



SIVDIO
IMAGING



ANALYTICS-ASSISTED DETECTION

ANALYTICS-ASSISTED DETECTION
STRUCTURED CCTV MONITORING ENHANCEMENT FOR
INDUSTRIAL & COMMERCIAL FACILITIES IN MALAYSIA



Most CCTV Systems Record. Few Support Structured Operational Oversight.

Across Malaysia, many CCTV installations are delivered with a primary focus on hardware deployment, recording capacity, and storage retention.

While technically compliant, these systems often function as passive documentation tools rather than structured oversight support mechanisms.

For industrial facilities, construction projects, infrastructure assets, and regulated environments, recording alone may not provide timely situational awareness.

Common Operational Gaps Observed

Footage is frequently reviewed only after an incident occurs

Video becomes retrospective evidence rather than a preventive control layer.

Manual visual monitoring does not scale

As camera counts increase, sustained human review across multiple feeds becomes operationally inefficient and prone to fatigue.

Safety or procedural deviations may not be surfaced early

Restricted zone breaches, PPE non-compliance, unsafe proximity to machinery, or vehicle conflicts may go unnoticed in real time.

Alert fatigue reduces effectiveness

Where motion alerts are used, repetitive triggers without structured logic create desensitisation.

Existing infrastructure may lack defined escalation workflows

Events may be captured but not categorised, documented, or escalated under structured parameters.

The Result

Many CCTV systems operate primarily as retrospective archives — not as active contributors to operational accountability.

In higher-risk environments, this gap may delay detection, increase response time, and limit visibility across critical zones.

Structured monitoring requires more than cameras.

It requires defined logic, governance alignment, and human-validated escalation pathways.

What “Analytics-Assisted Detection” Means

Analytics-Assisted Detection is an optional enhancement applied to structured CCTV systems.

It is **not a standalone software platform**.

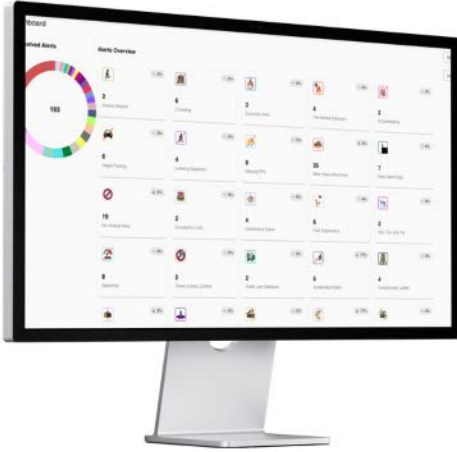
It does not replace personnel.

It functions as a rules-based monitoring support layer configured within an installed CCTV environment.

For commercial and SME facilities, this means existing camera infrastructure can be configured to provide more structured visibility — without replacing the entire system.



What It Does



Predefined monitoring logic can be configured to flag events such as:

- After-hours movement
- Restricted area access
- Loitering in sensitive zones
- Occupancy limits
- Unattended objects
- Basic PPE observation (where applicable)

When triggered:

- Event is flagged
- Personnel review
- Escalation follows defined SOP

All detection remains human-validated.

1 2 3 4 5 6 Designed for Practical SME Deployment

- 1 Industrial & manufacturing environments
- 2 Oil & Gas–related support environments
- 3 Utilities and regulated operational zones
- 4 Commercial & SME facilities
- 5 Construction project sites
- 6 Infrastructure works

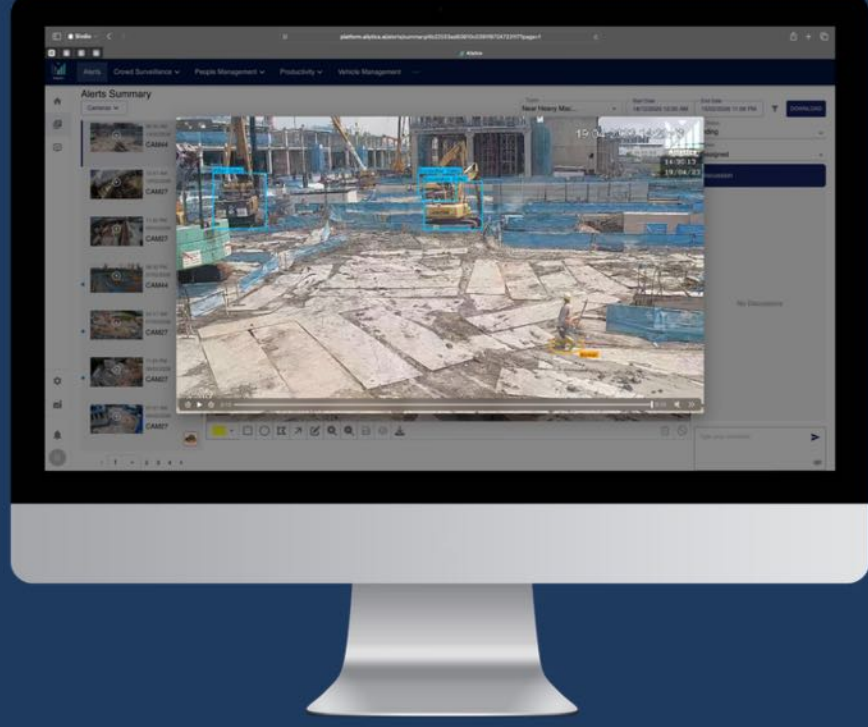
In many sites — whether retail, warehouse, construction, or industrial:

- Footage is reviewed only after incidents
- Monitoring teams manually scan multiple camera feeds
- Restricted zone breaches may be detected late
- Unsafe proximity to machinery may go unnoticed
- After-hours activity lacks structured escalation

As camera counts increase, sustained human monitoring alone becomes operationally inefficient.

Analytics-Assisted Detection introduces structured flagging logic to assist visibility — under defined governance controls.

Unleash the power of Visual Data





Deployment Principle

Typical Monitoring Applications



Commercial / SME

- After-hours movement
- Loitering
- Occupancy limits
- Unattended objects

- New CCTV installations
- Existing IP CCTV systems (where compatible)
- Selected high-risk zones only



Construction / Infrastructure

- PPE observation (review-based)
- Worker-machine proximity
- Restricted zone intrusion
- Vehicle speed or conflict detection



Industrial / Utilities

- Hazard-zone boundary monitoring
- Smoke & fire flagging
- Access breach
- Operational zone segregation

All detections remain:

- Rule-based
- Configured per site
- Subject to human validation
- Escalated under defined SOP

Package Structure

Tier 1	Use Case	Range (Meter)	Key Benefits
Core Compliance (Low Risk)	PPE (helmet, vest)	2-10	PPE generates an alert when a worker does not have appropriate PPE on.
	No Access Zones (Manual)	3-80	Monitors entry into restricted or controlled areas defined during site assessment.
	Access Breach	3-80	This use case allows the end-user to delineate the point at which a person is considered to be have breached into a restricted area.
	Loitering	10-50	This use case detects if anyone is loitering in the construction area.
	Illegal Parking	10-80	Monitors vehicle presence in restricted or non-designated parking zones.

(Suitable for Warehouses, SMEs, Commercial Sites)

This package supports structured visibility across common compliance and access control scenarios typically observed in commercial and light-industrial environments.

Tier 2	Use Case	Range (Meters)	Key Benefits
Safety & Security (Med-High Risk)	Worker Near Heavy Machinery	10-50	Worker near Heavy Machinery generates an alert when a worker walks within 2 meters of operating machinery
	Pedestrian Intrusion		Worker near Heavy Machinery generates an alert when a worker walks within 2 meters of operating machinery
	Vehicle Operating Zone	10-50	This use case helps to identify vehicles that are not part of the list of vehicle types that are allowed to be in a certain zone.
	Smoke and Fire	3-50	Detects visible smoke patterns or early-stage fire indicators within camera coverage.
	Overcrowding	2-40	The camera detect if person(s) are overlapping (right behind another person) in order to derive the accurate person count.

(Suitable for Construction, logistics, industrial facilities)



Package Structure

Tier 1	Use Case	Range (Meter)	Key Benefits
Critical Risk + Operational Analytics (High Risk / Enterprise)	Worker Under Loads	5-60	Worker under load generates an alert when a worker walks beneath a suspended load
	Worker Near Open Edges	3-60	Worker near open edge generates an alert when a worker walks near open edge.
	Slip, Trip, and Fall (STF)	3-10	The person(s) detected should be as far as possible, have their whole body visible to optimise the accuracy of STF detection.
	Ergonomics (Unsafe Lifting)	5-15	This use case detects whether a person adopts the correct lifting posture (straight back and bent knees) when lifting an object.
	Unsafe Gait	5-15	This use case detects if a person's movement is erratic such as running or jumping.

Enterprise Projects · High-Risk Construction · Industrial & Regulated Operational Sites

Construction | Starter

Use Case	Range (Meter)	Key Benefits
Worker near Heavy Machinery	10-50	Worker near Heavy Machinery generates an alert when a worker walks within 2 meters of operating machinery
PPE (helmet, vest)	2-10	PPE generates an alert when a worker does not have appropriate PPE on.
No Access Area	3-80	No Access Area generates an alert when a worker walks in a restricted area.
Speeding	10-80	This use case detects if there are any vehicles are over speeding
Access Breach	3-80	This use case allows the end-user to delineate the point at which a person is considered to be have breached into a restricted area.



Package Structure

Construction | High Risk

Use Case	Range (Meter)	Key Benefits
Worker Under Suspended Load	5-60	Worker under load generates an alert when a worker walks beneath a suspended load
Worker near Heavy Machinery	10-50	Worker near Heavy Machinery generates an alert when a worker walks within 2 meters of operating machinery
Worker near open edge	3-60	Worker near open edge generates an alert when a worker walks near open edge.
PPE (helmet, vest)	2-10	PPE generates an alert when a worker does not have appropriate PPE on.
No Access Area	3-80	No Access Area generates an alert when a worker walks in a restricted area.
Slip, Trip, and Fall (STF)	3-10	The person(s) detected should be as far as possible, have their whole body visible to optimise the accuracy of STF detection.
Handphone Usage	3-15	Handphone Usage generates an alert when a worker is observed actively using a mobile device within a predefined operational or restricted zone.
3 Point Contact	3-12	3 Point Contact generates an alert when a worker using a ladder or elevated access system does not maintain three points of contact (two hands and one foot, or two feet and one hand) during ascent or descent.

Manufacturing

Use Case	Range (Meter)	Key Benefits
PPE (helmet, vest)	2-10	PPE generates an alert when a worker does not have appropriate PPE on.
Slip, Trip, and Fall (STF)	3-10	The person(s) detected should be as far as possible, have their whole body visible to optimise the accuracy of STF detection.
Poor Ergonomics	5-15	This use case detects whether a person adopts the correct lifting posture (straight back and bent knees) when lifting an object.
Smoke and Fire	3-50	This use case detects any smoke/fire activities from the camera view
Handphone Usage	3-15	Handphone Usage generates an alert when a worker is observed actively using a mobile device within a predefined operational or restricted zone.
3 Point Contact	3-12	3 Point Contact generates an alert when a worker using a ladder or elevated access system does not maintain three points of contact

Package Structure

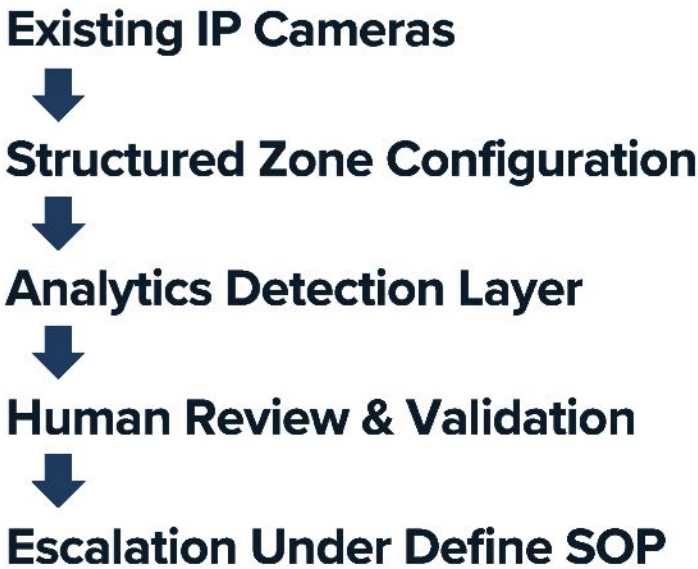
Logistic / Warehouse

Use Case	Range (Meter)	Key Benefits
Illegal Parking	10-80	See where the vehicles are parked to allow for the zones to be drawn
Speeding	10-80	This use case detects if there are any vehicles are over speeding
Access Breach	3-80	This use case allows the end-user to delineate the point at which a person is considered to be have breached into a restricted area.
Unattended objects	3-30	This use case detects if an object has been left for a defined period of time. The user must designate where the area for monitoring is.
Loitering	10-50	This use case detects if anyone is loitering in the construction area.
Vehicle Op Detection	10-50	This use case helps to identify specific types of vehicles are observed to be operating.
Vehicle Op Zone	10-50	This use case helps to identify vehicles that are not part of the list of vehicle types that are allowed to be in a certain zone.
Vehicle Trespass	5-50	This use case identifies vehicles that drive past a predefined line.
Pedestrian Intrusion	5-50	This use case generates an alert when a pedestrian enters a vehicle-designated or restricted operational zone defined during configuration.

Property / Facilities

Use Case	Range (Meter)	Key Benefits
No Access Area	3-80	No Access Area generates an alert when a worker walks in a restricted area.
Illegal Parking	10-80	See where the vehicles are parked to allow for the zones to be drawn
Traffic Jam Detection	10-50	This use case calculate whether a traffic jam has occurred, all vehicles/machinery involved on the target area drawn shall be visible and avoid overlapping.
Occupancy Limit	5-20	The use case allows the end-user to configure the minimum and maximum number of persons in a drawn area.
Access Breach	3-80	This use case allows the end-user to delineate the point at which a person is considered to be have breached into a restricted area.
Smoke and Fire	3-50	This use case detects any smoke/fire activities from the camera view

How It Integrates



- Detection logic processes video streams from existing IP cameras using predefined rules configured during site assessment.
- All alerts remain subject to human validation.

Option A — On-Prem (Preferred for Industrial Sites)	Option B — Cloud Processing	Option B — Edge Device (Compact Deployment)
[CCTV]	[CCTV]	[CCTV]
↓ [AI Processing Unit]	↓ [Secure CCloud AI]	↓ [Edge AI Device]
↓ [Dashboard / Mobile Alerts]	↓ [Dashboard / Mobile Alerts]	↓ [Dashboard / Mobile Alerts]
<ul style="list-style-type: none"> • Deployed within internal network environment. • Suitable for construction and industrial sites requiring controlled infrastructure. 	<ul style="list-style-type: none"> • Suitable where stable external connectivity is available. 	<ul style="list-style-type: none"> • Designed for smaller or remote sites with limited infrastructure.



Pilot-First Deployment Timeline

Existing IP Cameras

Governance Principle

- No uncontrolled deployment.
- No autonomous enforcement.
- All alerts remain human-validated under defined escalation procedures.

1

Infrastructure Review

- Camera position & coverage validation
- Network & storage capability check
- Power & system compatibility review

✓ Confirms technical feasibility before activation

2

Scope Definition

- Identify priority risk zones
- Select applicable detection use cases
- Configure alert thresholds
- Align with internal SOP & escalation workflow

✓ Defines operational boundaries

3

Limited Pilot Activation

- Configure selected cameras only
- Apply rule-based detection logic
- Calibrate alert sensitivity
- Conduct controlled testing

✓ No automatic full-site rollout

4

Evaluation & Validation

- Review detection accuracy
- Assess false alert frequency
- Validate response workflow
- Check system performance impact

✓ Adjust before expansion

5

Controlled Full Deployment

- Expand to approved zones
- Finalise configuration settings
- Document monitoring procedures
- Confirm governance alignment

✓ Structured, documented activation



Governance & Compliance Framework

Operational Control & Structured Oversight

Analytics-Assisted Detection operates within defined governance boundaries.

It is deployed as a monitoring enhancement — not an autonomous enforcement system.

1 Human-in-the-Loop Validation

All alerts generated under configured rules require human review before escalation.

- ✓ No automated disciplinary action
- ✓ No autonomous decision-making
- ✓ Final judgement remains with designated personnel

Governance Principle

- Analytics-Assisted Detection improves visibility within controlled parameters.
- It supports structured monitoring —
- without replacing personnel, bypassing SOP, or introducing uncontrolled automation.

3 Escalation Workflow Alignment

Alert handling follows internal SOP and reporting hierarchy.

- ✓ Defined notification pathway
- ✓ Structured response documentation
- ✓ Clear accountability trail

5 Contractor-Led Execution

Deployment and configuration are carried out under structured contractor methodology.

- ✓ Installed and integrated under CIDB-registered ME scope
- ✓ Aligned with site compliance requirements
- ✓ Suitable for industrial, construction, and regulated environments

2 Rule-Based Configuration

Detection logic is applied only within predefined zones and parameters agreed during site assessment.

- ✓ Zone boundaries are documented
- ✓ Alert thresholds are configurable
- ✓ No blanket site-wide activation

4 Data & Access Control

System access and alert visibility are controlled under structured permissions.

- ✓ Role-based dashboard access
- ✓ Internal network deployment (where applicable)
- ✓ PDPA-conscious implementation

This enhancement supports operational visibility — it does not expand data exposure.



Case Metrics & Performance Indicators

[5X] Monitoring Coverage

[7X] Hazard Visibility

[60-80%] Behavioural Improvement Trend

[85-90%] Detection Accuracy

Metrics represent observed operational trends under defined configurations.

They do not:

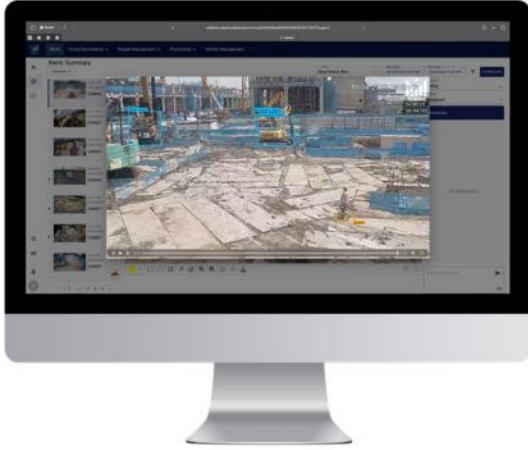
- Replace certified safety systems
- Guarantee incident elimination
- Substitute on-ground supervision
- Function as autonomous enforcement tools

Performance is influenced by:

- Camera positioning
- Network stability
- Lighting conditions
- Workforce density
- Defined zone boundaries

All results are subject to site-specific assessment and validation.

Structured Engagement Pathway



Analytics-Assisted Detection is delivered under structured contractor methodology by:

Sivdio Imaging Sdn. Bhd.
CIDB-Registered ME Contractor
Authorised for CCTV & Low-Voltage Works

This initiative operates under CCTV Monitoring Malaysia — supporting industrial and commercial environments across Malaysia.

Request a Structured Monitoring Assessment

Suitable for:

- New CCTV installations
- System upgrades
- Monitoring enhancement evaluation
- High-risk operational environments

Assessment ensures proper design, governance alignment, and operational suitability before deployment.

Request a Monitoring Assessment

Analytics-Assisted Detection is deployed only after structured review and suitability confirmation.

Whether for new installation or enhancement of an existing IP CCTV system, engagement begins with a formal site assessment.

Suitable For

- Commercial & SME facilities
- Construction project sites
- Industrial & manufacturing environments
- Logistics & warehouse operations
- Infrastructure & regulated operational zones

Assessment Scope Includes

Infrastructure Review

- Camera positioning & coverage validation
- Network readiness & bandwidth assessment
- Storage compatibility review

Operational Alignment

- Identification of priority risk zones
- Selection of applicable detection use cases
- Alert threshold configuration review
- Escalation workflow alignment

Deployment Suitability

- On-Prem / Cloud / Edge model recommendation
- Pilot configuration proposal
- Governance alignment confirmation
- No activation proceeds without documented review.

CCTV Monitoring

An Industrial Monitoring Service by Sivdio Imaging Sdn. Bhd.
CIDB-Registered Contractor (B, CE, ME)

CCTV Monitoring is a specialised operational oversight service focused on industrial, infrastructure, and commercial environments across Malaysia.


For full corporate profile, compliance credentials, and multi-sector capabilities, visit:
www.sivdiogroup.com



 www.cctvmonitoring.com.my

 603.2731.9307

 emailus@cctvmonitoring.com.my

 Level 35-02 (East Wing), Menara Q-Sentral
2A, Jalan Stesen Sentral 2, Kuala Lumpur Sentral,
50470 Kuala Lumpur, Wilayah Persekutuan, MALAYSIA