



# MILESIGHT PEOPLE SENSING SOLUTION

2025.11.4

MILESIGHT



# 01

## MILESIGHT OVERVIEW

# ABOUT MILESIGHT

Milesight offers multi-potential sensing products that accurately capture the most relevant and significant data for a growing variety of needs and applications. Across AI, 5G, IoT, and other forward-thinking technologies, we innovatively extend the technological potential to unique niches and scenarios. With a keen perception of data value, we prioritize adaptive agility to quickly respond to customer-specific challenges and deliver safety, efficiency, and business insights. In collaboration with a diverse partner ecosystem, we are committed to realizing data value and making real and positive impacts in the fields of smart building, intelligent traffic, intelligent security, smart city, and beyond.



SENSING

**Sensing**

IoT Product Provider



**600+**

Employees



**2000+**

Distributors and  
System Integrator Partners



**120+**

Serves to 120+  
Countries and Regions



**50%+**

Compound Annual  
Growth Rate



**2**

2 Product Lines: Video  
Surveillance and IoT



# RICH PRODUCT LINEUP



Milesight is a multi-dimensional sensing products IoT provider transforming how the world is perceived and connected, and delivering safety, efficiency, and business insights.

Xjsxsl%stijx

Htssjhyts

[jwfhf%isizxywjx



Indoor Air Quality



People Counting & Occupancy



Temp. & Humi. Detection



LoRaWAN® Gateway



Smart Building



Smart Retail



Smart Agriculture



Energy Efficiency Control & Monitoring



Environmental Sensing



Distance Detection



Industrial Cellular Routers



Smart City



Cold Chain & Logistic



Smart Industry



Water Leak Detection



LoRa® Controllers



IoT Weather Station



5G Suit



Milesight IoT Cloud



DeviceHub



Milesight VPN



Milesight Development Platform

R fpj%jsxsl% R fyyw

# Remarkable Growth Journey



## • 2011

### Establishment

- Milesight headquarters was founded
- Started from video surveillance industry



### Building a Solid Foundation

- Built Milesight IoT brand for IoT industry in 2017
- Introduced LoRaWAN technology
- Introduced 4G Cellular Router

## • 2012-2017

## • 2018-2020

### Fast Growing

- Joined LoRa Alliance to dive into IoT ecosystem in 2019
- Sharply increased brand awareness



### Break Limitation

- Introduced Milesight new brand identity
- Further explored frontiers of IoT and sensing landing

## • 2021-2022



## • 2023-2025

### Strategy Upgrade

- From 2023 to 2025, our product portfolio has grown substantially, with numerous high-quality offerings that have earned strong recognition from our customers.
- Occupancy & People Counting Series for more targeted industries



With strong R&D capabilities and a wide variety of solutions, In just a few years our product stands as a formidable competitor to the industry's top brands, offering both technological excellence and rapid customization.

# Worldwide Coverage and validation

Milesight

Reached More than  
**120** Countries



What's more, All the features come with a **one-time payment**

**vemco group**  
Data Analytics, Insights & Actions

**TC Group**  
Solutions

**A** Affluences

**AI Innovation Group**

**Xe Xenometric**

**PFM**

**ariadne**  
CONNECTING THE DOTS

# 01 PEOPLE COUNTING SOLUTION

# MULTIPLE MODELS AVAILABLE

## ➤ 1. FLAGSHIP MODELS

- High Accuracy-up to 99.8%
- Wired Power Supply (DC/PoE)
- Rich People Counting Features
- Multiple Wireless Communication Options



AI Vision Counter  
VS121



AI ToF Counter  
VS133



Ultra AI ToF Counter  
VS135



AI Stereo Vision Counter  
VS125



Ultra HighMount People Counter  
VS126



VS125 AI Outdoor People Counter

## ➤ 2. COST-EFFECTIVE OPTIONS

- Bidirectional People Counting/Occupancy detection
- Wireless Deployment (Battery-Powered)
- LoRaWAN Wireless Communication



Dual PIR Counter  
VS350



Wireless AI Space Occupancy Sensor  
VS321



Cubicle Occupancy Sensor  
VS330



Radar Fall Detection Sensor  
VS373



IR Breakbeam Counter  
VS360

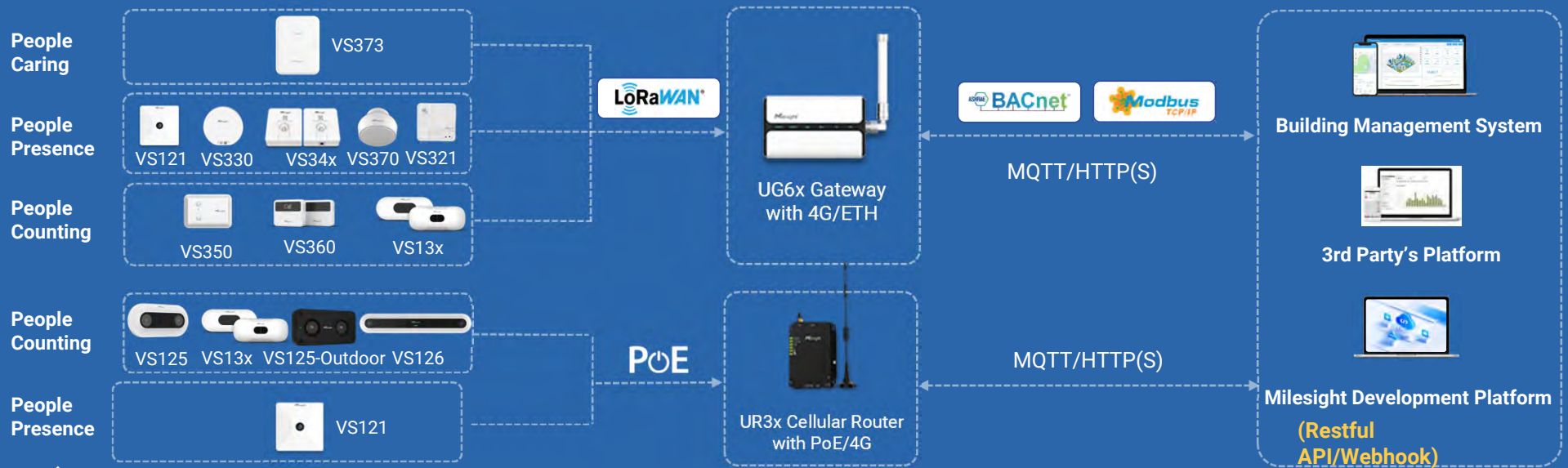


Desk & Seat Occupancy Sensor  
VS340/VS341



Presence Sensor  
VS370

# MILESIGHT PEOPLE SENSING SOLUTION TOPOLOGY



## Flexible Wireless Networks

- **Milesight LoRaWAN® Gateways** offer extensive coverage and its wireless protocol guarantees a reliable connection, no matter the size of network.
- **Milesight LTE PoE Router** provides power and stable network connectivity for **PoE-powered sensing devices** over a single network cable.

## Unified Field Communication Protocols

- LoRaWAN®
- BACnet IP
- Modbus TCP/IP
- MQTT/HTTP/HTTPS

## Seamless Integration with Different Platforms

- This flexible solution enables the seamless integration of LoRaWAN® devices into any existing BMS system or 3rd party system;
- Milesight provides open solutions (Restful API & Webhook) for flexible development of applications and make connections;

# PEOPLE COUNTING SERIES

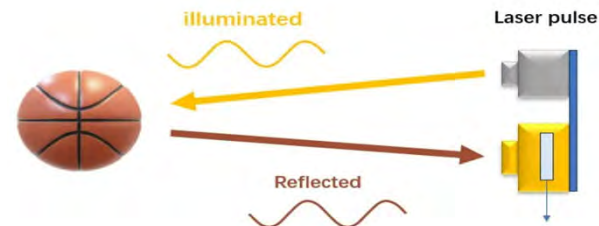
Milesight

01



## Time of Flight (ToF)

- Height information for object differentiation
- Highly precise measurements
- 3D depth information for **anonymous counting**
- **Model: VS133 VS135 VS330 (Cubicle Occupancy)**



### What's TOF Technology?

VS13x uses phase differences between sent and reflected sine waves to find an object's shape and height. The internal algorithm of VS13x identifies objects with one head and two shoulders as humans.

# PEOPLE COUNTING SERIES

Milesight

02

## AI RGB Vision Processing

- Camera vision sensor
- High accuracy and rich information
- Gender Recognition based on AI RGB
- **Model:VS125 series VS121 VS321**



depth map

RGB map

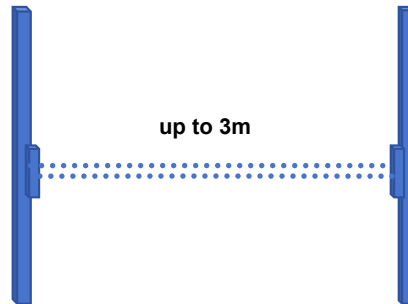
### RGB detection logic

The RGB people counting sensor uses vision combined with AI algorithms for people counting. Using depth maps and visible light (RGB) images to obtain final object detection.

Whats more, VS125 series is equipped with a **built-in infrared fill light**, enabling stable detection even at night or in low-light environments.

# PEOPLE FLOW TENDENCY

Milesight



VS360 has two infrared beams. By detecting which beam is interrupted, it determines the direction in which an object enters or exits.

## ➤ Infrared (Active IR Beam-break)

- Infrared rays between a transmitter and receiver
- Less reliable in rooms with high frequency
- Battery powered for simple installation
- Low cost and friendly to privacy
- **Model: VS360**



03



PIR detects motion by sensing changes in infrared radiation.  
VS360 Equipped with two PIR sensors, the device determines entry or exit direction based on which sensor is triggered first.

## ➤ Infrared (Passive Infrared)

- Bi-directional In/Out movement
- Body heat or movement detection
- Battery powered wire-free installation
- Anonymous detection
- **Model: VS350 VS34x (Seat Occupancy)**



04

# SPACE OCCUPANCY SERIES

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05



PIR detects motion, and the thermopile assists in identifying **stationary targets**, enhancing detection accuracy.

## Thermopile

- Thermopile array senses occupants' body heat
- Occupied and unoccupied status detection
- Less power consumption
- No privacy issues
- **Model: VS341 (Seat Occupancy)**



06



## Infrared ( Passive Infrared)

- Millimeter-wavelength
- Weather-resistant and long distance coverage
- Penetration capability
- Suitable for complex and crowded environments
- **Model: VS370 VS373**



Millimeter-wave radar emits signals that reflect off targets. The antenna receives these echoes, and the receiver processes them to determine the target's position and speed.

# VS125 AI STEREO VISION PEOPLE COUNTER

Milesight

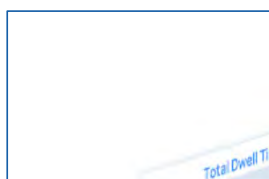
Milesight 3D Stereo Vision Dual-Lens (RGB) People Counting Sensor offers a counting accuracy of up to 99.8% and provides even more advanced attribute recognition capabilities. It delivers deep insights for retail, buildings, transportation, and various other spaces, aiding in operational decisions and enhancing efficiency and resource utilization.



(PoE / Cat1 Version)

## Features

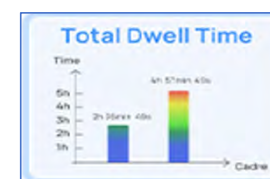
- ① Adapt to **Low-light (0 LUX) Environment**
- ② **High Accuracy: Up to 99.8%**
- ③ **Comprehensive Attribute Recognition**
- ④ **Installation Height: 2.2 m ~ 6m**
- ⑤ **Robust Counting Data Storage(1 Million) & Video Verification(about 2 Hours)**
- ⑥ **Milesight Development Platform & Milesight Devicehub Supported**
- ⑦ **View Direction Detection**



Regional People Counting



Line Crossing People Counting



Dwell Time Detection



Adults/Children Differentiation & Staff Detection



Gender Recognition



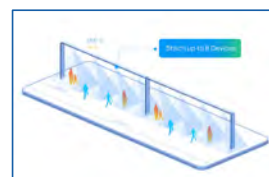
Staff Detection



Insightful Group Counting



Advanced Heat Map



Multi-device Stitching  
(Up to 16 devices)



Flexible Data Report  
(8 Receivers)



Scalability  
Open API/MQTT(s)/HTTP(s)/  
BACnet-coming soon) ...

# VS125 SERIES, THREE SCENARIOS

Milesight



VS125-LW

## AI Low-Mount & Wide-Area People Counter

- **Wider Coverage:** Up to 45m<sup>2</sup>
- **Lower Mounting High:** 1.9~3.5m
- **Scenarios:** retail store, building entrance/exit



VS125-O  
VS125-LW-O

## VS125 Series Outdoor Version

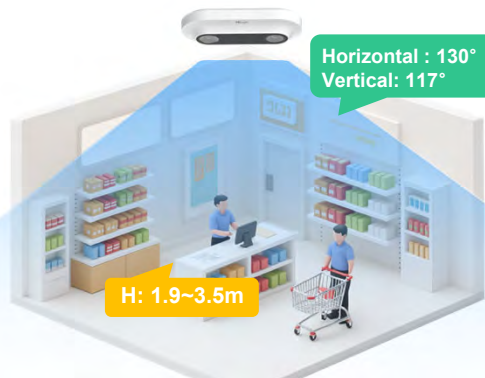
- **IP67 Rated Waterproof Performance**
- Outdoor Light Resistance
- Mounting High: 2.2~6m
- Operation Temperature: -20°C~65°C
- **Scenarios:** park, outdoor event entrance/exit



VS126

## AI Ultra High-Mount People Counter

- **Higher Mounting:** 6-15m
- Operation Temperature: -20°C ~ 60°C
- **Scenarios:** airports, large shopping centers, stadiums, and museums.



Note: VS12x series only have **PoE and 4G Cat.1** version

# VS13X AI TOF PEOPLE COUNTING SENSOR

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The next-gen people counting sensor uses AI algorithms for **up to 99.8% accurate** counting, while guaranteeing **100% anonymous detection** compliant with GDPR.



VS133



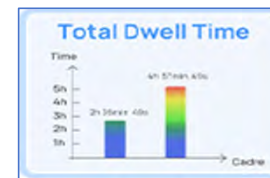
(PoE/ LoRaWAN®)



Regional People Counting



Line Crossing People Counting



Dwell Time Detection



Adults/Children Differentiation & Staff Detection



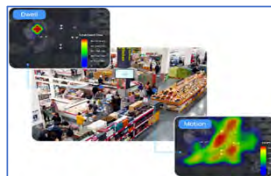
Insightful Group Counting



Shopping Cart Fill Level Detection & Counting



Tailgating Detection



Advanced Heat Map



Multi-device Stitching  
(Up to 8 for VS135-P,  
others will be 4)



Flexible Data Report  
(6 Receivers for VS133,  
8 for VS135)



Great Compatibility  
(Open API/MQTT/BACnet...)

VS135



PoE/ LoRaWAN®/  
4G / Wi-Fi HaLow Version

- More Communication version
- Better Heat Dissipation
- **Higher Ceiling Mount Version**  
(Up to 6.5m)
- **Built-in Radar & 3-Axis Sensor**  
(For Automatic ToF Lighting & Installation Height Correction)

# STAFF DETECTION FOR 3D AI STEREO PEOPLE COUNTER

In retail stores, staffs are excluded from customer counting in order to improve the accuracy of consumer data, which is important for calculating store conversion rates and KPI figures. Milesight offers a diverse selection of accessories at different price points for various scenarios—giving your team flexible and cost-effective options



Reflective stripes lanyard

90% accuracy



chest or shoulder badge

90% accuracy



Striped lanyard

90% accuracy



UWB tag and base station

99% accuracy

## 1、UWB Tag

- 1) Battery capacity: PENDING
- 2) Battery life: 3 days and supports wireless charging

## 2、UWB Charging Dock

- 1) Charging time: 3–5 hours  
(to charge the UWB tag from below 10% to above 90%)

## 3、UWB Base Station

Horizontal angle:  $\pm 60^\circ$

Vertical angle:  $\pm 60^\circ$

**Note: Reference Data and not the final data**



### VS350 Passage People Counter

- **Dual PIR**
- **People's flow tendency**
- **80% Accuracy** (multiple passages)
- **Battery 4 Years** (10-min Interval) \*
- **Ceiling or Wall** mounting



### VS360 IR Breakbeam People Counter

- **Active Infrared**
- For no ceiling or temperature fluctuating environments
- **Up to 90% Accuracy** (multiple passages)
- **Battery 3 Years** (10-min Interval)
- **Side** mounting

\* 25 °C, 1000 People per Day

2025 Dec.

Milesight

# VS361 Storefront Footfall Sensor

The VS361 is an Storefront Footfall Sensor designed for retail scenarios. Using diffuse reflective photoelectric technology, it captures foot traffic trends outside stores—helping businesses assess commercial value, optimize conversion rates, and fine-tune marketing strategies.



IP67



Metal Bracket

## Highlighted Features

### ① Storefront-Ready & Flexible Installation

- **IP67-rated** with wide temp range and anti-condensation, built for storefront outdoor use.
- Supports **side and bottom mounting** with a standard **metal bracket**.
- Multiple Power Supply Options: **PoE & DC**

### ② Accurate & Adaptable Detection

- Combines **IR technology** for **counting foot traffic** outside the store
- Strong anti-interference with sunlight suppression and **glass penetration** for indoor-to-outdoor detection
- Adjustable detection range: **2~6M**



# 03 SPACE OCCUPANCY SOLUTION

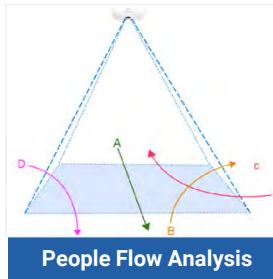
# Presence Sensor | VS121 for Workplace

LoRaWAN PoE D2D



The ceiling-mounted VS121 uses advanced RGB vision imaging to monitor occupancy and count people, making it a cost-effective solution for large open-plan offices.

## Features



- **Type-C (LoRaWNA®) or PoE versions**
- Maximum **16** Detection Regions
- Up to 98% High Accuracy
- Large detection area: 2.3-7m Height
- 100% Anonymous Detection (Compliant with GDPR)

## Seamless Integration

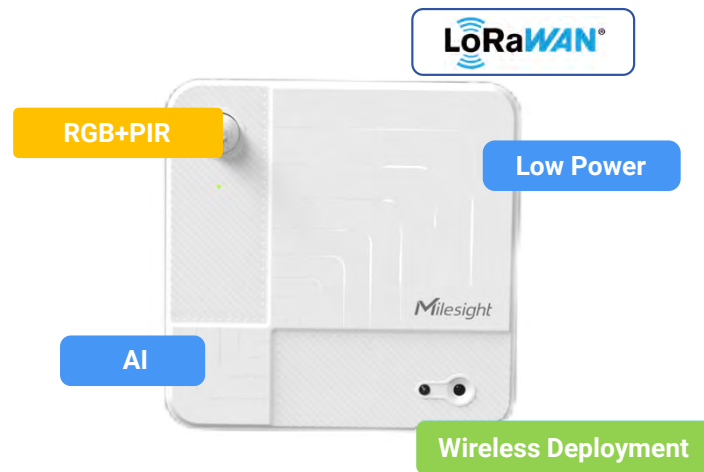


# Presence Sensor | VS321 AI Occupancy Sensor

Milesight

## Product Proposition

A low-power AI algorithm workplace occupancy sensor focusing on room intelligence in buildings with an accuracy rate of up to 95%.



## Highlighted Features

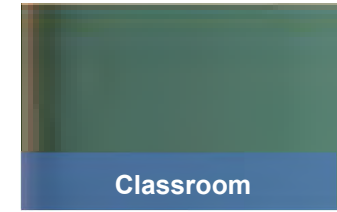
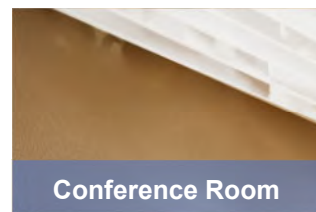
### ① High Adaptability to Occupancy Detection Applications

- Combine **RGB and PIR** sensor for **regional people counting**
- With an additional **light sensor** help with detecting the brightness, it can do the fast connection easily
- Highly adapt to workspace occupancy detection
- Fast deployment with Ceiling mounting, suspended ceiling mounting, snap-in installation
- Free of privacy concerns for user-friendly applications
- Built-in **Temperature & humidity sensor** ensures proper operation

### ② Low Power consumption

- Battery version lasts up to **2 years**

## Applications



# Presence Sensor | VS370 for big Meeting Rooms



- **3-in-1 Sensor**  
**24 GHz Radar & PIR** sensors  
**Light** sensor for brightness
- **Easy Installation**  
**Magnetic** ceiling mounted  
**Battery-powered** up to 5 years

- **Wide Coverage & High Accuracy**  
 3~4m radius, 2.8~2.9m height  
 Up to **99% accuracy**
- **Subtle Movements Detection**  
 Human Presence, Micro-motion &  
 Human Motion detection

## Lighting Control



## Preferential Applications

- Space for large confined spaces eg. Meeting rooms
- Space requiring privacy protection
- eg. meeting rooms in hotels and governmental department
- Space requiring convenient interaction combining with lighting or HVAC systems eg. meeting rooms



# Presence Sensor | Special Occupancy



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## Desk and Seat Occupancy Sensor VS34x

01

### Typical Application



- Under desks or seats



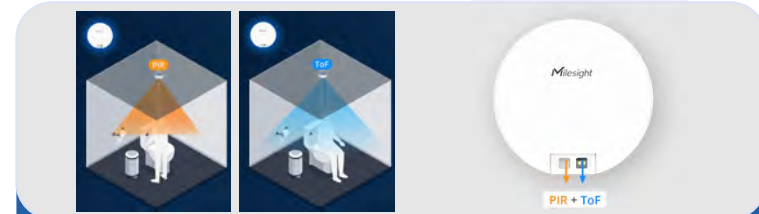
### Optimize Seat Utilization for Activity-based Environments

- **Field of View Adjustment** by **Hood Covering**
- Ultra-low Latency
- Effectively report occupancy status in real-time (13s)
- Up to 98% Detection Accuracy
- Long Battery Lifetime (> 3 years)
- 100% Anonymous Detection
- Milesight D2D Communication

## Cubicle Occupancy Sensor VS330

02

### Typical Application



- Restrooms Cubicles

### Know when to restock and clean for Customer Satisfaction

- Over **99%** accuracy based on **ToF and PIR** detection
- 100% anonymous and GDPR-compliant
- Real-time update and **ultra-low power consumption (4 years battery)**
- Effective in both static and motion applications with a low error rate
- Reliable performance in **low-light or completely dark** environments
- **Damp-proof coating** for operation in various toilet conditions
- **Adjustable sensor angle** for versatile mounting options

# VS373 RADAR FALL DETECTOR



Nursing Homes

Hospital Wards

Home Care

Public/ Accessible Restrooms



Milesight intelligent fall detector using **4D millimeter-wave radar** technology.

110 × 82 × 15 mm



- ü 60Ghz Radar & 24/7 Monitoring
- ü 99% Fall Detection Accuracy
- ü Non-contact & 100% Privacy Protection
- ü Milesight D2D Supported
- ü IP65 Waterproof

## Fall Detection

Monitor single person fall situation instantly and trigger help to promote “golden rescue time”

PS: Also suitable for multi-person scenarios with stationary or minimally moving companions.



Confirmation



Local Alert



Local&Remote Alert

## Room Occupancy Detection

Monitor space occupancy status and dwell time for smart services.



## Motionless & Over Stay Detection

Monitor if individuals with mobility issues remain in the same position for an extended period.



## Bed Presence Detection

Monitor unexpected bed exits, preventing falls and ensuring quick assistance

Single / Multi-bed



## Breathing Detection



Monitor the breathing rate of a person lying flat, providing reference data on variations. Threshold-based alerts can be set for unusually fast or slow breathing.



# 02

## MILSIGHT SUCCESS STORY

# COLLECTION OF SMART RETAIL STORE CASES

SUCCESS STORIES



- People Counting Analytics
- Conversion Rate Analytics
- Queue Management
- Heat Map Analytics

Covering OVER **500+** Retail Stores in Europe  
**1000** People Counting Sensors Improve Business Operations



[www.milesight.com](http://www.milesight.com)

# SUCCESS STORY- LA CASA DE LAS CARCASAS

Milesight

Location: Spain

Customer: A mobile accessories company with over 1300 stores

Partner & Analytics Software: TG Group Solutions

Products: VS133-PoE & VS135-PoE with High Ceiling Mounting, UR32L-L04EU-P cellular router



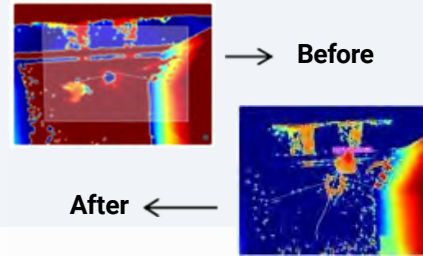
## Challenges

- Limited space and installation options
- Glare from lamps affects accuracy



## Tasks

- Replace **1,500 units in 2 years**, maintaining **95%** counting accuracy
- **Upgrade counting devices** without changing network infrastructure
- **Wireless data transmission via 4G**, ensuring no data loss



## Solution

- **Optimized AI & Grayscale Image recognition: 97% accuracy**
- VS135 high ceiling mount: narrow FOV, **less affected by obstacles**
- UR32 router: PoE and SIM slot for wireless setup



## Benefits

- Eco-friendly counters, easier installation
- **More accurate data for better decisions**
- **One-stop hardware purchasing** for better compatibility and faster support

# SUCCESS STORY- VODAFONE

**Location** Spain      **Customer** Vodafone, HappyCasa , Mas movil

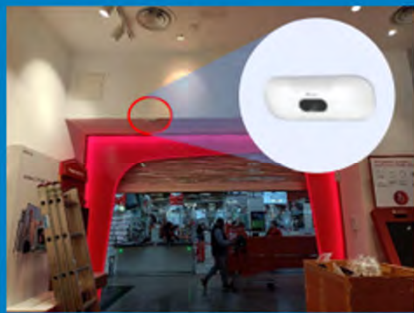
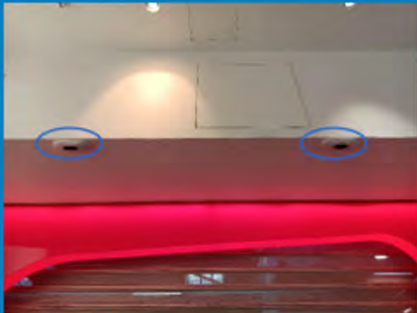
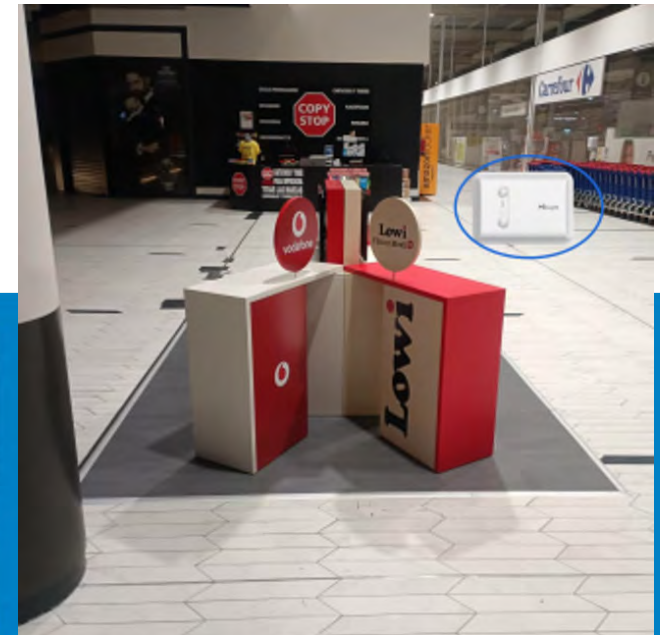
## Background & Challenge

- Vodafone has installed more than 3000 units of people counters in Europe;
- In some open counter aisles, over-head mounting installation is not possible;
- Battery-powered people counters are preferred in those open areas;

**Solution & Product** Proof of Concept (POC) for **VS350** is currently in progress

## Results

- Footfall counting in **open counter aisles for side or wall installation**
- Customer trend and dwell time tracking
- Sales conversion rate data & employee performance evaluation



# People Counting in Retail Stores



## Location

Barcelona, Spain & Europe



**Milesight Partner**  
TC GROUP



## Background & Challenge

- Limited space and restricted installation positions;
- Inability to ensure an obstacle-free zone around the sensor;
- Inaccuracy caused by a glare from lamp tubes;

## Solutions & Products

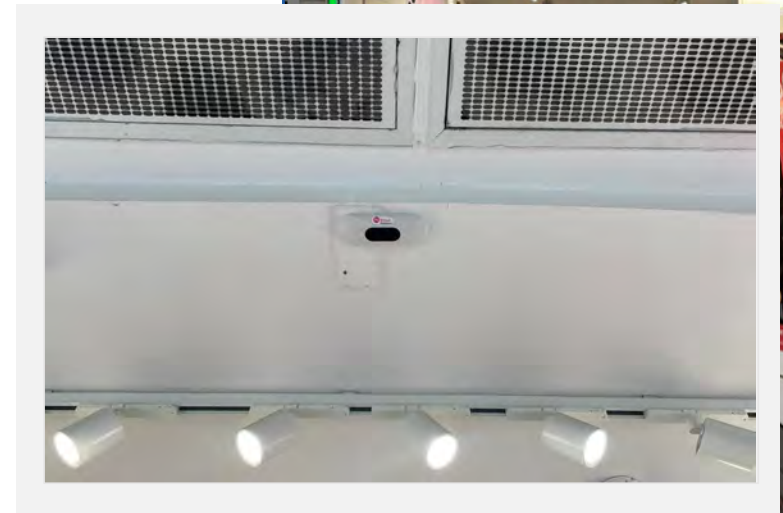


- **650\* VS133 PoE & VS135-PoE with High Ceiling Mounting**
- **UR32L-L04EU-P Cellular Router with PoE**
- Optimized AI & Grayscale Image Recognition Algorithms
- **PoE of UR32 router provides stable power supply and data collection and 4G LTE cellular for wireless data transmission;**

## Benefits



- Higher counting accuracy data contributes to better decision-making.
- Milesight's one-stop hardware purchasing ensures enhanced compatibility and expedited technical services;



# People Presence Detection in University Classroom



## Location

Nijmegen, Netherland



Milesight Partner  
SWYCS



## Background & Challenge

Students from the University complained about a lack of space, but in reality more than enough study and workspaces already existed, Occupancy-related information is a key parameter in energy system operation.



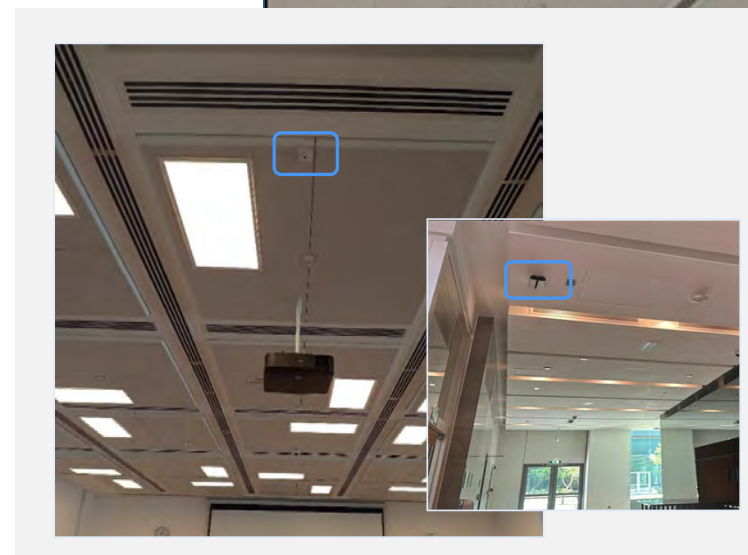
## Solutions & Products

- 100 pcs of VS121 AI Workplace Sensor, 50 pcs of AM103 Air Quality
- 10 units of UG65 & 4 units of UG67 LoRaWAN® Gateway
- The deployed system monitor **the occupancy of the space** and control the operation of the area as per the feedback received from the CO<sub>2</sub>, temperature & humidity (AM103) sensors.
- The UG6x gateway gives the occupancy, temepature, humidity and CO<sub>2</sub> to BMS system as BACnet points;



## Benefits

- Boost the sustainability
- Net zero contribution
- Improved Indoor Air Quality
- Reducing Carbon Footprint



# People Counting in Libraries



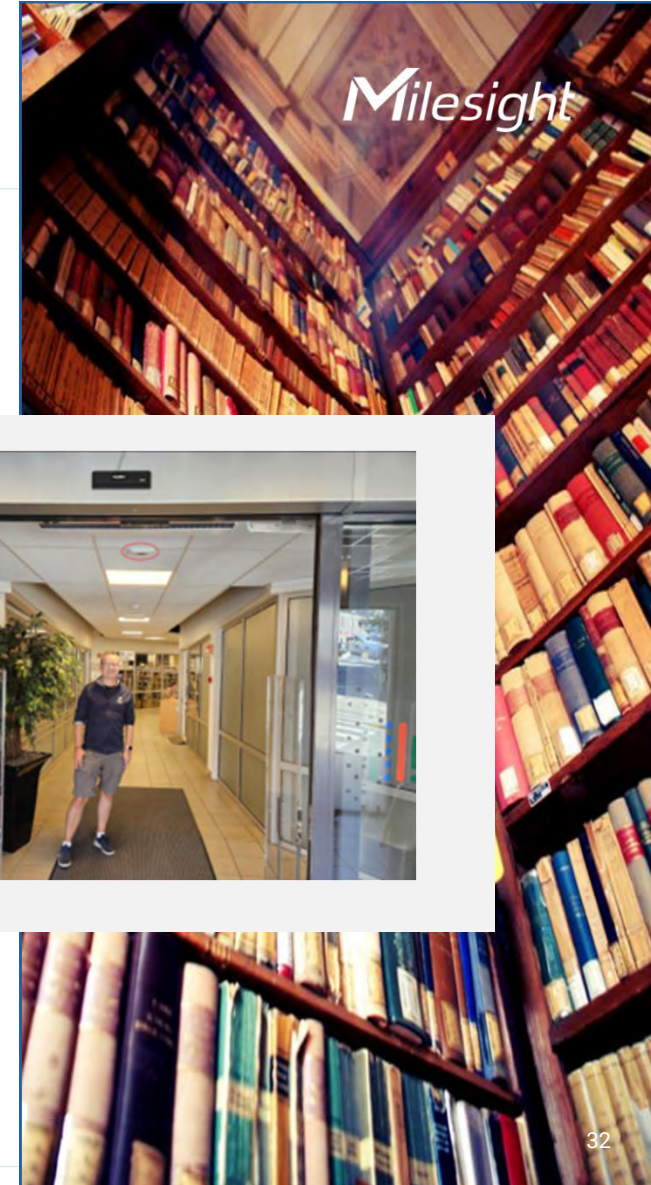
## Location

- Larvik Bibliotek, Norway



## Milesight Partner

Emcom AS



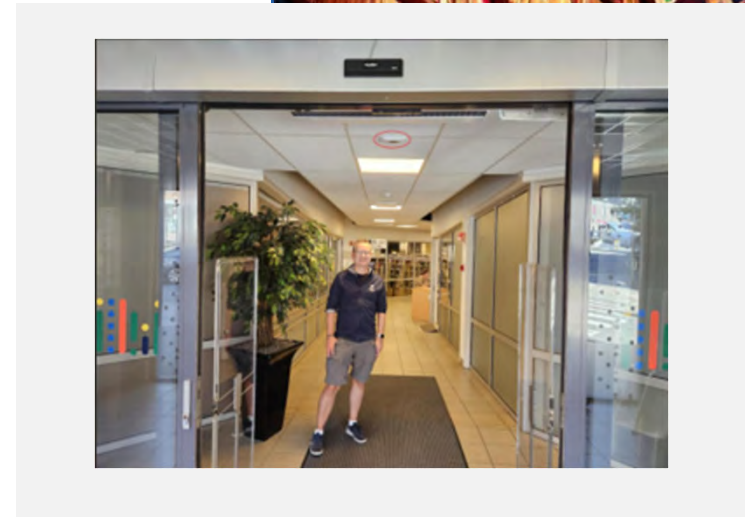
## Background & Challenge

- Accurate visitor counting with safety
- Annual visitor reporting required by the National Library



## Solutions & Products

- VS133 PoE sensors with ToF and AI technology
- Seamless integration with library systems



## Benefits

- Reliable, accurate visitor data: **Avoids double-counting and distinguishes different groups**
- Secure, efficient reporting
- Supports service improvement and compliance

# People Counting in Tourist Information



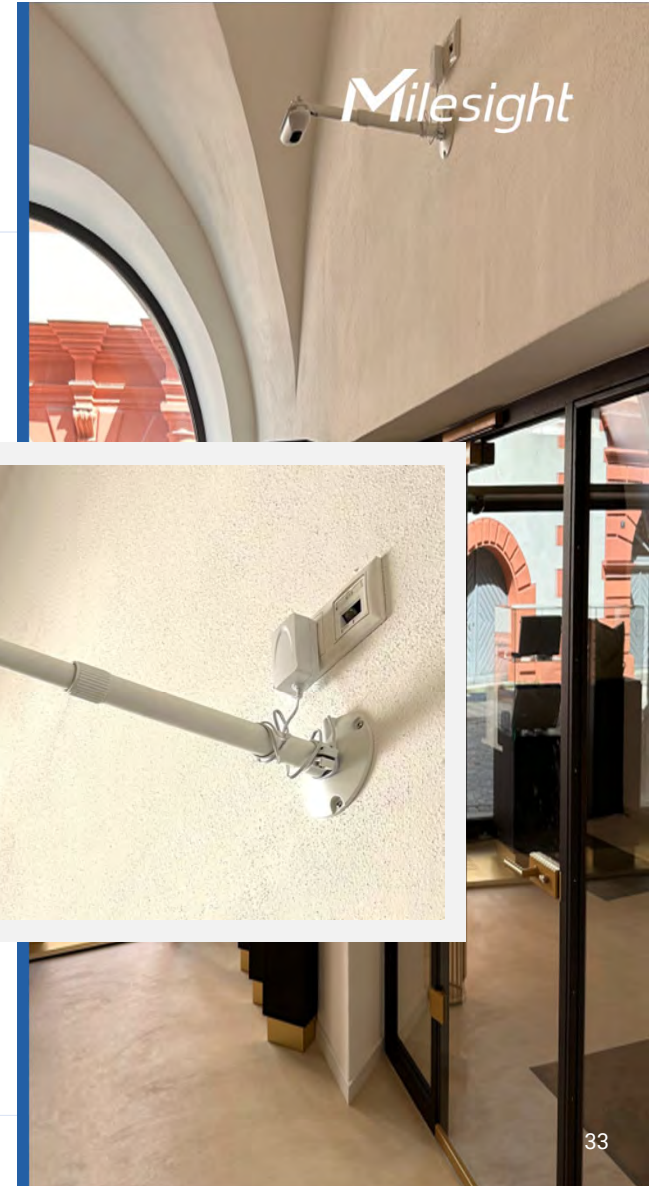
## Location

Coburg, Germany



## Milesight Partner

süc//dacor



## Background & Challenge

The city's tourist information center is located in a historic building and housed in an old vaulted structure. The visitor frequency is to be recorded in order to determine peak occupancy times.



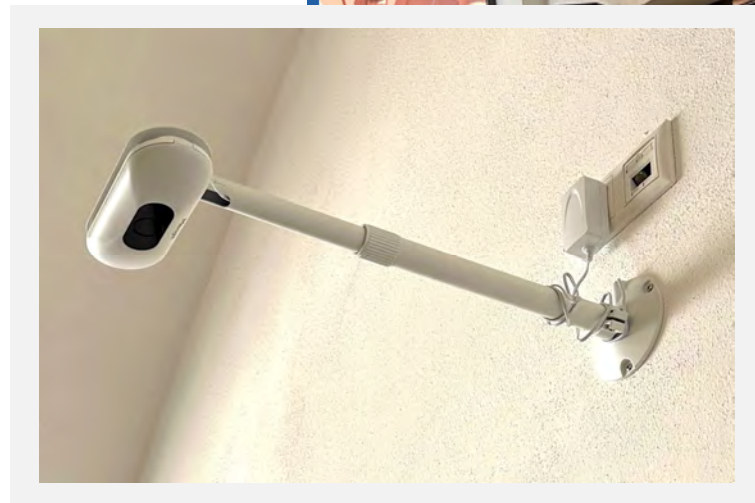
## Solutions & Products

The elegant VS133 with its **matching bracket** fits harmoniously into the overall picture of the room. The measured data is displayed in real time on an online dashboard, and the daily values are summed for monthly reports.



## Benefits

The administration receives reliable data on the number of visitors and can prove the performance of the tourist information center with these objective figures.



# People Presence Detection in Smart Offices



## Location

Oeste Digital, Spain



## Milesight Partner

Nespra



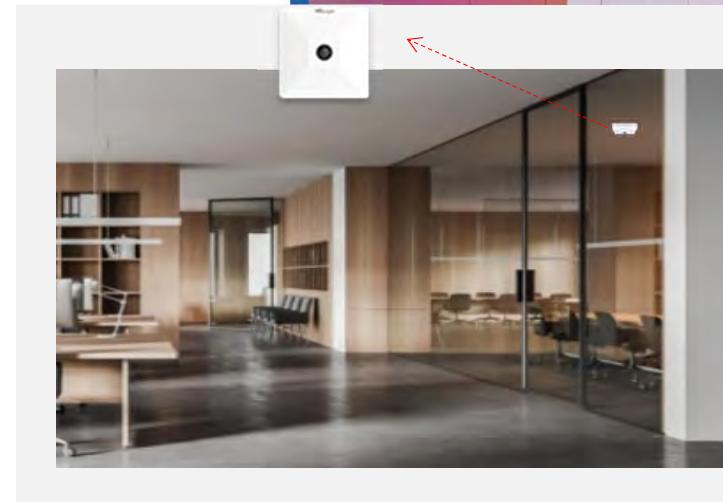
## Background & Challenge

Without a system to count or detect people presence in offices, estimating worker demand and creating an adequate work environment is challenging.

## Solutions & Products

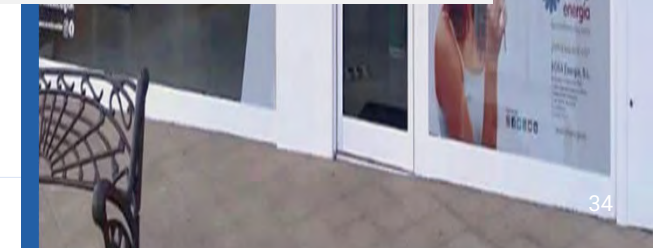


- Milesight sensors are capable of measuring temperature, humidity, noise, luminosity and counting people passing through the offices are implemented.
- VS121 LoRaWAN provides real-time data to improve workspaces and customer service resources
- The Nescloud platform from Nespra allows them to have efficient control of the metrics.



## Benefits

Better experience and effective environmental monitoring guaranteed



*Milesight*

**THANKS FOR WATCHING**



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