

Usage of Smart Site Safety Systems (SSSS) in Construction Site

CIC Webinar

by Varadise Limited

Managing Real World Data with Digital Twin



©2022 All Rights Reserved



Challenge

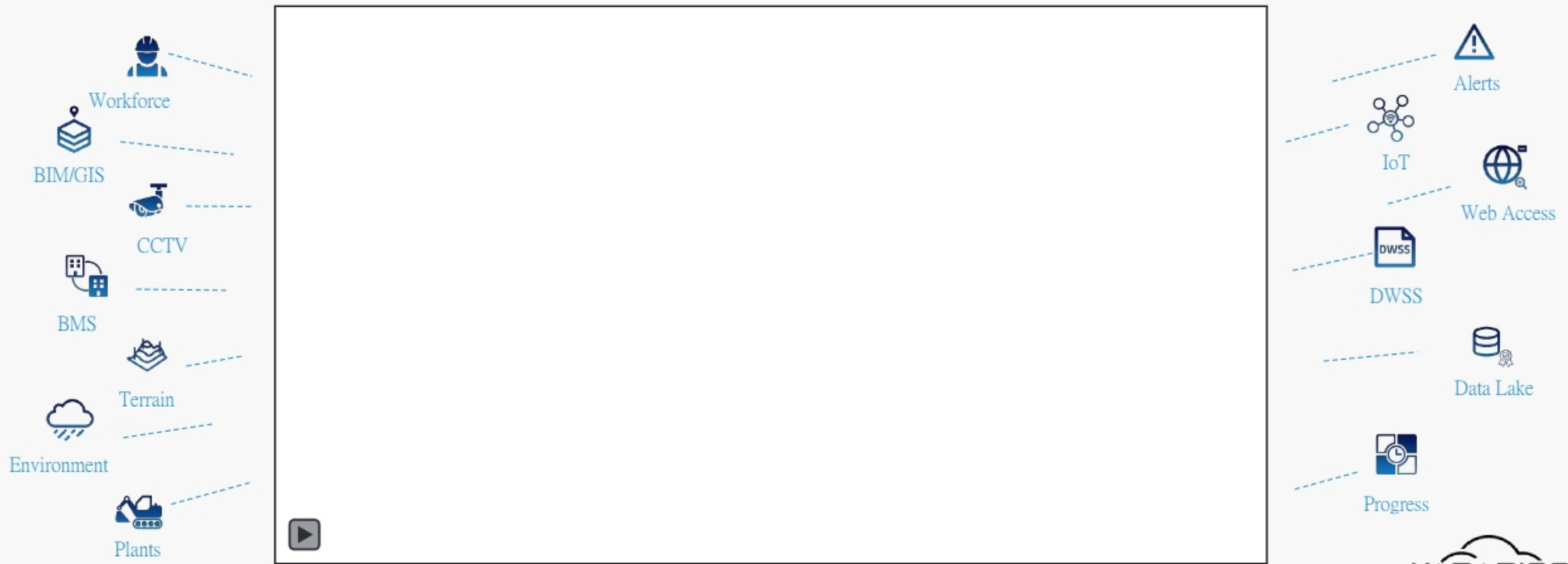


The Components -

1. Centralized Management Platform (CMP)

All-in-one digital platform that integrates Spatial Data, Images, Video and IoT Sensors Data,

Acting as the Common data environment (CDE) / Data Warehouse that can receive and display SSSS component data.



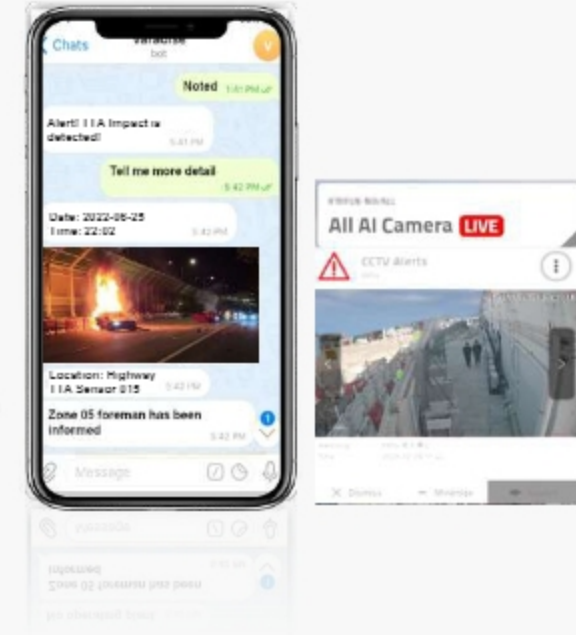
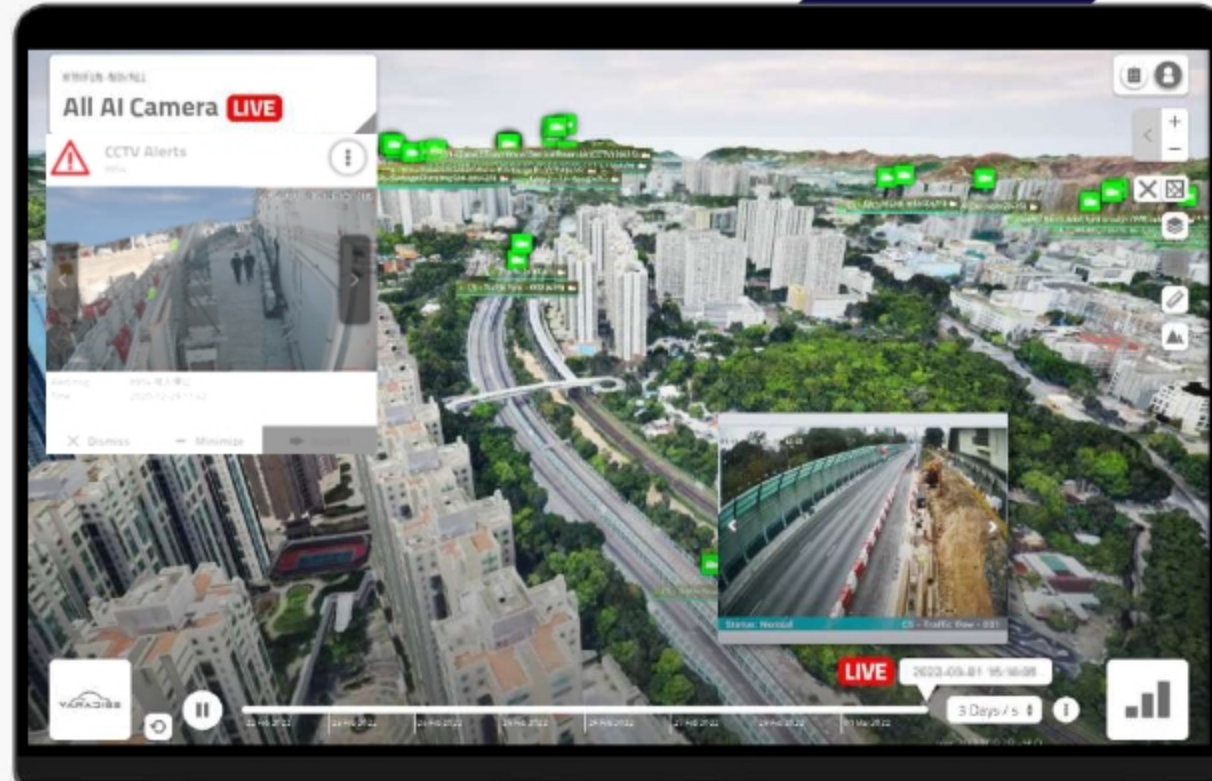
Platform Features

1 Centralized Management Platform (CMP)

Spatial (GIS/BIM) Data, Images, Video and IoT Sensors Data.

3 Alert Centre Realtime Alerts

2 AI CCTV Web portal Real time streaming



4 Analytical Dashboard statistics and reports



CMP

Integration
with

DWSS





CMP

Showcase at

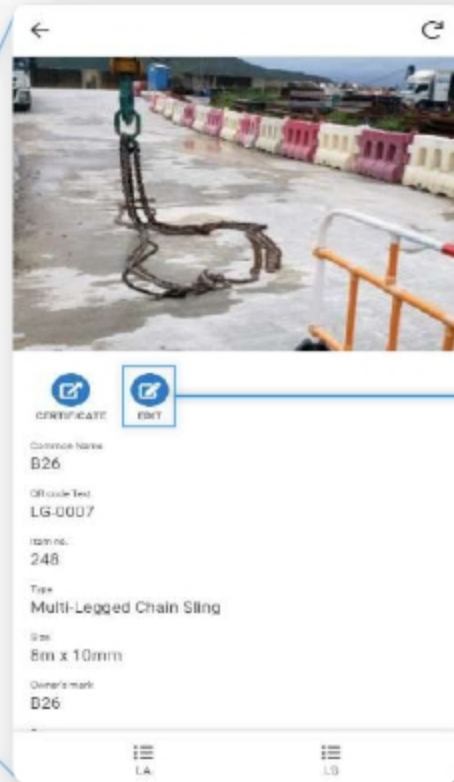
Control
Room

The Components -

2. Digitalized Tracking System

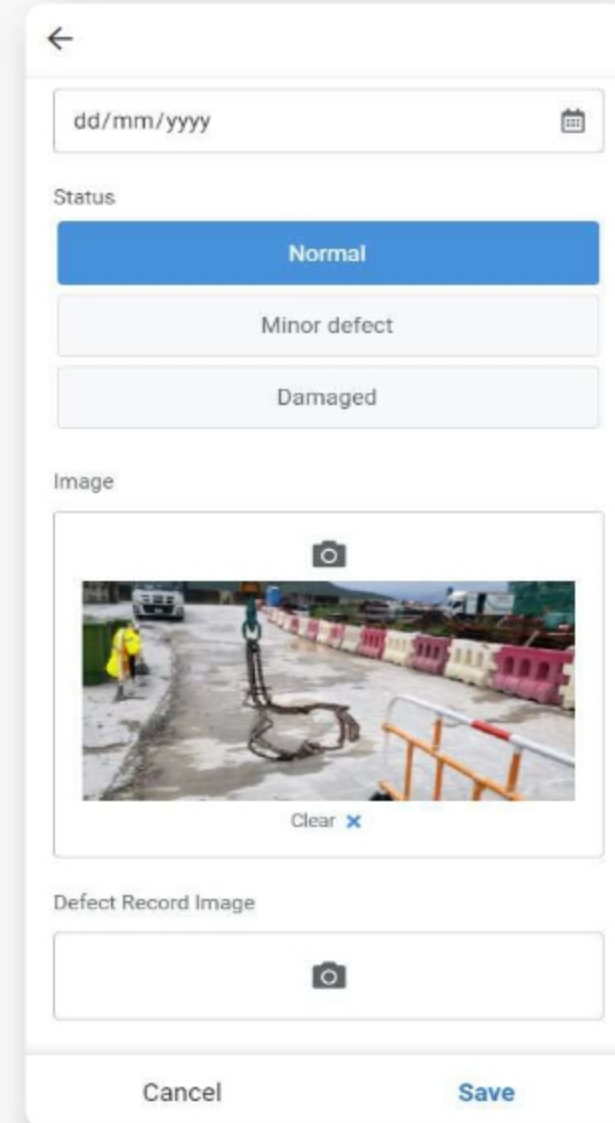
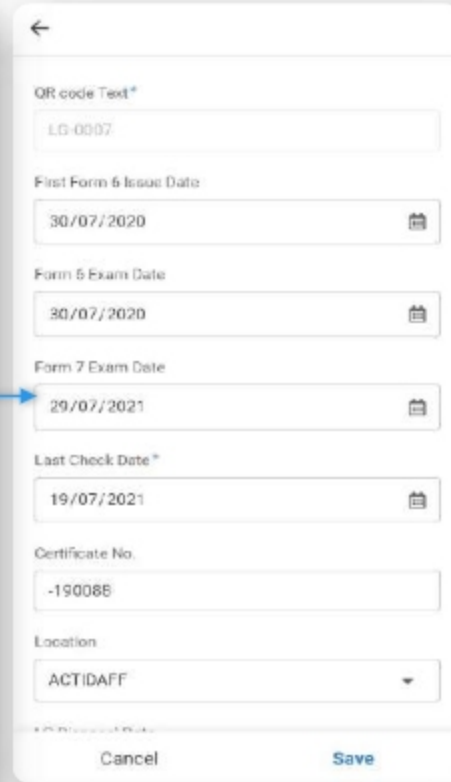
(a) Asset Management -

Scan QR code on equipment or search from mobile/web app to view & edit equipment information

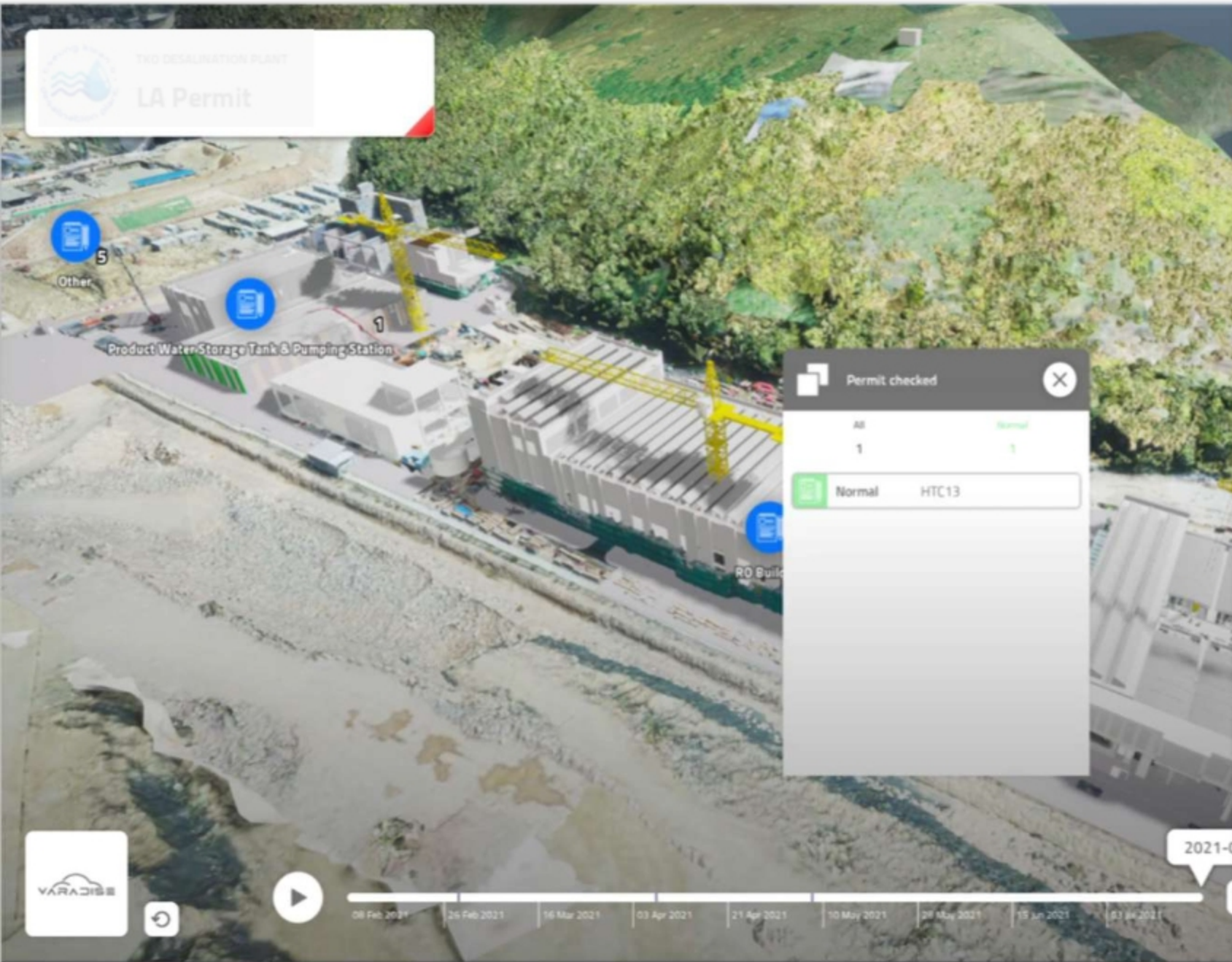


(b) Status Reporting -

Update equipment's maintenance status, and upload image in case of defects



TWO DESALINATION PLANT
LA Permit



Permit checked

All	Normal
1	1
Normal	HTC13



Normal

HTC13

OR code text	LA-0006
Equipment type	Mobile Crane
Permit Number	HTC13
Brand Name	Sany
Model	STM 1100-4.2
Owner	CSHC
Manufacture Date	2017
Owner No.	N/A
Serial No.	64317
SWL (Tonnes)	0.01-51.67
Radius (meter)	46M
On-Site Date	2021-05-03
off-site Date	
Last Check Date	2021-07-21
Cert No.	20193PLTM1100064317
Cert Expiry Date	2021-09-06
Submitted Letter No.	
Certificate	Certificate
Detailed Location	RO Building
Remark	
Status	Normal

Digitalized Tracking System


Integrate with

CMP



08 Feb 2021 24 Feb 2021 16 Mar 2021 03 Apr 2021 21 Apr 2021 10 May 2021 28 May 2021 15 Jun 2021 03 Jul 2021





Mobile Plant Digitalized Tracking System

Integrate
with

CMP



3. Hazardous Areas Access Control

Smart Lock

Use Case:

1. Electrical cabinet
2. Lift fence door
3. Floor opening with latch
4. Confined space entrance
5. Restricted room

- Unlock by RFID card and Chatbot
- GPS trackable

Electrical cabinet



Lift fence door



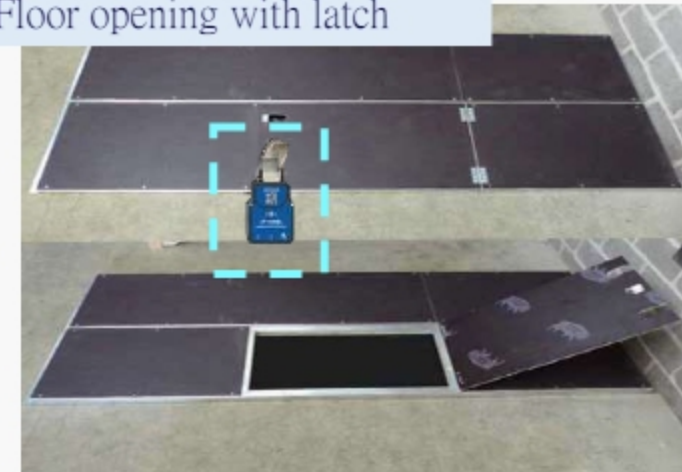
Confined space entrance



Restricted room



Floor opening with latch





GSM/3G



Server



Monitor Center



Web Software



Phone App

Smart Lock System

Integrate with

CMP

4. Safety monitoring system using A.I.

Danger Zone Detection

- identify human or vehicles in dangerous or hazardous area
- generate real-time alerts on-site
- Realtime streaming and record



AI camera provide **motion intrusion detection** by real-time image recognition approach and capture video.





AI CCTV
System

Integrate
with

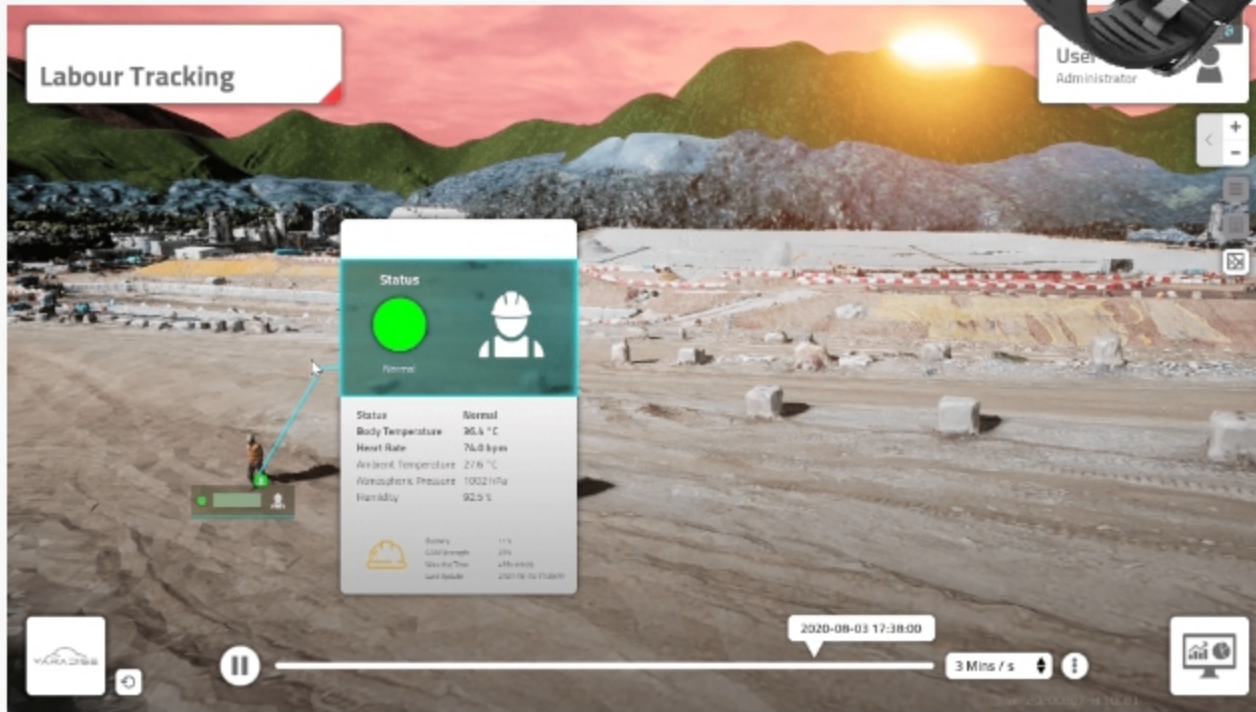
CMP

The Components -

5. Smart Monitoring Devices for Workers

Smart Helmet / Smartwatch for Worker

- Positioning System
- free-falling alert
- body conditions detection

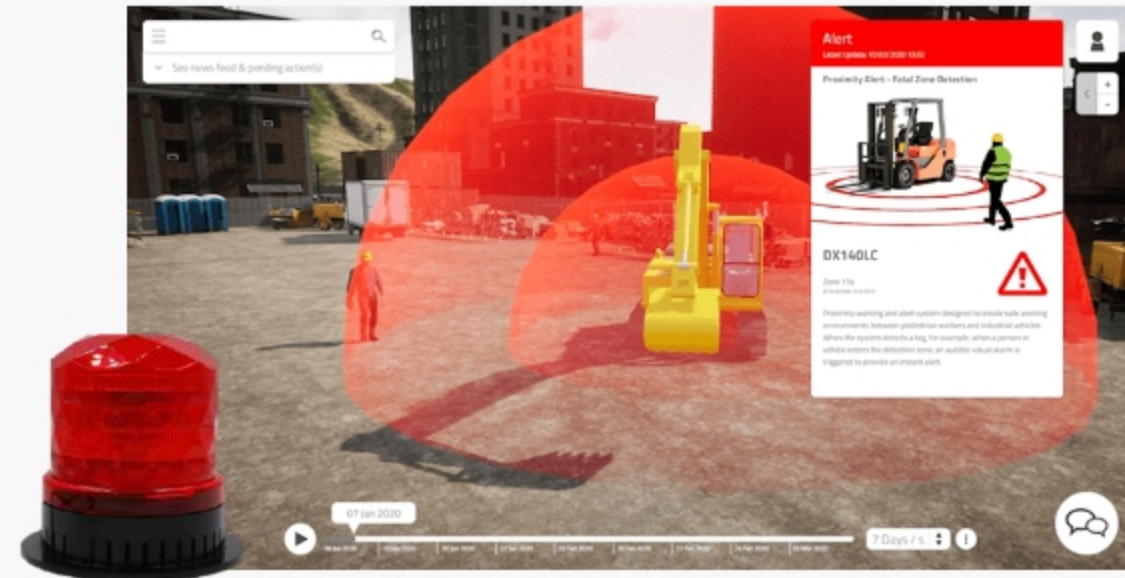


VARADISE LIMITED

ADD-ON (1) : Plant/Labour Tracking System



ADD-ON (2) : Proximity Detection



Smart
Watch

IOT

Integrate
With

CMP



The Components -

6. Confined Space Monitoring System

Multiple solution is used to enhance confined space safety measures in construction site, including:

1. Access Control

(a) Facial Recognition

(b) AI Camera -
PPE Detection

(c) Smart Lock



BEFORE

access

Confined
Space

6. Confined Space Monitoring System

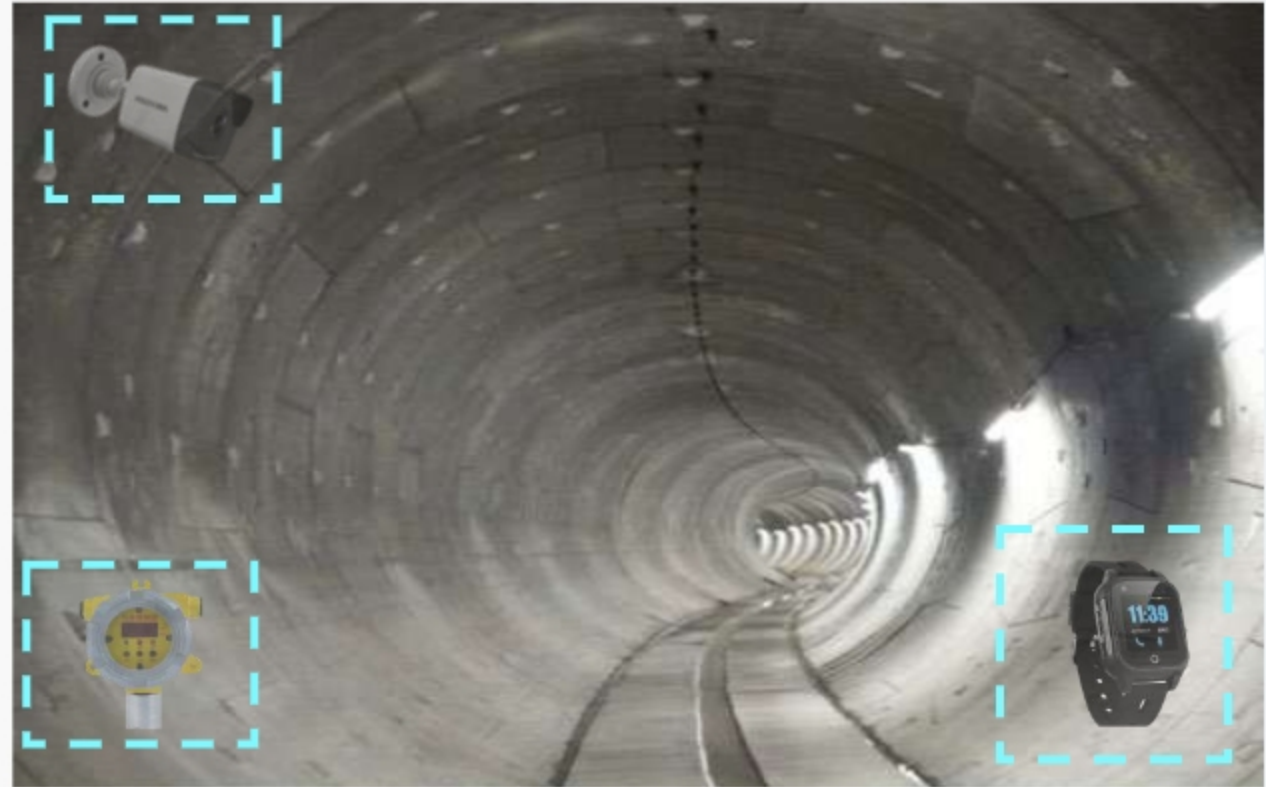
Multiple solution is used to enhance confined space safety measures in construction site, including:

2. People Management

- (a) **AI Camera** -
People Counting
- (b) Integration with Smartwatch - indoor
positioning of workers

3. Real time toxic gas sensor

- toxic gases (H₂S, CO₂, CH₄, O₂) level.
- Local alarm and remote alert



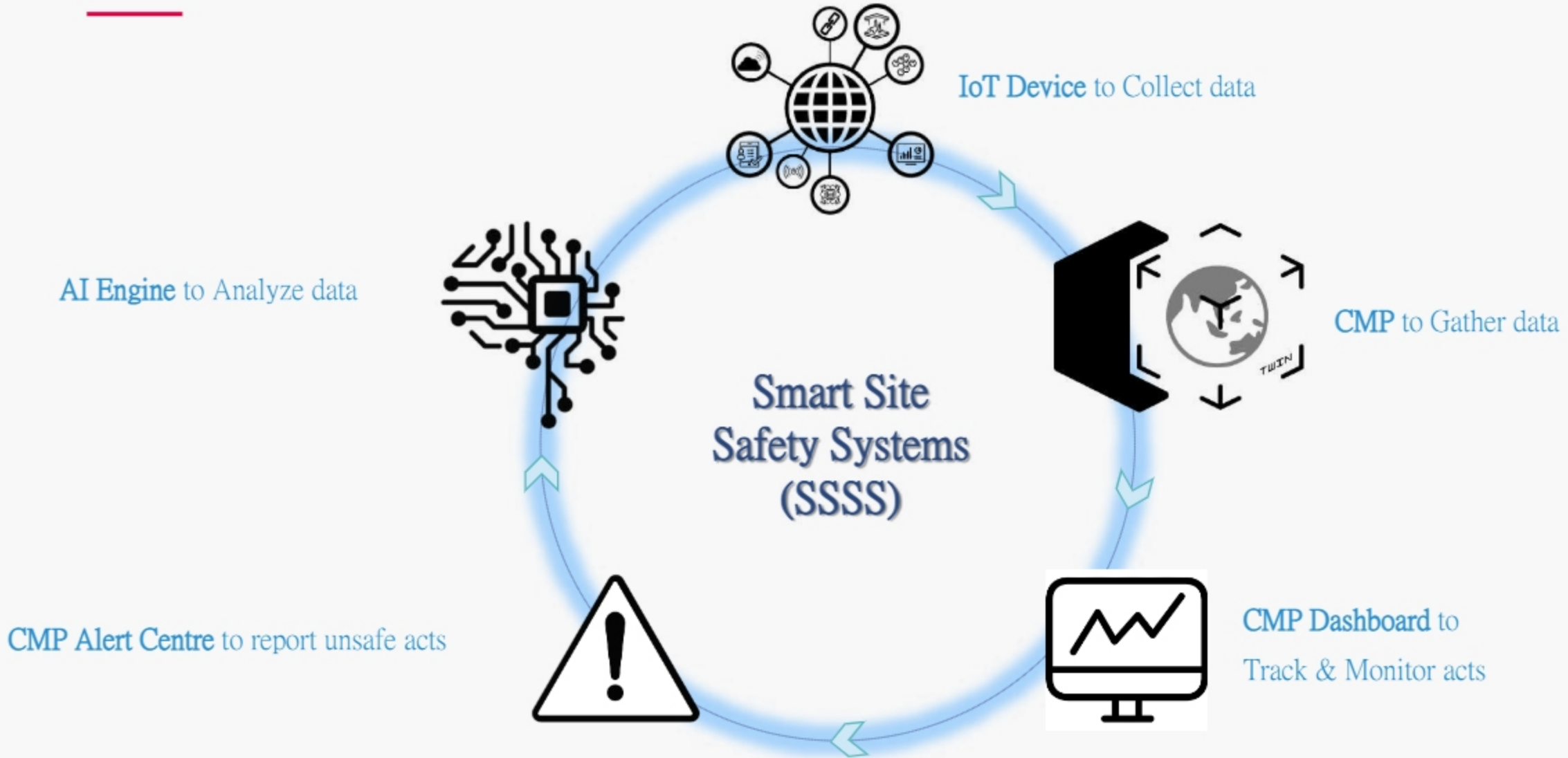
INSIDE

Confined
Space

Experience SSSS On-Site



Total Solution



No.1 Digital Twin provider in HK - VARADISE

More Market Insights on Innovation?

Looking for ConTech Solutions?

Over 40 Projects

Charlye Cheng

Business Development Manager

Tel: (852) 2312 6880

Mob: (852) 5160 0591

Web: <https://www.varadise.ai/>



Thank you.

Thank you.

Charlye Cheng

Business Development Manager

Suite 3005, 30/F, AIA Kowloon Tower, Landmark East, 100

How Ming Street, Kwun Tong, Hong Kong

Tel: (852) 2312 6880

Mob: (852) 5160 0591

Web: <https://www.varadise.ai/>