



Golden Wealth  
TECHNOLOGY  
金 康 科 技

# FOD Solution Using AI

## Automated Foreign Object Debris Detection System

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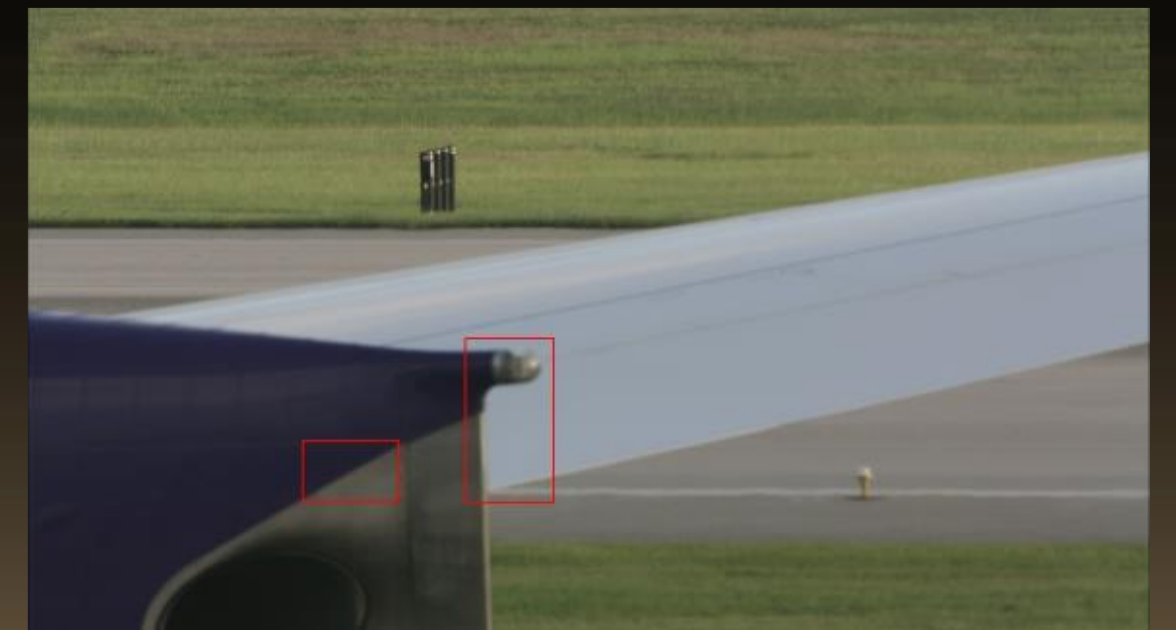
# Challenges of Existing FOD System

Conventional FOD System relies on Camera or Thermal Images, decision support relies on experienced engineers or crew staff to determine True FOD by manual checking

## Pain Points:

Among 2 Asian Airports using FOD System

- Accuracy on FOD Alerts from Environmental Factors (60+ daily alerts)
- No AI Continuous Learning (Repeat false alerts on same pattern)
- Huge Investment



# Our Solution

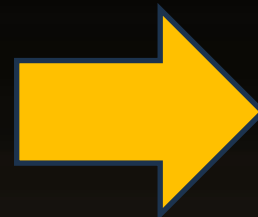
## Powered by World Leading AI Technology



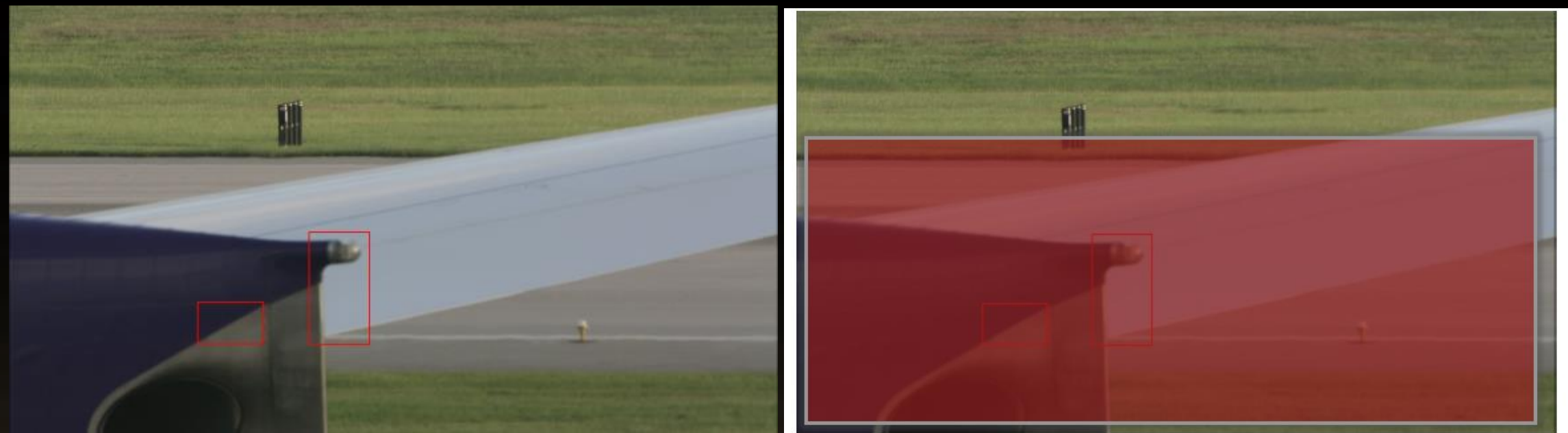
**AI Technology on Facial Recognition by NIST ranked #1 in 4 tests out of 8, including**

- Mugshot – Mugshot (N=12M)
- Mugshot – Mugshot (N=1.6M)
- Mugshot – Webcam (N=1.6M)
- Visa – Border (N=1.6M)

Four Consecutive years in the role by NIST as of 2022



Object Filtering Technology



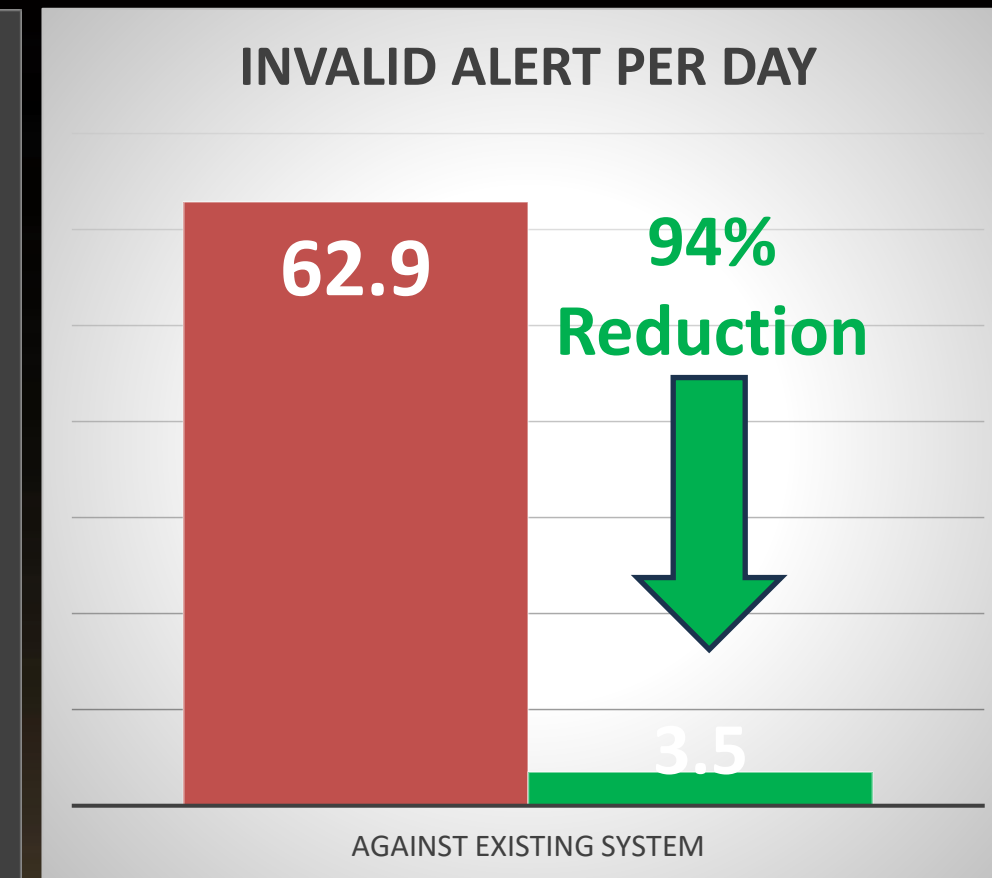
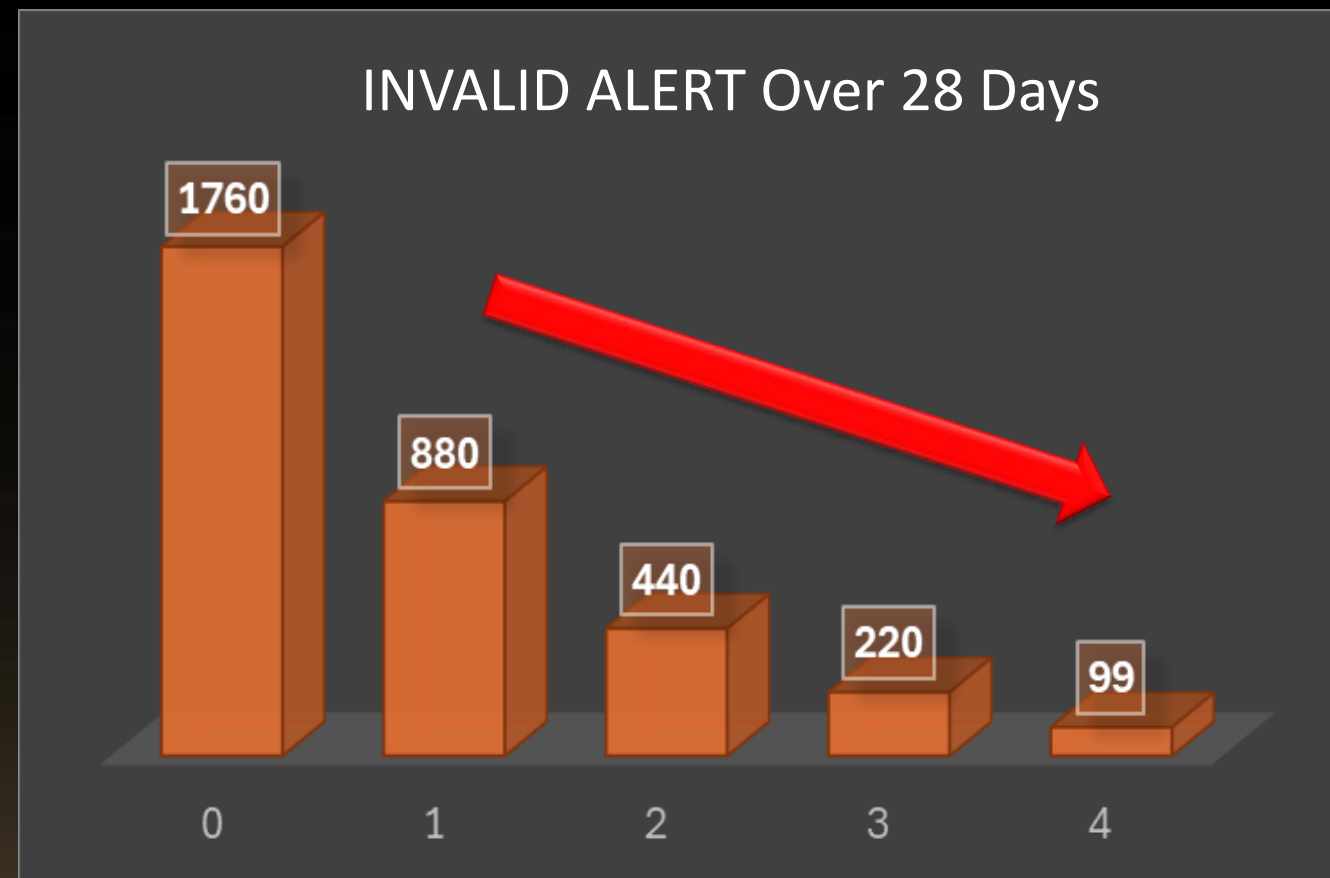
Objects Identification and different Environment





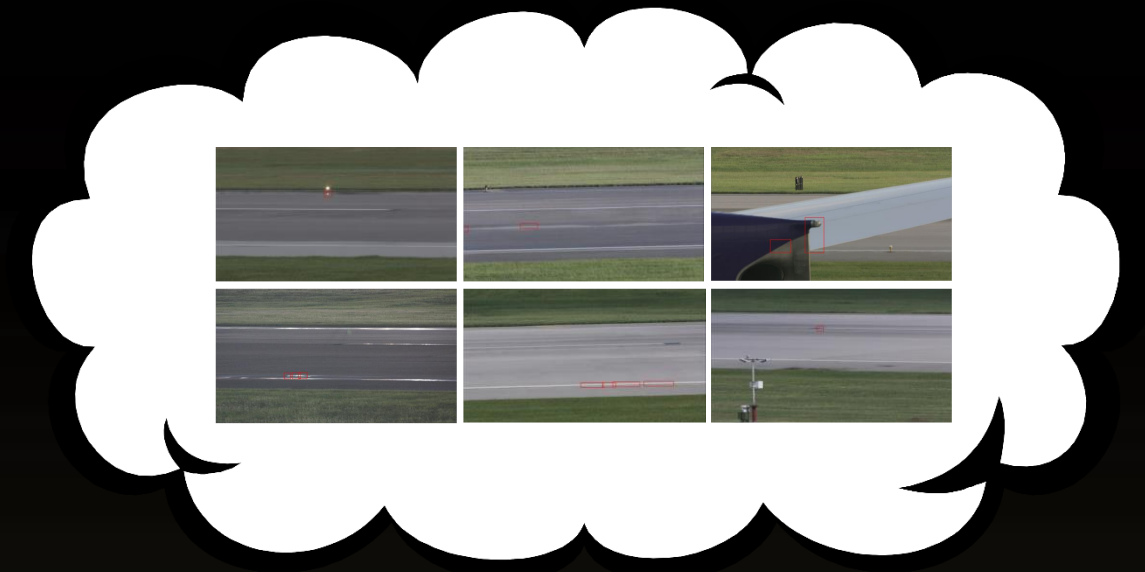
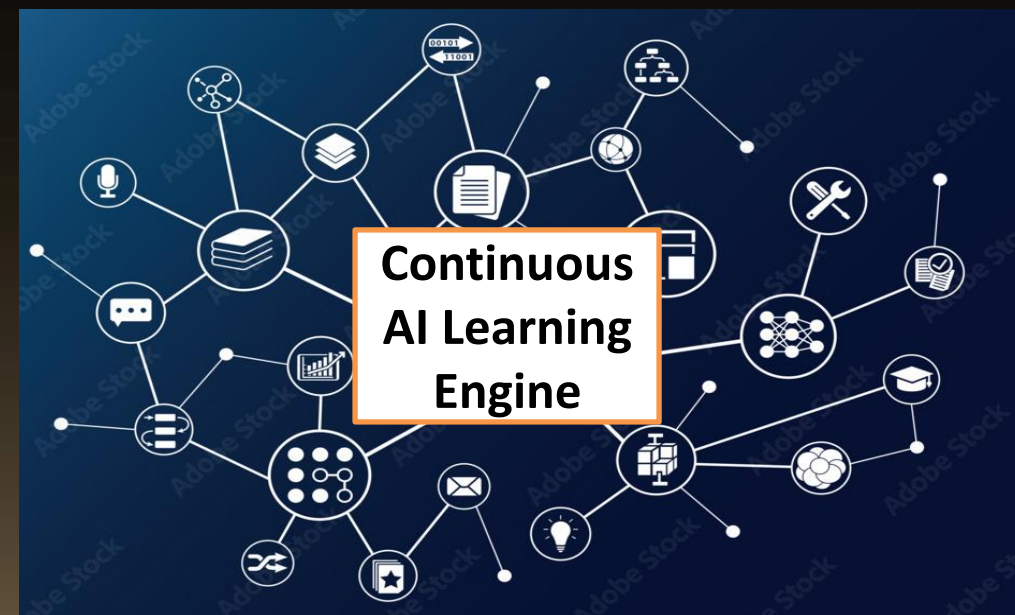
# Runway Real Data for 28 days (6/10 to 3/11/ 2023) On-Site Improvement Against Existing FOD System

- **Existing System at 1 of 2 Asian Airports**
  - Existing System fired **1,760** invalid alerts in 28 days
  - Average **62.9** alert / day
- **Our FOD System with AI Technology**
  - **94%** reduced or only **99** alerts in 28 days.
  - **3.5** invalid alert / day / sensor
  - AI model can be trained and continuous improved



# Continuous AI Learning and Knowledge Retention

- Seamlessly capture data through Operation
  - Enhancement Environmental Training Data
  - Utilize for Optimizing Model Training
- Acquire Unspeakable Knowledge
  - Retain Staff's Expertise
  - Mitigate Impact of Staff Movement
  - Uphold Business Continuity
- Training & Education by AI
  - Staff Training
  - Aviation Education



**Engineers' Experience**



# Scalable Architecture with AI Enabled FOD Solution

**One** FOD AI Engine  
serves  
**Multiple Runway**

**Can Pair Existing**  
FOD Video Sources





Lead Forward 引領未來

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Smart Airport

-

Artificial Intelligence




-

Innovation



# AI Continuous Learning - Large Language Model

## Understanding Local Knowledge

Local Knowledge	Local Meaning
[HK] Call 白車 (white car) 	Calling Ambulance
[Thai]สบายสบาย ("Sabai sabai") 	This phrase means "relax" or "take it easy", but locals would use it to say "how are you?" or "how's it going?".
[Cambodia] ប៉ាតីហ្វាយ ("baati hay") 	The locals will understand that you're asking for a "petrol station" or a gas station. However, in Khmer language, ប៉ាត (baati) means "patio" or a outdoor sitting area, and ហ្វាយ (hay) means "hay" as in grass or hay.

Model Name	Company	Score	Usage	Date
SenseChat V5	商湯	80.03	API	2024年5月11日
GPT-4-Turbo-0125	OpenAI	79.13	API	2024年4月30日
GPT-4-Turbo-0409	OpenAI	77.02	API	2024年4月30日
GPT-4(官網)	OpenAI	75.32	網頁	2024年4月30日
Claude3-Opus	Anthropic	74.47	API	2024年4月30日
Yi-Large	零一萬物	74.29	API	2024年5月11日
Baichuan3	百川智能	73.32	API	2024年4月30日
GLM-4	智譜AI	72.58	API	2024年4月30日
通義千問2.1	阿裡巴巴	72.45	API	2024年4月30日
騰訊Hunyuan-pro	騰訊	72.12	API	2024年4月30日
文心一言4.0	百度	71.90	API	2024年4月30日
MoonShot (Kimi)	月之暗面	70.42	網頁	2024年4月30日

Source: SuperClue AI Model Benchmarking