People Counting & Heatmap Solution

Precise Counting Analytics for Intelligent City Services
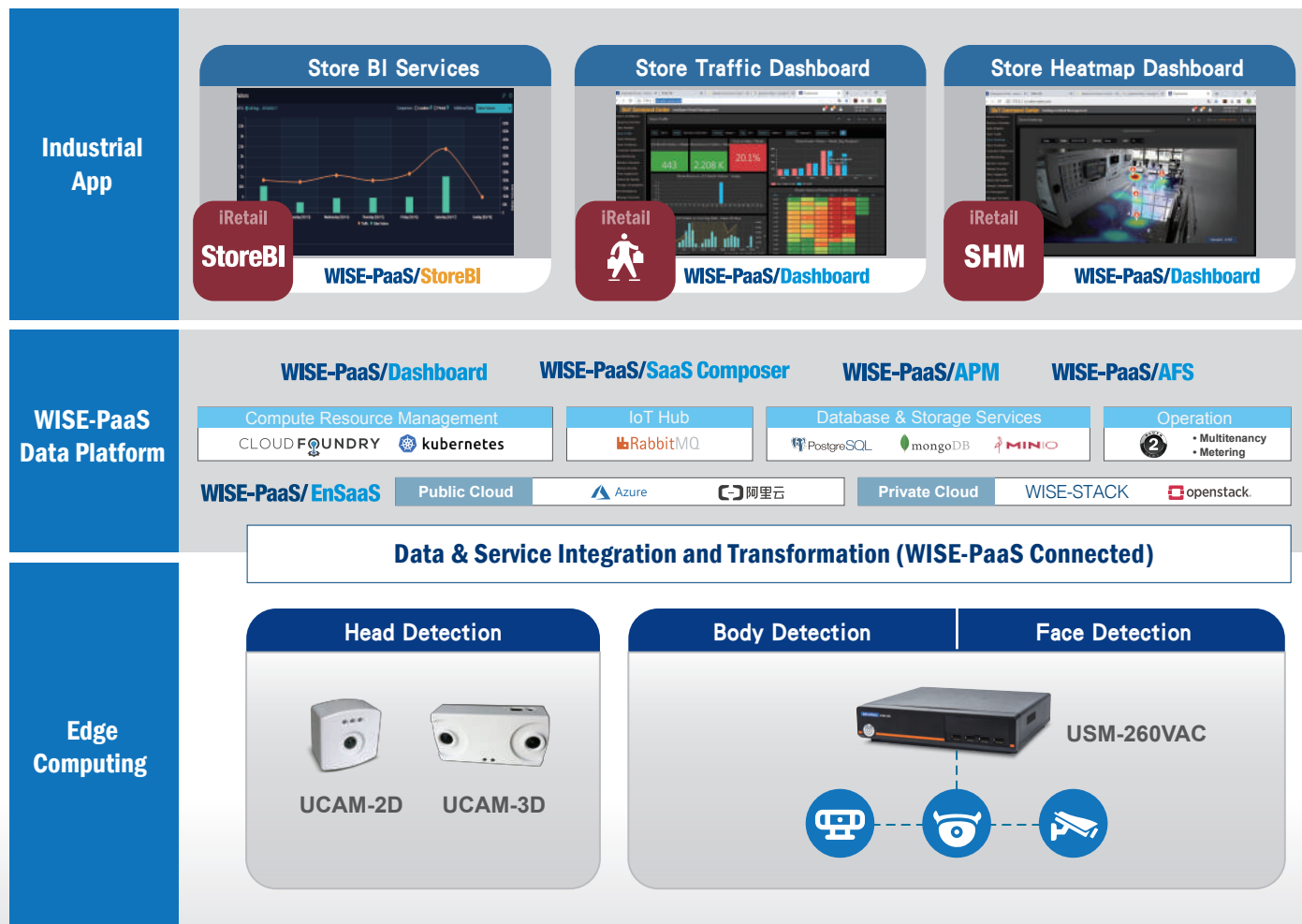
Solution
Ready
Package

IoT.SRP

✓ **Multiple algorithms support diverse application scenarios**

✓ **Transforms legacy cameras into AI-enabled smart cameras**

✓ **Enables face detection for identifying visitors and staff**

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WISE-PaaS
AIoT Solutions & Marketplace

PEOPLE COUNTING AND HEATMAP SOLUTION

Understanding pedestrian flows, density, and activity in public parks, shopping centers, event venues, theme parks, and other public attractions is important for providing business insights and intelligence. People counting and pedestrian monitoring enable you to identify congestion points, optimize access, and measure footfall traffic. The collected data can also be used to produce heatmaps that visualize traffic flow data, hot spots and cold zones, dwell time, and sales conversion funnels for actionable insights on visitors inside and outside your stores.

SOLUTION ARCHITECTURE

Industrial App

Store BI Services

iRetail
StoreBI
WISE-PaaS/**StoreBI**

Store Traffic Dashboard

iRetail
WISE-PaaS/**Dashboard**

443 | 2,208 K | 20.1%

Store Heatmap Dashboard

iRetail
SHM
WISE-PaaS/**Dashboard**

WISE-PaaS Data Platform

WISE-PaaS/Dashboard **WISE-PaaS/SaaS Composer** **WISE-PaaS/APM** **WISE-PaaS/AFS**

Compute Resource Management	IoT Hub	Database & Storage Services	Operation
CLOUD FOUNDRY kubernetes	RabbitMQ	PostgreSQL mongoDB MINIO	② • Multitenancy • Metering

WISE-PaaS/EnSaaS

Public Cloud	Azure 阿里云	Private Cloud	WISE-STACK openstack.

Data & Service Integration and Transformation (WISE-PaaS Connected)

Edge Computing

Head Detection

UCAM-2D   UCAM-3D

Body Detection   Face Detection

USM-260VAC

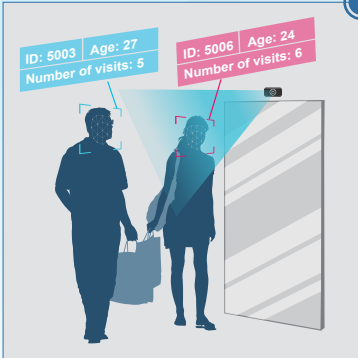Retail   Shopping Malls   Airports and Tra

SOLUTION BENEFITS

Supports people counting in diverse application scenarios

- Multiple algorithms for face, body, and head detection
- Adaptable to different application requirements

Transforms legacy c...

- Supports multiple vide...

Face detection:
People counting and demographics

AI technology supports face detection and age/gender identification for demographics analysis. Facial identification algorithms filter out repeat visitors and staff to ensure accurate data. Camera can be installed on digital signage or at POS terminals.

ID: 5003 | Age: 27
Number of visits: 5

ID: 5006 | Age: 24
Number of visits: 6

Sensors
2D IP camera or webcam

Edge Computer
USM-260VAC
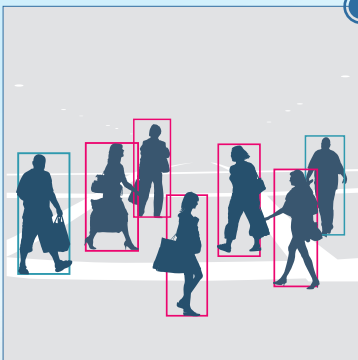
Body detection:
People counting, heatmap, and dwell time

Counts people entering/leaving counting lines and measures dwell times. The data collected can be used to produce heatmaps and for indoor and outdoor footfall tracking.
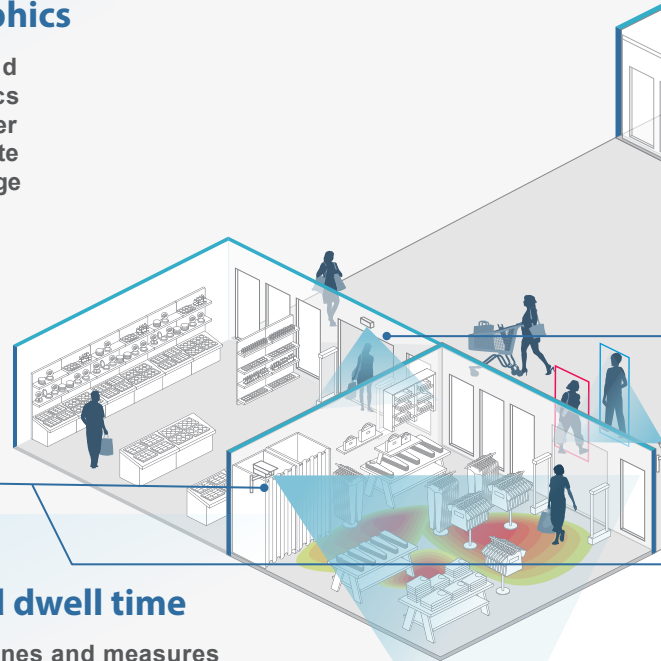
Sensors
2D IP camera or webcam

Edge Computer
USM-260VAC

Application So...

...nsportation

Museums and Libraries

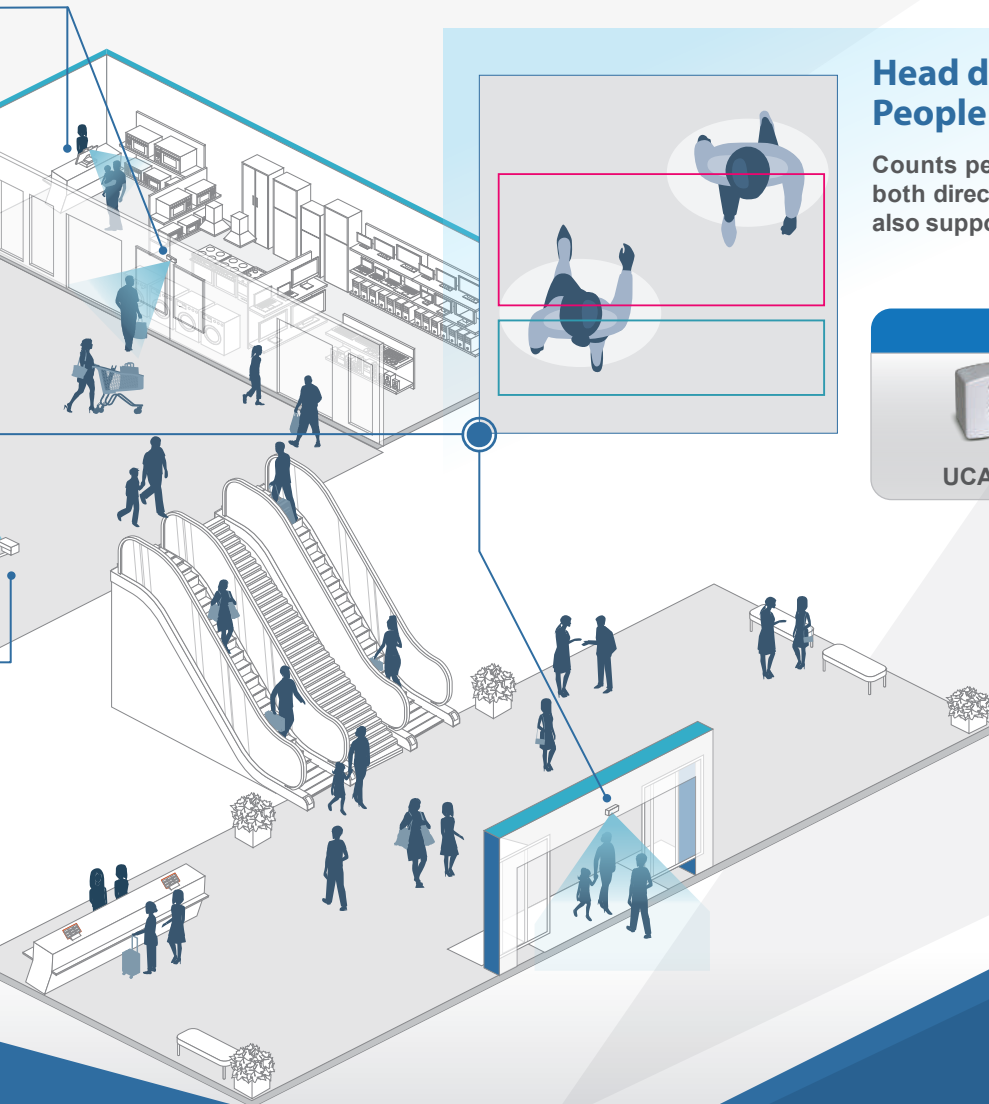Expos and Events

Quick Serv...

cameras into smart cameras

eo formats: RTSP/ONVIF/webcam

Superior detection for highly accurate people counting

- Filters out repeat visitors with face detection
- Reduces prohibited access false alarms with body detection

Head detection: People counting

Counts people who cross predefined zones in both directions (entry/exit). These smart cameras also support cross-camera tracking and zooming.

Sensors

UCAM-2D   UCAM-3D

cenarios

vice Restaurants

Factories

Smart Buildings

Video AI Edge Device

People Counting via Head Detection

Part Number		UCAM-120A-U01	UCAM-130A-U01
Software	Counting Type	Head detection	Head detection
	Function	People counting	People counting
Materials		Flame-retardant polycarbonate shell (UL94 V0 flame rating or equivalent)	Flame-retardant polycarbonate shell (UL94 V0 flame rating or equivalent)
Device Dimensions		95 x 95 x 58 mm/3.74 x 3.74 x 2.28 in	162 x 78 x 48 mm/6.37 x 3.07 x 1.88 in
Packaging Dimensions		155 x 155 x 132 mm/6.1 x 6.1 x 5.19 in	253 x 168 x 143 mm/9.96 x 6.61 x 5.62 in
Weight		0.5 kg/1.1 lb	0.5 kg/1.1 lb
Power		5W	10W
Lens Options		2.2 mm wide-angle lens	2.2 mm wide-angle lens
Internal Storage		512 MB DDR3	2 GB DDR3
Flash		8 GB EMMC	8 GB EMMC
Network		100M Ethernet	100M Ethernet
RTC Data Retention		At least 3 days after power outage	At least 3 days after power outage
LED		3 x tri-state LEDs	2 x tri-state LEDs
Power Supply		13.5W PoE, IEEE 802.3af PoE Class 3	13.5W PoE, IEEE 802.3af PoE Class 3
Environment	Operating Temperature	0 ~ 50 °C/32 ~ 122 °F	0 ~ 50 °C/32 ~ 122 °F
Function	Mount Height	2.3 ~ 5 m/90.55 ~ 196.85 in	2.3 ~ 5 m/90.55 ~ 196.85 in (can support up to 30 m/1181.1 in with custom lens)
	Mount Angle	Supports horizontal and tilt installation, up to 45° (tilt installation may reduce counting accuracy)	Supports horizontal and tilt installation, up to 45° (tilt installation may reduce counting accuracy)
	Maximum Counting Area	6	8
	Maximum Tracking Capability	20 ~ 50 people simultaneously	20 ~ 100 people simultaneously
	Data Storage	2 x months max. after network disconnect	2 x months max. after network disconnect

People Counting via Body/Face Detection

Part Number		USM-260VAC-G1E-C
Software	Counting Type	Body/face detection
	Function	Body detection: People counting and heatmap Dwell-based face detection: People counting and demographics
	Max. Analyzed Channels	2 x inputs from camera sources
CPU		Intel® Celeron® i7-7700, 3.6 GHz
RAM		16 GB DDR4, 2400 MHz
Graphics		Integrated Intel® HD Graphics 530
Storage		1 x SATA 2.5" HDD (1 TB)
Internet		1 x RJ45 (10/100/1000 Mbps)
I/O		4 x USB, 2 x COM, 2 x RJ-45
Power		90W (19V power adapter)
Dimensions		240 x 210 x 57 mm/9.44 x 8.26 x 2.24 in
Weight		3.5 kg/7.71 lb
Operating System		Microsoft® Windows 10 IoT Enterprise 2019 LTSC
Environment	Temperature	0 ~ 40 °C /32 ~ 104 °F (with 2.5-in hard disk)
	Humidity	90% @ 40 °C (non-condensing)
	Vibration	With HDD: 0.5 Grms, IEC 60068-2-64, random, 5~500Hz, 3 axes, 1hr/axis
	Shock	With HDD: 10 G, IEC 60068-2-27, half sine, 11 ms duration

WISE-PaaS/Store BI Service Function List

Management Center	Store Management	Add/delete/modify store information
		Provide system and user-defined tags to classify store properties
		Quickly search through keywords and tags to find a specific store
		Supports manual importing of POS transaction data
		Input store information: opening time, staff scheduling, rental costs
	User Management	Add/delete/modify access key information user information
		Three authority levels: account administrator, manager, and user
	Device Management	Real-time monitoring of device health/status
		Automatic email notifications if device abnormalities are detected
	Access Key Management	Add/delete/modify access key information
		Allow API access for a specified period
BI Dashboard	Statistics Widget	Data types: store traffic, sales volume, transactions, conversion rate, sales per customer, turn-in rate, returning customers, average dwell time, customer gender and age, store heatmap
		Chart type: KPI indicator, line chart, bar chart, pie chart, matrix, ranking table, weather info
	Data Analysis	Cross-region/store, time period, multi-data comparison
		Daily/weekly/monthly/yearly/user-defined reports
	User-Defined Dashboard	Pin or create user-defined widgets
		Flexibly adjust widget size and placement
	Cross Platform Support	Shock tolerance with HDD:10 G, IEC 60068-2-27, half sine, 11 ms duration
		Supports devices with at least 1024x768 resolution (report layout automatically adjusted according to device resolution)
	Data Security and Third-Party Software Integration	Data transmitted in binary format using AES 256-bit encryption for high security
		Provides comprehensive Restful APIs for third-party software integration
Enterprise System Architecture	Cloud Deployment	Public cloud: Microsoft Azure
		Private cloud: Microsoft server 2012
	Stability	Supports system redundancy and automatic database backups

Ordering Information

Device	Counting Type	Head detection		Body and face detection
	Part Number	UCAM-120A-U01	UCAM-130A-U01	USM-260VAC-G1E-C
I.App	WISE-PaaS/ StoreBI Service **Public Cloud P/N**	32CSUSTCLOUD00 (WISE-PaaS/Store BI public cloud UCAM license, annual license fee)		32CSVACCLOUD03 (WISE-PaaS/Store BI public cloud video AI counting edge license, annual license fee)
	WISE-PaaS/ StoreBI Service **Private Cloud P/N**	32CSUSTCPRIV00: 25 devices max. 32CSUSTCPRIV01: 50 devices max. 32CSUSTCPRIV02: 300 devices max.		

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Online Catalog