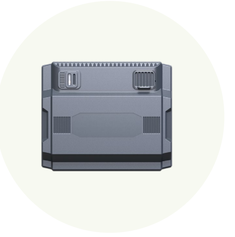
Location Tracking



Behaviour Monitoring

Smart Helmet

Smart Card



Wireless Long Range Positioning Antenna Station

Long Range Positioning Gateway

UWB Anti-Collision & Wireless Positioning Setup

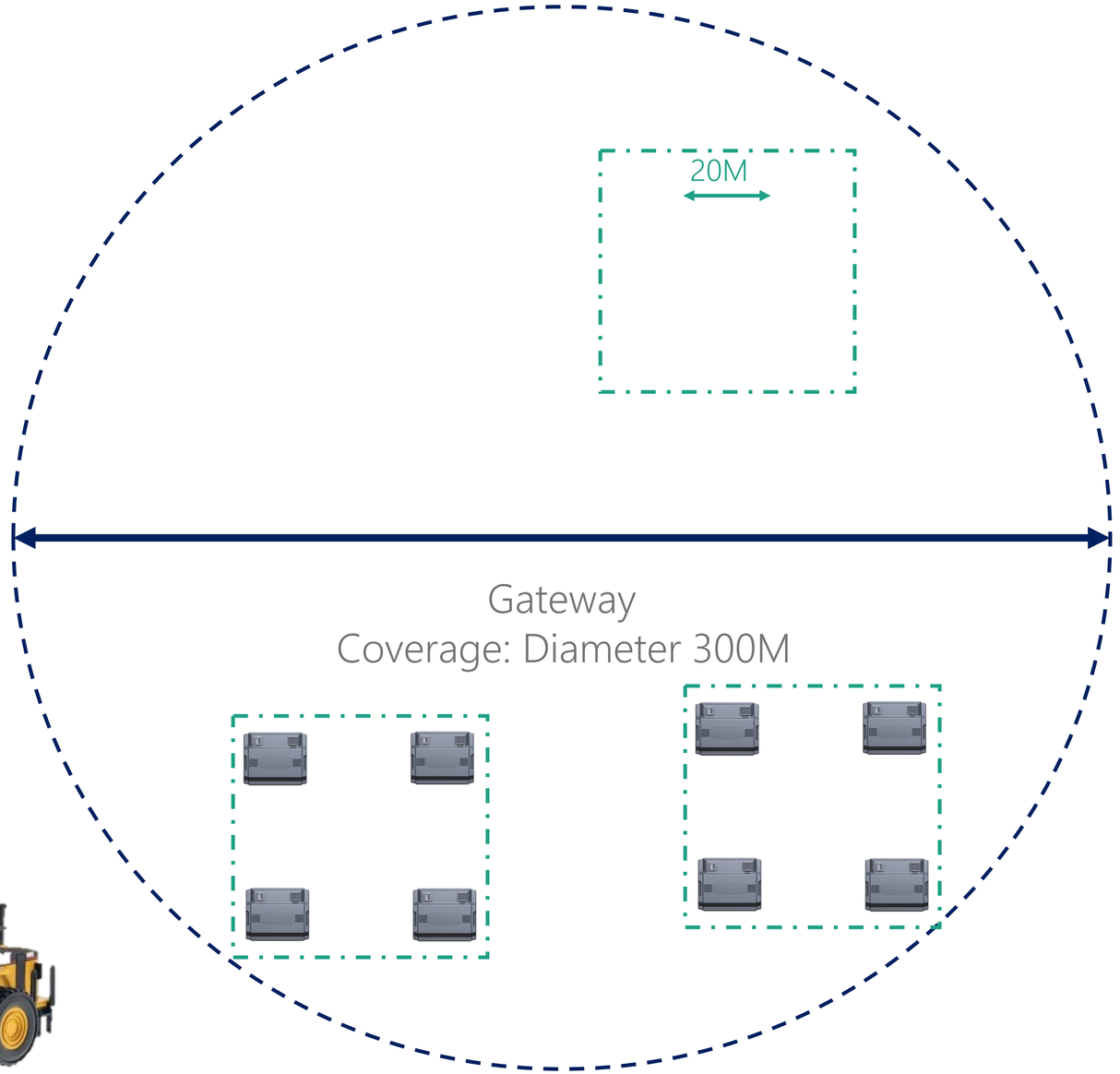
Hardware list

Positioning Gateway
Coverage: Diameter 300M

Wireless Positioning Station
Coverage: 100M (sight distance)
20M (with occlude)

Anti-Collision Antenna Station
Anti-Collision Antenna Station can be installed outside of the positioning

Smart Worker Card tag
Carried by worker for both positioning and anti- collision

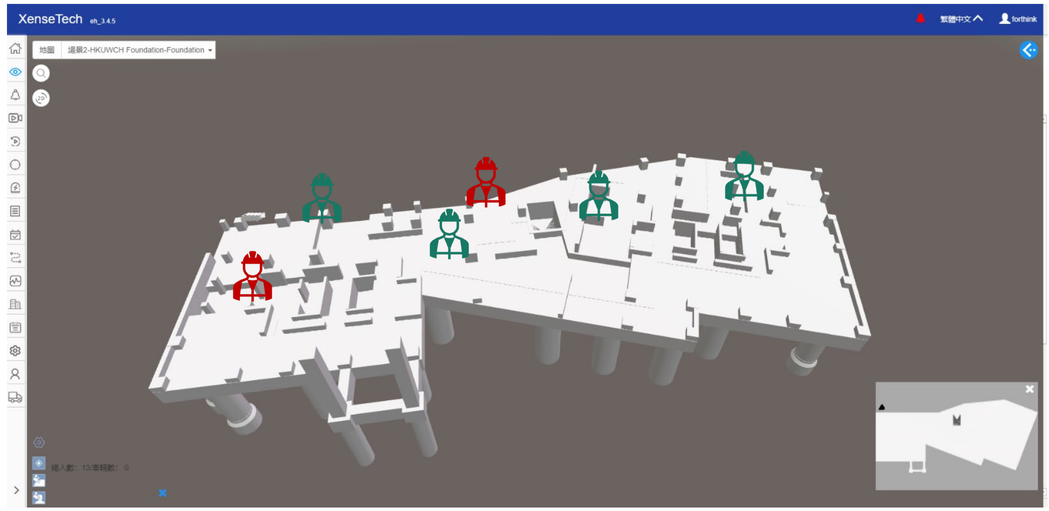


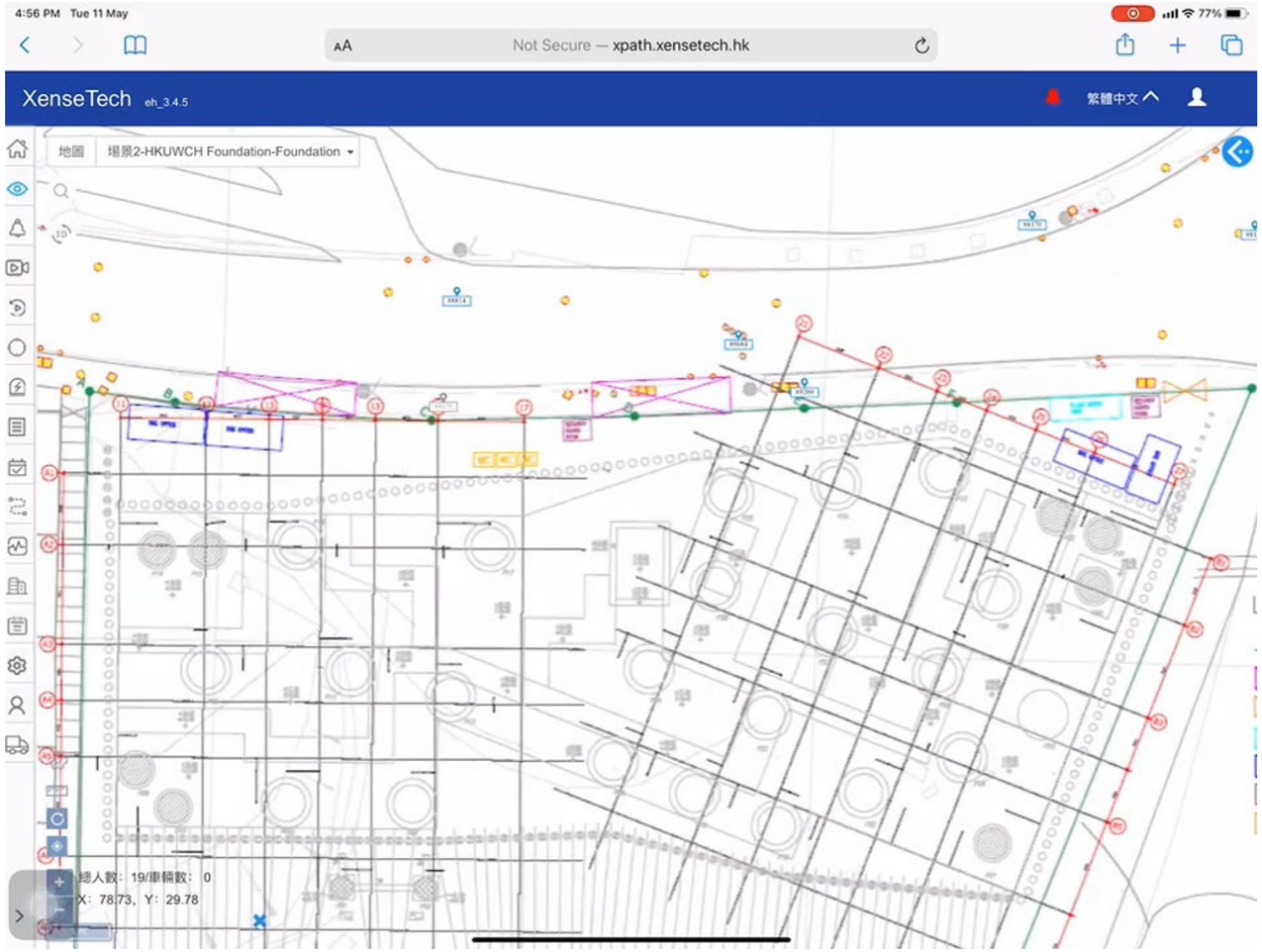
Real-time Worker Positioning

High Tracking Accuracy

Features

- Display & Monitoring in 2D & 3D
- Trajectory playback for incident investigation
- Geo-fencing monitoring for danger zone like confined space





Behaviour Monitoring

Flexible Alarm Triggering Logic

Disappearance from post

Alarm about disappearance of
staff from working area

Actionless

Alarm about no-action beyond
the pre-set time limit
Self-defined time limit

No company

No-company alarm
about entry into critical
areas or no company

Source of danger

Alarm about approaching source or danger
Applicable to collision-proof lifting work by forklift
Prevented access to any toxic or harmful area

Stray detection

Stray alarm
Applicable to mutual surveillance group
in jail and fire work monitor management

Overtime stay

Alarm about overtime stay
Self-defined area and time limit
for the stay

Multi-card monitoring

Alarm about carrying
several tags by one person

Crowd gathering

Alarm about crowd gathering
Self-defined number of safely
gathered staff

Anti-Collision Module

Early Warning for Workers Near Moving Objects / Danger Zones

Features

- Up to 1Hz directional distance measurement
- Alert workers & operators of danger
  - Vibration prompt (card tag)
  - Audible warning (anti-collision antenna)
  - Visual warning (anti-collision antenna)
- Setting of safety operation distance for different machines
- Optimal for all environment
  - Outdoor (foundation / civil projects)
  - Indoor (building)

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“

We provide a total sustainable solution to all stakeholders of the construction industry in Hong Kong.

- XenseTech

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THANK YOU

PRESENTED BY XENSETECH