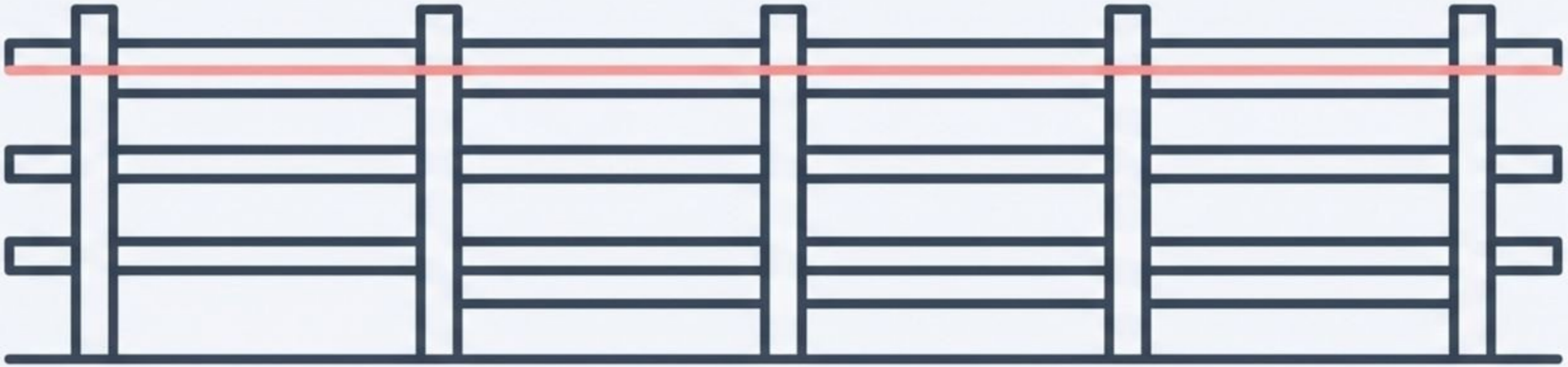
Climbing Detection



2026/03/02

Overview

AI-Based Perimeter Protection

Definition

An advanced AI feature designed to detect unauthorized attempts to cross walls or fences specifically via climbing.

Core Logic

Unlike standard motion detection, this system analyzes vertical movement across a horizontal threshold.

The Goal

To recognize and alert on intrusion attempts at the perimeter before the subject enters the secure zone.

Features

Object Tracking

The AI actively identifies and tracks the person's head and shoulders.

Tripwire Configuration

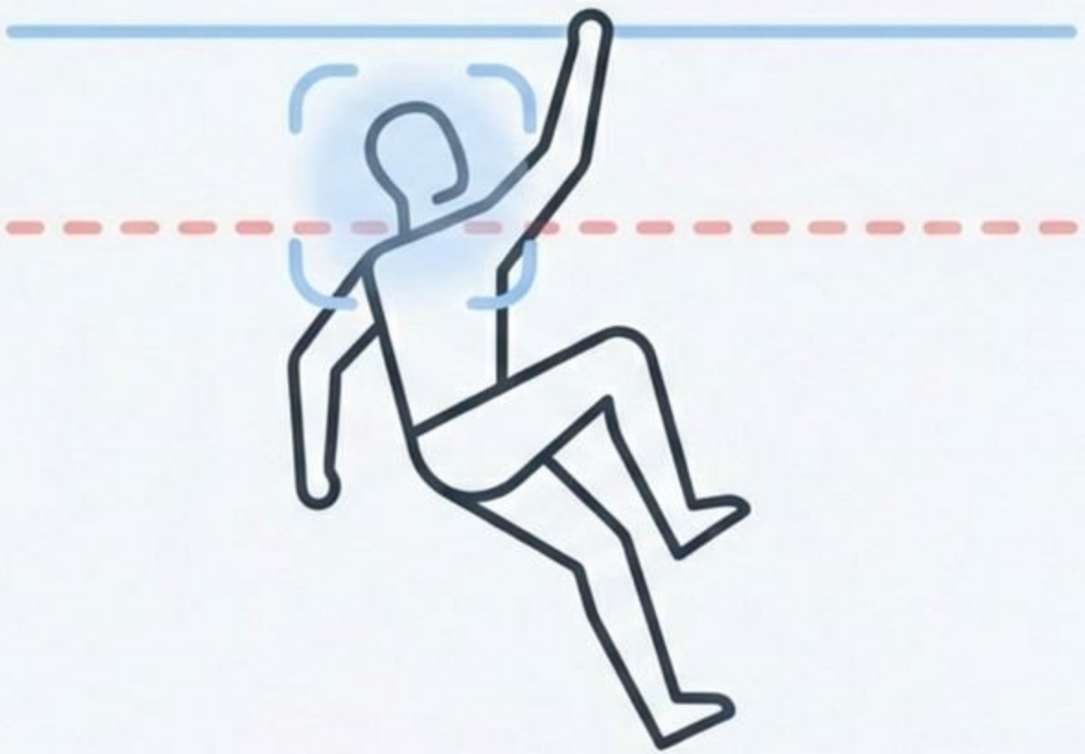
System uses a virtual tripwire drawn horizontally at the top of a fence or barrier wall.

Trigger Event

The security alarm is triggered specifically when the whole body has crossed the horizontal tripwire.

False Alarm Reduction

The line is positioned high enough so that normally walking or standing people do not interfere with the detection zone.



Architectures

Flexible Deployment Options

Option 1: Edge-Based AI

Uses ACTi Climbing Detection Cameras.

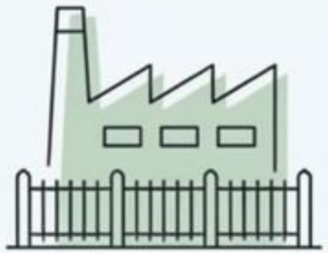
Processing happens on the camera; alerts sent to VMS.

Option 2: Server-Based AI

Uses latest ACTi ZNR-series NVRs.

Enables climbing detection on regular surveillance cameras (non-AI) via server-side processing.

Applications



Perimeter Security

Preventing intrusions into enclosed areas such as schools, factories, and sensitive industrial zones.

Building Facade Protection

Prevents window intrusion by setting the tripwire approximately 2 meters from the ground on building exteriors.

Safety Monitoring

Monitoring recreational climbing spots or unsecure locations to prevent accidents and injuries.

Solutions

VMS Integration & Event Management

Platform Compatibility

- Fully compatible with ACTi ZNR-series NVRs and Windows-based NVR 3 servers.

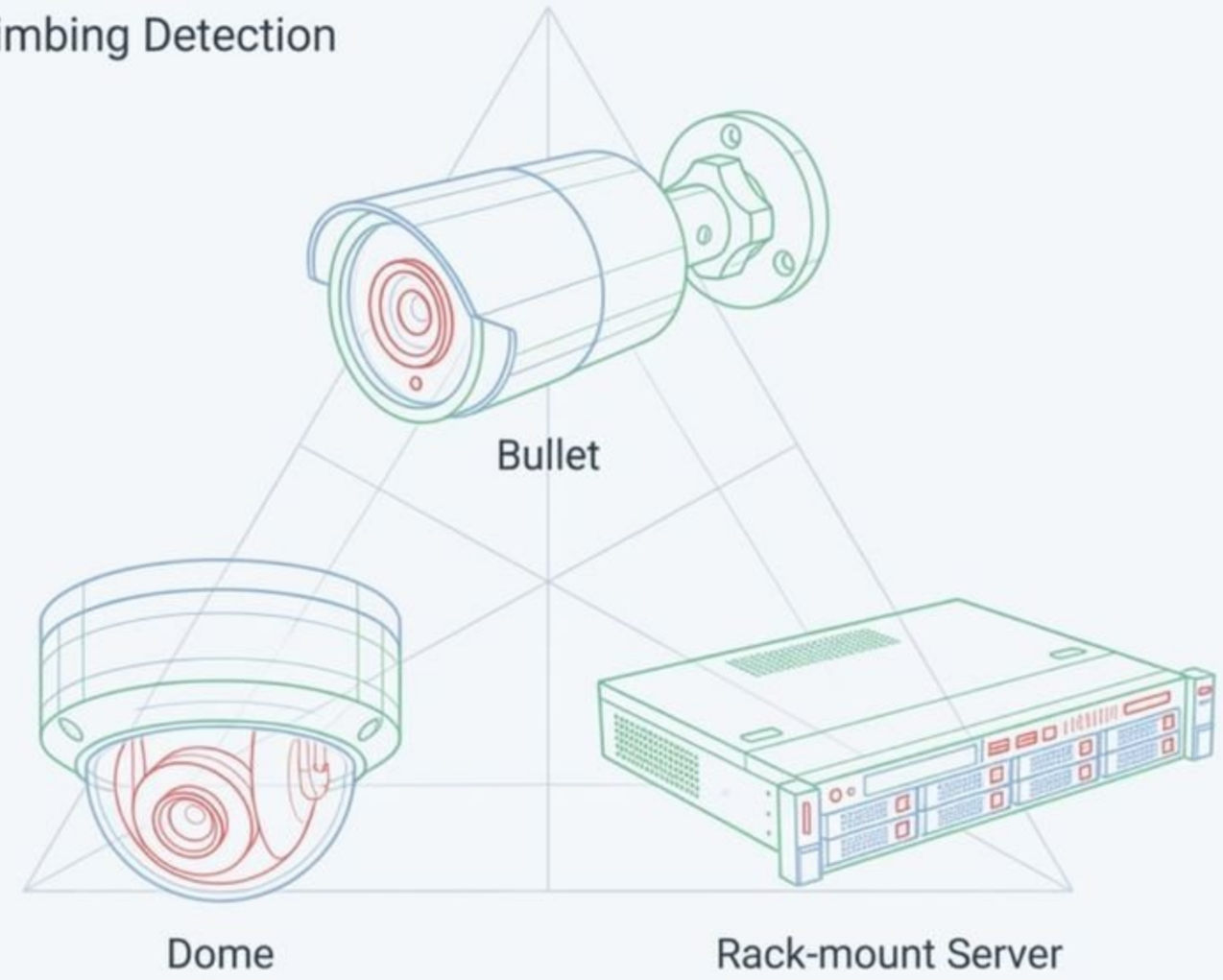
Event Handling

The VMS receives alerts and triggers immediate actions:

- Video Pop-up
- Sound Alert
- Email Notification

Product Introduction

Hardware Ecosystem for Climbing Detection



Product Matrix

Group 1

Product Type: NVR / Server

Model: ZNR-224
Key Capability: Built-in Climbing Detection capability (Server-side AI). Allows use with regular non-AI cameras.

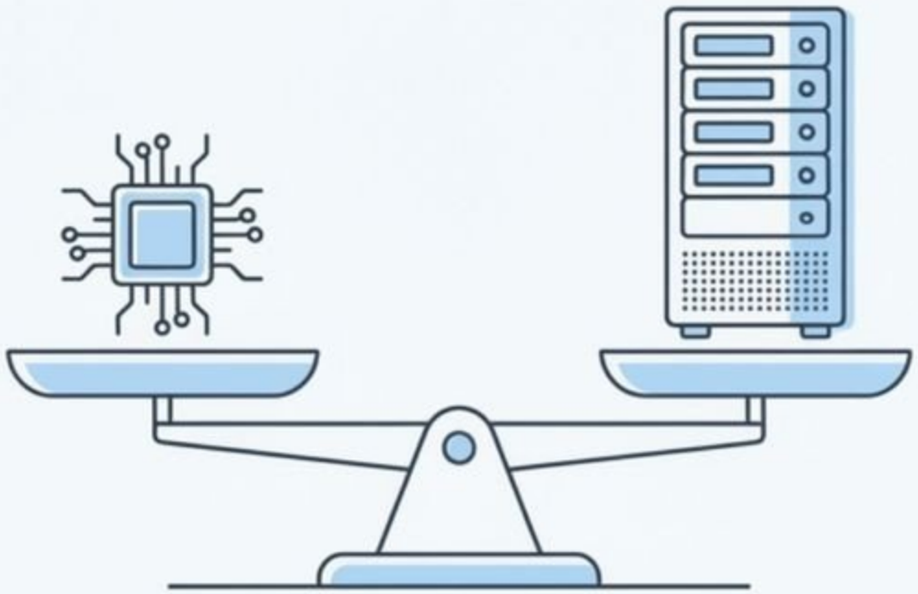
Group 2

Product Type: AI Cameras

Model: ACTi Climbing Detection Series
Key Capability: Edge-based AI processing for direct detection.

Comparison

Edge AI vs. NVR-Based AI



Edge AI (Camera-Based)

- **Best For:** New installations requiring distributed processing.
- **Requirement:** Specialized Climbing Detection Cameras.

NVR AI (Server-Based - ZNR-224)

- **Best For:** Retrofitting existing sites.
- **Benefit:** Adds AI intelligence to standard, non-AI surveillance cameras.

Summary

Precision: Utilizes 'Head and Shoulders' tracking and 'Whole Body Crossing' logic to minimize false alarms.

Versatility: Effective for perimeter fences, building facades (window protection), and safety monitoring.

Flexibility: Deployable via specialized AI cameras OR via ZNR-series NVRs with standard cameras.

Integration: Seamless event management (Pop-up, Sound, Email) via NVR 3 and ZNR platforms.

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