

Patrol Robot with AI Computer Vision

For Digital Policy Office

AI-Ops

Cybersecurity

5.5G

AI Superhighway

ESG

Supercomputing

May 2025

AI+

A large, stylized graphic of the text "AI+" in a bold, white, 3D font. The text is surrounded by vibrant, flowing ribbons in shades of blue, orange, and pink, creating a sense of motion and energy. Several translucent blue spheres are scattered around the ribbons, adding to the futuristic aesthetic. The background is a deep blue with subtle star-like patterns and light streaks.

Problem Statement

“

Labour crush for manual work in developed economies is **existential** for businesses, and caused by **ageing population and changing career aspirations**.

We believe that **robots can truly empower our service workforce**. ”

Michael Sayre
CEO/Co-Founder

Just in Singapore alone,

Ageing Population



By 2030, **1 in 4** Singaporeans will be age **over 65 years**

Ageing Workforce



Average age of security officers:
54 years old

Average age of cleaners:
60 years old

AI Patrol Robot Solution



Smart+ Mission Control

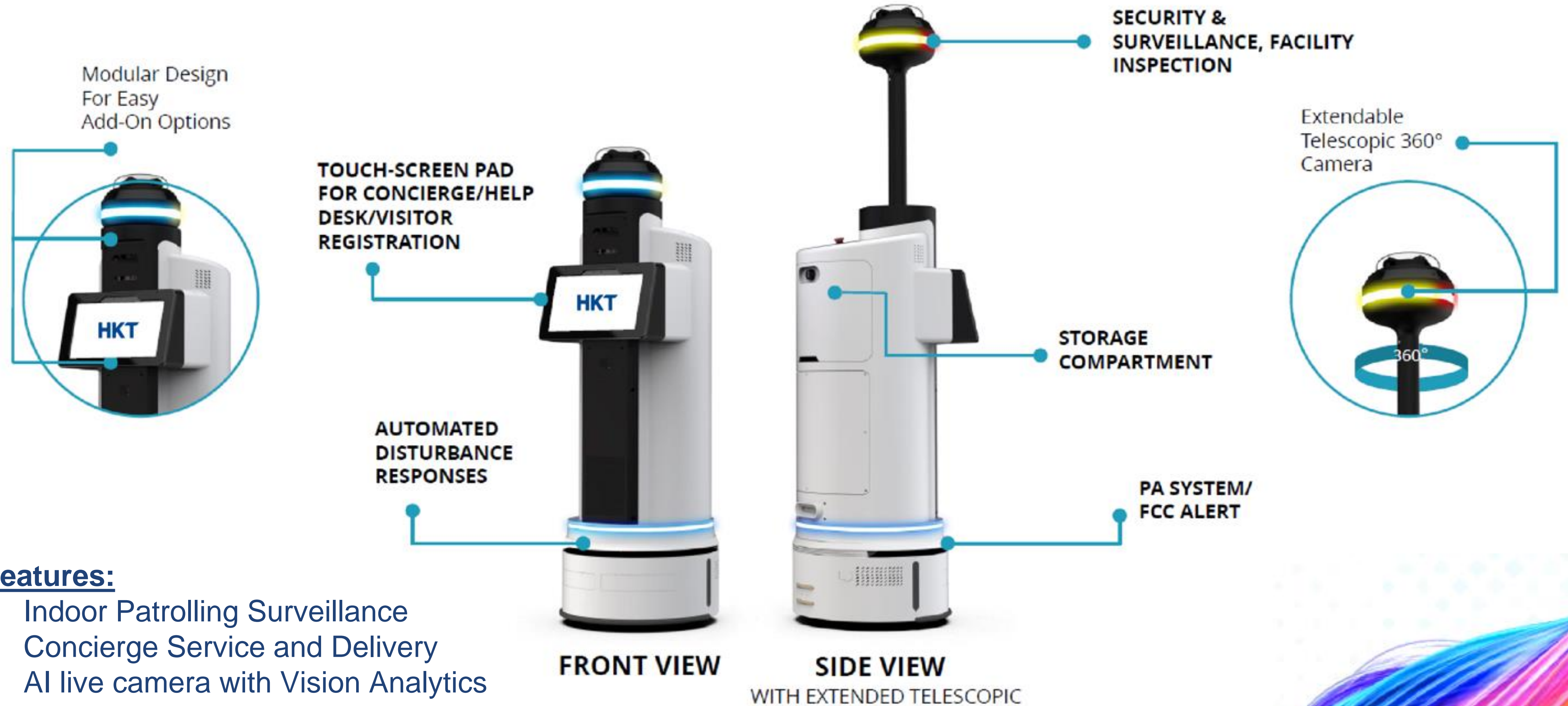
Our Solutions:

- Robotic Connectivity Technology
- Robotic Management Center
- Building Service Robots



Complete Robot Solutions

Indoor Security & Patrol Robot



Features:

- Indoor Patrolling Surveillance
- Concierge Service and Delivery
- AI live camera with Vision Analytics

Specification



TOP VIEW



SIDE VIEW



BACK VIEW

DESCRIPTION	PARAMETRES
Diameter	500mm ± 10mm
Height	Without Extended Telescopic : 1500mm (± 10mm) With Extended Telescopic : 2000mm (± 10mm)
Weight	80kg
LIDAR Maximum Scan Radius (On the surface with a 90% reflective rate)	25 metres
Ultrasonic Sensor	6 (Maximum Detecting Distance: 50cm)
Depth Camera	3
Cliff Sensor	3 (Minimum Detecting Depth: 5cm)
Pressure Bumper	1
Mapping Performance	Maximum Mapping Area : 500m x 500m Map Definition : 5cm
Speed	0.3 – 0.7m/s
Hardware Interface	Ethernet : 10/100/1000 Mbps Power : DC 20-25.2V 5A Max Wi-Fi : 5G & 2.4G 802.11a/b/g/n/ac
Software Interface	Smart+
Battery & Endurance	Working Hours : ≤ 8 hours
Battery Capacity & Type	24V 32AH (18650 Li-Ion)
Autonomous Recharging	Charging Station Input : 100 – 240 VAC (250W) Output : 25.2V 6A-10A Max Charging Time : 3 – 5 hours
Operating Environment	0°C – 40°C
Network	4G Enabled with Wi-Fi Access

Video Analytics – Security & Facility Inspection



Vision Analytics - Alert

Hello,

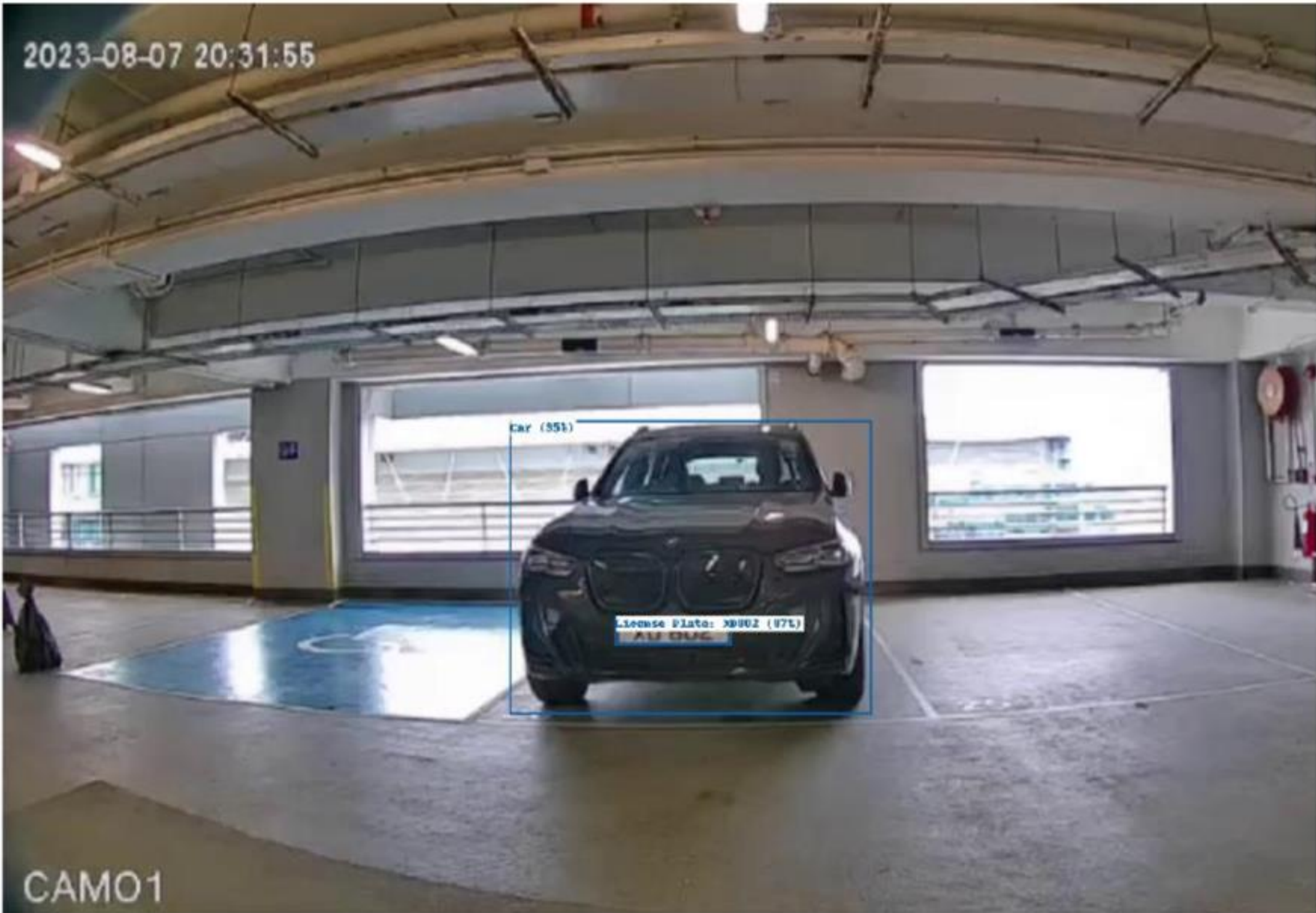
Halo7_HK has detected 1 vehicle(s).

License plate(s): xd802 .

Waypoint: CP4

Timestamp: 2023-11-02 16:06:46 SGT

Kindly see the attached image for reference:



Car & Car Plate

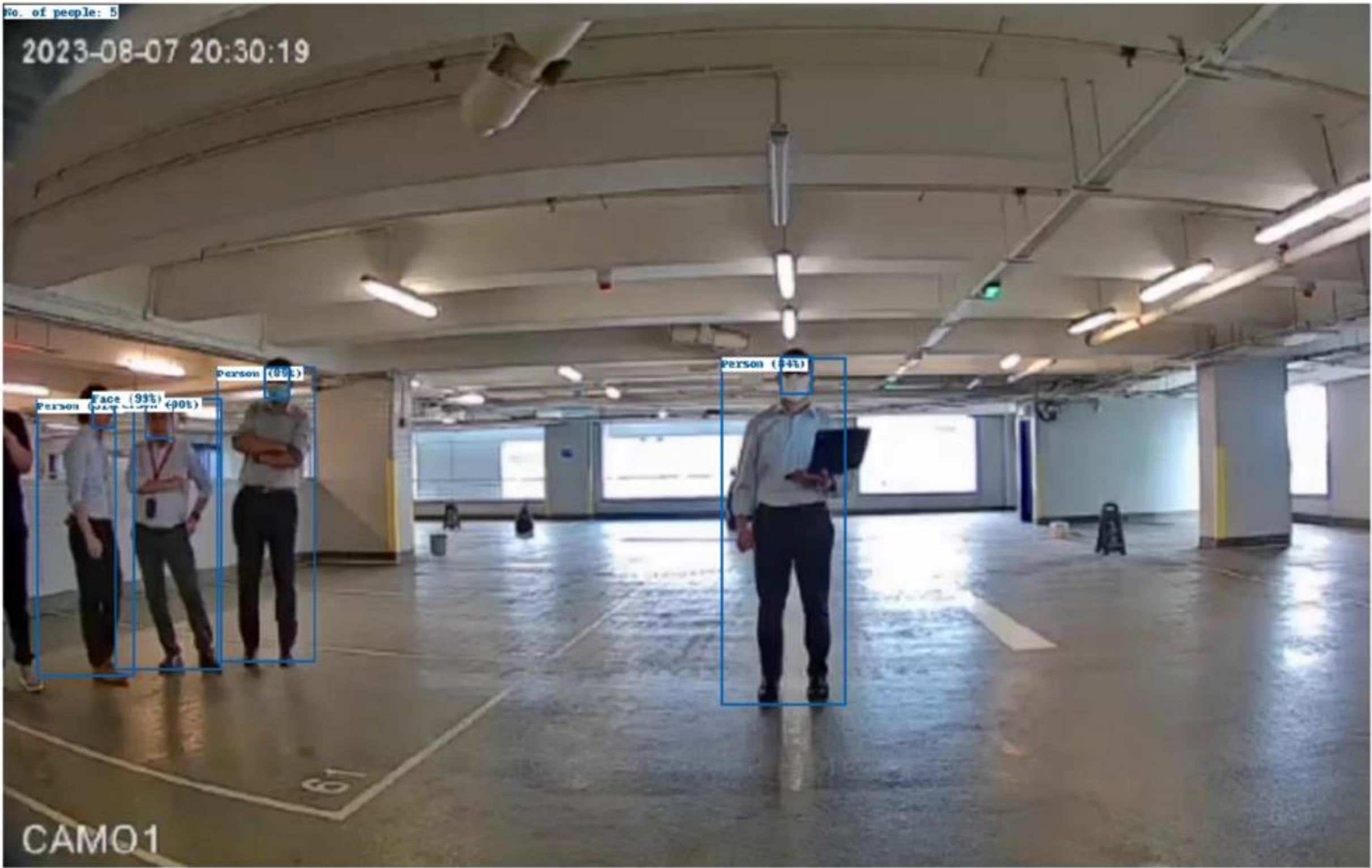
Hello,

Halo7_HK has detected 5 individual(s) .

Waypoint: CP2

Timestamp: 2023-11-02 16:05:11 SGT

Kindly see the attached image for reference:



Human & People Count

Vision Analytics - Alert

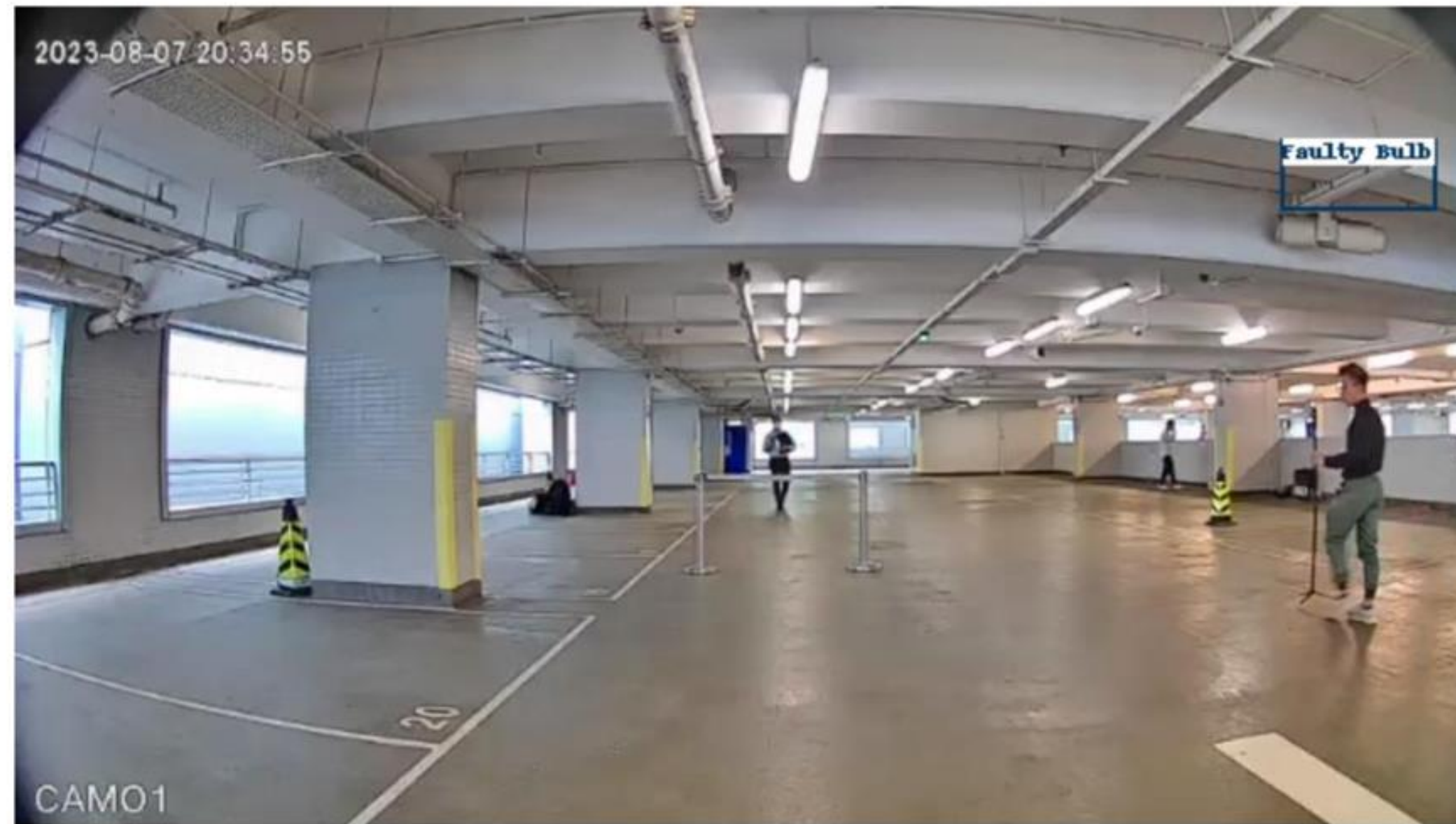
Hello,

Halo7_HK has detected issue(s): **Faulty Bulb**

Waypoint: **CP8**

Timestamp: "2023-11-02 16:09:55 SGT"

Kindly see the attached image for reference:



Faulty Light Bulb

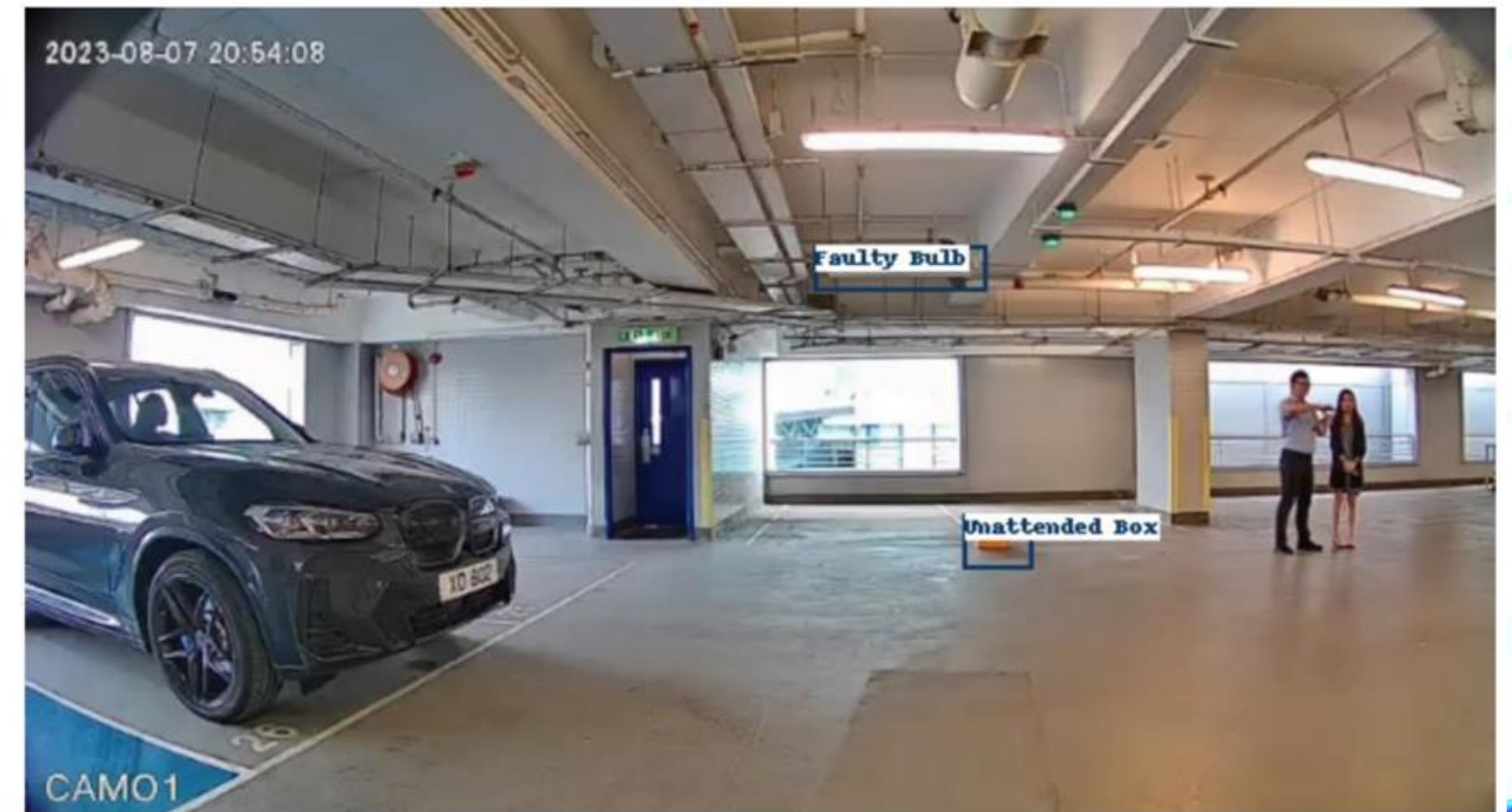
Hello,

Halo7_HK has detected issue(s): **Unattended Box, Faulty Bulb**

Waypoint: **CP6**

Timestamp: "2023-11-02 16:29:08 SGT"

Kindly see the attached image for reference:



Human & People Count

Vision Analytics - Alert

VA Alert

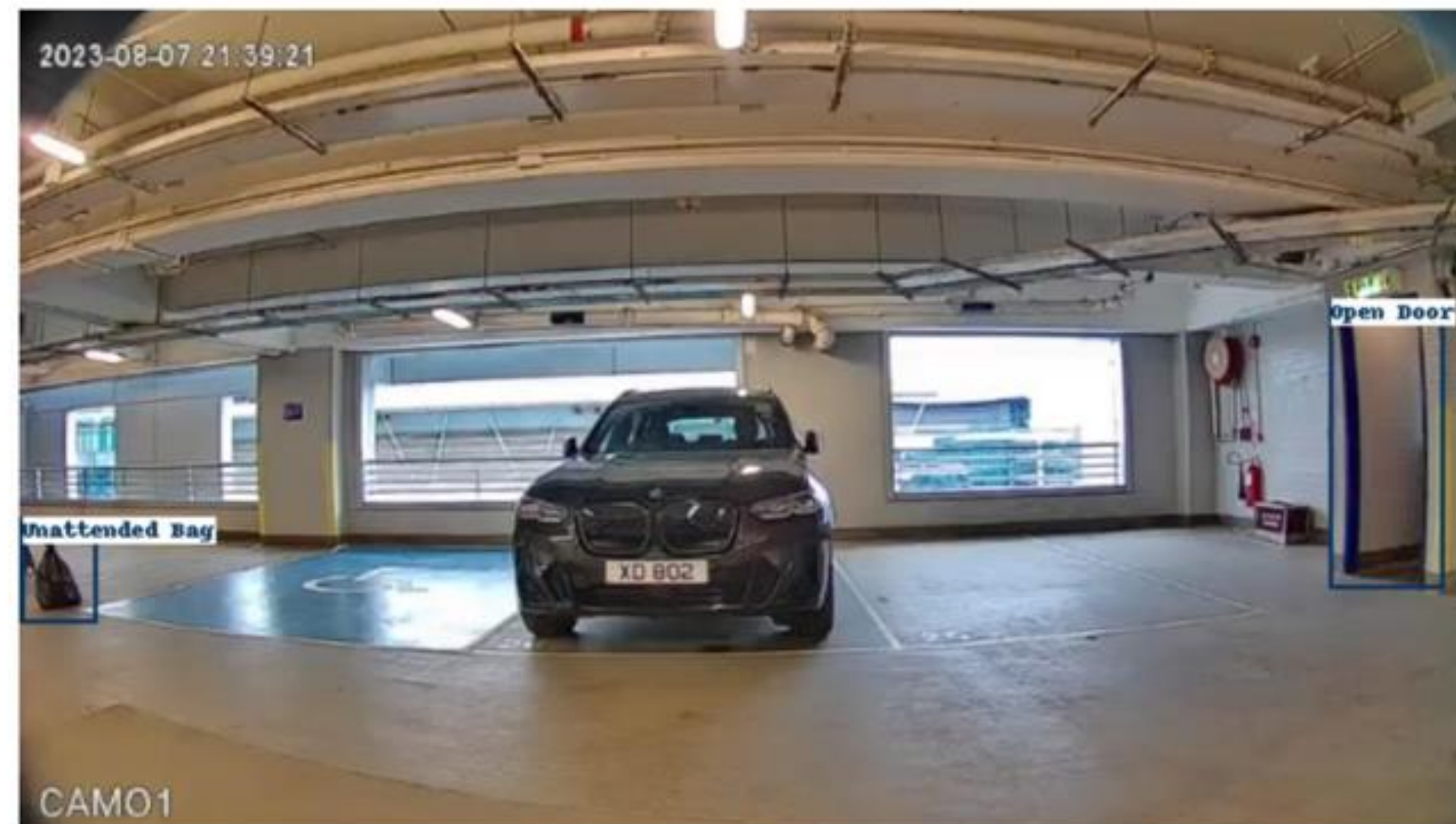
Hello,

Halo7_HK has detected issue(s): **Unattended Bag, Open Door**

Waypoint: **CP4**

Timestamp: "2023-11-02 17:14:20 SGT"

Kindly see the attached image for reference:



Emergency Door Open/Close

VA Alert

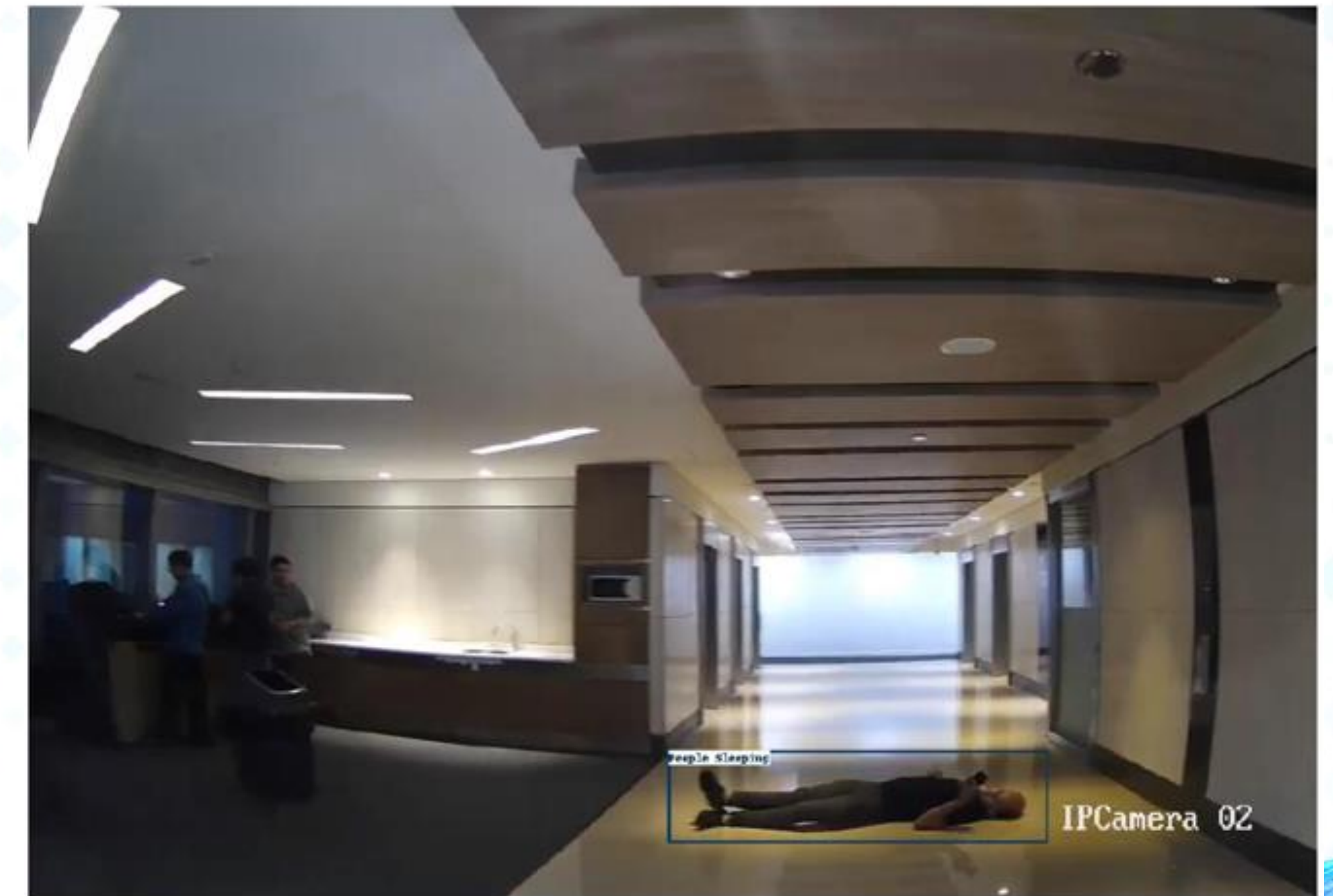
Hello,

Colab 15 - HK has detected issue(s): **People Sleeping**

Waypoint: **CP2 VA**

Timestamp: "2023-10-24 18:00:16 SGT"

Kindly see the attached image for reference:



Human Fall

Vision Analytics - Alert

VA Alert

Colab 15 - HK has detected Fire at Waypoint: Cubicle office at "2023-08-16 12:04:05 SGT". Please refer to the images below:



Fire

VA Alert

Hello!

Colab 15 - HK has detected Fire at Waypoint: Cubicle office at "2023-08-16 12:07:22 SGT". Please refer to the images below:



Smoke

Vision Analytics - Alert

VA Alert

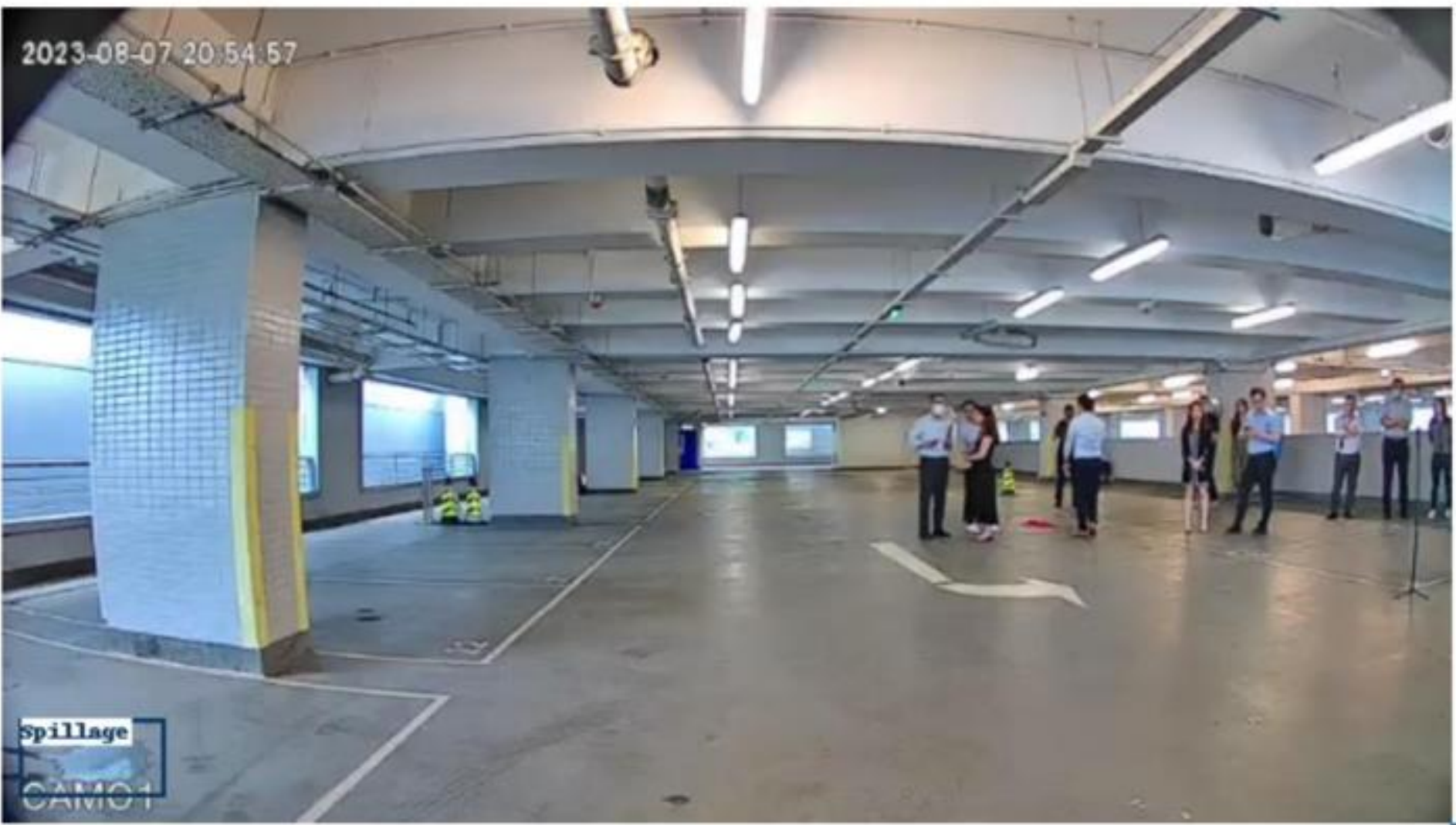
Hello,

Halo7_HK has detected issue(s): **Spillage**

Waypoint: **CP7**

Timestamp: "2023-11-02 16:29:57 SGT"

Kindly see the attached image for reference:



23 Nov 2023 20:43:05

HKSTP Demo

water_leak_015

2 minutes ago Details



1
Water Leak



69
Leakage Level

Water Leak



SENSEN

Water Spillage Detection – by Both Vision & Leakage Sensor

Fleet Management System for Robots

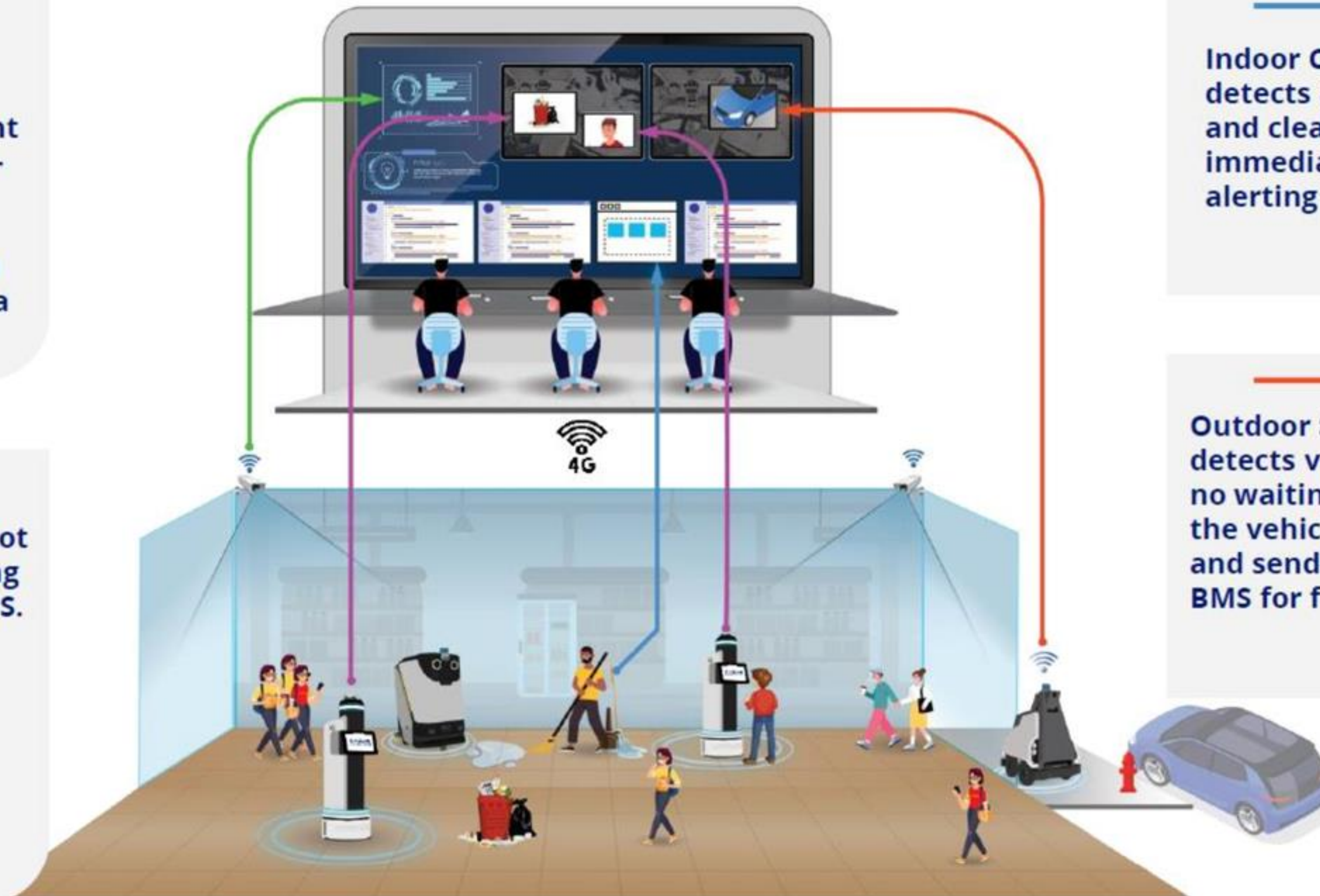
Task status is broadcasted to the building management system (BMS) in real-time.

Connection between BMS and robots is via 4G/Wi-Fi.

Indoor Concierge Robot detects an overflowing bin and alerts the BMS. The public can also interact with the command centre through the teleconference function.

Indoor Cleaning Robot detects a water puddle and cleans it up immediately while alerting the BMS.

Outdoor Security Robot detects vehicle that flout no waiting rule. It scans the vehicle's license plate and sends an alert to the BMS for further actions.



Robotic Middleware Framework for Lift and Auto-Door



Partners:



OTIS



FUJITEC

HITACHI
Inspire the Next



Schindler

Deployment Reference

(Singapore, Australia, Hong Kong)

Tan Tock Seng Hospital
CERTIS East Coast
Victoria Junior College
National University Singapore
Vivocity
Singapore Parliament House
Singapore Examinations and Assessment Board
313 Somerset
Devan Nair Institute For Employment And Employability
Temasek Secondary School
Funan Mall
Istana



Woodlands Integrated Transport Hub
KK Women's & Children's Hospital
CDW Building (Hong Kong)
PUB@Bedok Reservoir
Singapore Expo
Our Tampines Hub
Changi Jewel



Singapore Management University (SMU)
Kim Chuan Depot
Tiong Bahru Plaza
SIT@Dover
Funan Mall
JTC Summit
Orchard Central



CERTIS Commonwealth
Paya Lebar Quarters (PLQ)
Changi Airport
PUB@Marina Barrage
Lendlease JEM
Home Team Academy
Housing Development Board Hub
Linfox Armaguard (Australia)
JTC Eco Garden
Wisma Geylang Serai
Ministry of Finance

Thank You