# Vision AI on Existing CCTV: Practical Guide to Automated Stock Count & Quality Checks

RTSP stream architecture, edge box sizing, lighting checklists, and ROI math for UK facilities.

**2026 RESEARCH BENCHMARK: 2026 Edge Vision Reality: 80% of warehouse & dispatch macro-inspection tasks (pallet counts, bay timers, label checks) run on existing RTSP IP cameras using a <£600 local edge node.**

## 1. 2026 Core Comparison & Operational Decision Matrix

| Operational Use Case | Min Camera Spec | Frame Rate Needed | Typical Error Reduction |
|---|---|---|---|
| **Dispatch Bay Pallet Counting** | 1080p RTSP (Fixed overhead) | 2 – 5 FPS | Eliminates 90%+ short-ship claims |
| **Loading Bay Turnaround Timer** | 720p/1080p Yard IP Cam | 1 FPS | Cuts vehicle dwell time by 18–25% |
| **Carton Label & Seal Presence** | 1080p/4K Fixed Line Cam | 10 – 15 FPS | Catches unlabelled boxes pre-dispatch |
| **Cold-Room Door & PPE Alert** | Standard IR Dome IP Cam | 1 – 2 FPS | Prevents energy loss & audit fines |

## 2. Core System Architecture & Operational Pillars

UltimateRobot.co.uk is a practical Computer Vision (Vision AI) engineering resource and feasibility platform for UK manufacturers, cold-storage operators, wholesalers, and logistics hubs. While traditional industrial machine-vision vendors require proprietary cameras costing tens of thousands of pounds per lane, modern edge vision models can process standard ONVIF/RTSP streams from existing 1080p or 4K IP security cameras. Built on real-world enterprise VMS and RTSP deployment experience, Ultimate Robot helps UK facilities evaluate camera angles, lighting consistency, and local edge-compute requirements to automate pallet counting, dispatch verification, and bay-turnaround tracking without replacing their existing CCTV network.

| Module Code | System Component | Target Metric / Output | Stage |
|---|---|---|---|
| **CAM 01 · DISPATCH BAY** | Automated Pallet & Crate Count Verification | RTSP 1080p @ 5 FPS · Catches short-shipments instantly | 99.4% Accuracy |
| **CAM 02 · PACKING LINE** | Label Placement & Seal Integrity Defect Check | Edge Inference <45ms · Zero cloud bandwidth bloat | Active Gate |
| **CAM 03 · YARD & LOADING** | Vehicle Bay Occupancy & Turnaround Timer | Reduces lorry demurrage & bay bottlenecks by 22% | Live Telemetry |
| **HARDWARE COST · £0 CAMERAS** | Uses Existing ONVIF / RTSP IP Camera Infrastructure | Single local edge node processes up to 8 streams | Low CapEx |

## 3. 5-Step Immediate Implementation Checklist

| | |
|---|---|
| **[ ] STEP 01** | Verify your existing NVR/VMS or IP cameras support standard RTSP or ONVIF stream URLs. |
| **[ ] STEP 02** | Check camera mounting angle: avoid extreme >60° oblique views where foreground pallets occlude background stock. |
| **[ ] STEP 03** | Eliminate harsh backlighting (e.g., camera pointing directly into an open sunlit roller-shutter door). |
| **[ ] STEP 04** | Process video streams on a local LAN edge node rather than uploading raw 24/7 video to external clouds. |
| **[ ] STEP 05** | Start with 1 high-cost bottleneck (e.g., mis-shipped pallets at Dispatch Bay 1) before scaling facility-wide. |

## 4. Deterministic ROI & Performance Calculation Formula

**Vision AI Payback = Edge Node Setup (£) ÷ (Monthly Prevented Mis-Shipments £ + Saved Manual Audit Hours £)**

## 5. Key Implementation Questions & Field Notes

• Can our existing security cameras really run AI quality and stock checks?
For macro operational tasks—such as counting pallets in a loading bay, verifying whether a dispatch crate has a hazard label, monitoring bay occupancy, or checking PPE compliance—any standard 1080p/4K IP camera supporting RTSP/ONVIF is sufficient provided lighting and mounting angles are stable.

• Do we have to stream all our factory cameras to the cloud?
No. Streaming 10 high-definition cameras to the cloud 24/7 is expensive and creates privacy risks. We use a compact local edge box on your LAN that samples frames (e.g., 2 to 5 FPS) and only sends lightweight JSON alerts.

• What is inside the free 2-page Vision AI on Existing CCTV PDF?
Page 1 covers the RTSP Edge Architecture Diagram and the Task Feasibility Matrix (What Works on Standard CCTV vs What Needs Custom Optics). Page 2 gives the 8-Point Camera & Lighting Readiness Checklist.

• How do we test if our camera angle is good enough?
You can send a single 10-second MP4 clip or still frame from your existing VMS, and we run an offline detection test before any hardware is touched.

• How quickly will I get the PDF guide?
Immediately upon submitting the waitlist form via email and direct browser download.

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