

People Counting

邊緣運算與高精度人工智慧人流統計解決方案



Overview

人工智慧人流統計：核心概念與數據呈現

計數方式 (Counting Methods)



區域計數 (Area Counting)：計算單一影像畫面中的總人數。可結合閾值 (Threshold) 觸發警報 (例如：超過10人即發送警報)。



累積流量計數 (Accumulated Flow Counting)：計算一段時間內進入/離開區域或跨越虛擬線的單一個體，結果以 Metadata 形式輸出。

數據呈現 (Data Delivery)



Counting Metadata：以純文字格式與影像串流並行傳輸，適合伺服器端儲存並生成歷史時間段的數據報表。



Counting OSD：將即時計數數值直接嵌入影像 (Video Overlay)，無需管理伺服器進行特殊整合，適合即時影像監看。

商業分析 (Business) 著重時間段流量報表；安全防護 (Security) 著重異常壅塞與超載警報 (High Occupancy Alarm)。

Features

人流統計核心功能：Noto Sans TC Regular



Area Counting
of People
區域人數統計



Accumulated Flow
Counting of People
累積人流量統計



Counting Metadata
Transmission
計數元數據傳輸



Video Streams with
Embedded Counting Values
內嵌計數數值之影像串流



Push and Pull
Metadata
推播與擷取元數據



Counting Alarms by
Thresholds
基於閾值之計數警報



Single Camera
Occupancy Counting
單機佔用空間計數

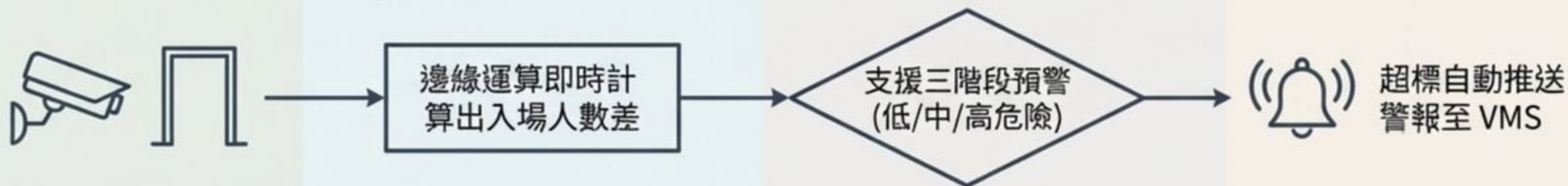


Multi-Camera
Occupancy Counting
多機協同佔用空間計數

Architectures

單機運算與多機協同之系統架構

架構一：單機運算 (Single Camera Architecture)



架構二：多機協同 (Multi-Camera Architecture)



Applications

針對垂直市場之精準應用場景

場景一：人群偵測與預防 (Crowd Detection & Prevention)



核心技術：
採用 Area Counting。

應用機制：
安防人員設定壅塞閾值。
當畫面中人群過度聚集時，攝影機主動向控制中心發送警報。

目標市場：
交通樞紐（車站、機場）、
大型公共展會空間。

場景二：場域容留人數管控 (Occupancy/Capacity Limit)



核心技術：
採用 Accumulated Counting。

應用機制：
針對人員逐一進入且無法同時出現於同一畫面的場景。
系統自動評估已進入總人數，防止場域超載。

目標市場：
零售百貨、封閉式娛樂場所、
受管制之辦公大樓。

Solutions

影像管理系統 (VMS) 無縫整合與授權優勢



**ACTi NVR 3
Corporate /
ZNR-424**

核心管理伺服器





官方強烈建議搭配 NVR 3 Corporate 或 ZNR-424 作為接收人流統計 Metadata 與警報事件的主系統。

零隱藏成本

免收 AI 軟體授權費 (No AI License Required)。系統整合商僅需常規的影像頻道授權 (Regular video channel license)，大幅降低專案建置成本與提案門檻。

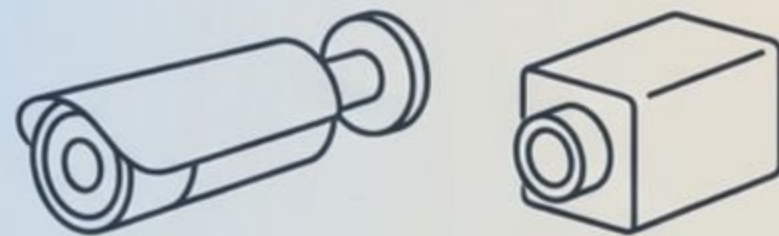
Solutions

系統配置與應用對照矩陣 (System Configuration Matrix)

	Application	Camera QTY	Method	Purpose	Camera	VMS
	Single Line Counting	1	OSD only	Basic Business Analysis without Integration	Smart Z (people/flow counting)	any NVR, or camera web client
		1	Metadata -> Report	Business Analysis (report)	A427, A428	with any NVR (Report from camera web)
	Single-Entrance Occupancy	1	3 level Thresholds to event	Security (High Occupancy Alarm)	Z-Series / Any other A-series (except A427, A428)	Any ZNR (except ZNR-126) / with any NVR (Alarm from camera)
		1	Metadata -> Report	Business Analysis (report)	Z-Series / A427, A428	Any ZNR (except ZNR-126) / with any NVR
	Multi-Entrance Occupancy	2 or more	3 level Thresholds to event	Security (High Occupancy Alarm)	Z-Series	Any ZNR (except ZNR-126)
		2 or more	Metadata -> Report	Business Analysis	Z-Series	Any ZNR (except ZNR-126)
	Crowd Detection	1	3 level Thresholds to event	Security (Crowd Alert)	Any other A-series (except A427, A428)	with any NVR (Alarm from camera)

Product Introduction

Product Matrix - Bullet & Box Cameras



Box / Fixed Cube

- **E19:** 5MP | Fixed Lens | Extreme WDR | Superior Low Light | Built-in Analytics

Bullet - A Series

- **A220:** 2MP | 4.3x Optical Zoom | Extreme WDR | Extreme Low Light
- **A426:** 5MP | 4.4x Optical Zoom | Extreme WDR | Superior Low Light
- **A427 / A428 / A429:** 4MP | 4.3x Optical Zoom | Adaptive IR | Extreme WDR
- **A429-P1:** 4MP | 4x Optical Zoom | Adaptive IR | Extreme WDR

Bullet - Z Series

- **Z411:** 4MP | 22x Optical Zoom | Adaptive IR | Extreme WDR
- **Z415:** 2MP | 10x Optical Zoom | Extreme WDR
- **Z416:** 5MP | 12x Optical Zoom | Extreme WDR
- **Z429:** 8MP | 5x Optical Zoom | Adaptive IR | Superior WDR
- **Z47:** 8MP | 4.3x Optical Zoom | Extreme WDR | Superior Low Light

Product Introduction

Product Matrix - Dome, Turret & Hemispheric Cameras



Fisheye / Hemispheric

- A711: 12MP | Outdoor Hemispheric Dome | Adaptive IR | Extreme WDR
- Q84: 20MP | Outdoor 4-Sensor 360° Dome | 5x Optical Zoom | Extreme WDR

Turret

- Q550: 8MP | Outdoor 2-Sensor 180° Turret | Extreme WDR
- Z64: 8MP | Outdoor Zoom Turret | 4.3x Optical Zoom | Adaptive IR | Extreme WDR

Dome

- A826: 5MP | Outdoor Zoom Dome | 4.4x Optical Zoom | Extreme WDR
- Q711: 8MP | Outdoor 2-Sensor Dome | Superior WDR
- Z721: 4MP | Outdoor Fixed Dome | M12 | Extreme WDR
- Z810: 8MP | Outdoor Zoom Dome | 4.3x Optical Zoom | Extreme WDR
- Z818: 8MP | Outdoor Zoom Dome | 5x Optical Zoom | Adaptive IR | Superior WDR

Product Introduction

Product Matrix - PTZ & Positioning Systems



PTZ - High Zoom / Multi-Imager

- K9001: 32MP | Multi-Imager PTZ | 42x Optical Zoom | Adaptive IR | Superior WDR
- K953 / K954: 5MP | 33x / 42x Optical Zoom | Adaptive IR | Extreme WDR
- K953-2MP: 2MP | 33x Optical Zoom | Adaptive IR | Extreme WDR
- A952 / A956: 8MP (22x Zoom) / 2MP (40x Zoom) | Extreme WDR

PTZ - Z Series

- Z952 / Z954: 4MP / 8MP | 25x Optical Zoom | Extreme WDR
- Z953: 8MP | 40x Optical Zoom | Extreme WDR
- Z956 / Z957: 4MP | 33x Optical Zoom | Extreme WDR
- Z958: 2MP | 16x Optical Zoom | Extreme WDR

PTZ Positioning Systems

- Q990: 2MP | 45x Optical Zoom | Superior WDR
- Q991 / Q992: 4MP / 8MP | 41x Optical Zoom | Superior WDR

Product Introduction

Comparison - 專案選型與規格對照指南



極致解析度需求 (Max Resolution Focus)

針對廣域涵蓋：首選 K9001 (32MP 多鏡頭 PTZ) 或 Q84 (20MP 四鏡頭 360° 魚眼)。



長距離精準辨識 (Max Zoom Focus)

針對挑高與深遠場域：首選 Q990 (高達 45x 光學變焦定位系統) 或 K954 (42x 光學變焦 PTZ)。



高性價比邊緣運算 (Edge AI Focus)

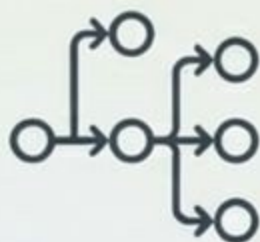
針對標準單一出入口：首選 Z系列 / A系列 Bullet 與 Dome 型號 (如 Z415, A427) ，全面內建 Analytics 分析與 Extreme WDR 寬動態技術。

Summary

賦能系統整合商的致勝關鍵



完整且靈活的硬體產品線：從固定式 Box/Bullet 到 32MP 多鏡頭 PTZ，全面覆蓋各種安裝環境與光線挑戰 (Extreme WDR/Low Light)。



彈性的架構與應用：支援單機運算警報或 NVR 多機協同，完美適配零售人流報表分析與安防高佔用率預警 (High Occupancy Alarm)。



無隱藏成本的強大整合：搭配 NVR 3 Corporate 或 ZNR-424 實現隨插即用的 OSD 與 Metadata 整合，且絕對免收 AI 軟體授權費。

Contact Us

立即啟動您的專案規劃



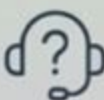
Website: www.acti.com



Email: sales@acti.com



Phone: +886-2-2656-2588 / +1-866-410-ACTi (2284)



Support: Customer Helpdesk & Project Registration available online.

Register today for Member-Exclusive Pricing and Project Protection

(無最低訂購量限制，保證專案價格保護)