RIODATOS

AI PEDESTRIAN DETECTION SYSTEM

BUYER'S GUIDE

An evaluation framework for EHS, Operations, IT, Finance, Legal, Engineering, and Procurement teams.

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EXECUTIVE SUMMARY

INTRODUCTION

Pedestrian collisions remain one of the most underreported yet preventable safety risks in industrial operations. While near misses often go unnoticed, the consequences of a single incident can be severe, both human and financial.

AI pedestrian detection systems have become a critical safety layer in environments where vehicles and people work side by side. But unlike traditional safety tools or infrastructure-heavy solutions, these systems require thoughtful evaluation based on real operating conditions and not vendor demos or staged pilots.

This ***AI Pedestrian Detection Systems Buyer's Guide*** was created for cross-functional teams tasked with improving safety outcomes responsibly. It's a neutral, role-based resource for understanding how these systems work, how they're validated, and what to expect during evaluation.

WHY PEDESTRIAN DETECTION IS NO LONGER A "SAFETY UPGRADE"

Every industrial facility with forklift traffic has experienced near misses, most of which are undocumented. These aren't random events. They happen in blind corners, narrow aisles, and congested docks. Relying on signage or training alone isn't enough.

AI pedestrian detection systems offer a measurable improvement over traditional methods by using vehicle-mounted vision and edge processing to detect pedestrians in real time. These systems alert operators directly in the cab without requiring pedestrians to wear tags or carry devices.

Executive Summary (cont'd)

WHO THIS BUYER'S GUIDE IS FOR?

Pedestrian collisions remain one of the most underreported yet preventable safety risks in industrial operations. Near misses happen every day in blind corners, narrow aisles, congested docks, and shared work zones. They are rarely documented until a serious injury, fatality, or event forces attention. When incidents do occur, the consequences extend beyond the moment itself, carrying long-term human, operational, financial, and legal impact.

AI pedestrian detection systems have emerged as a critical safety layer in environments where vehicles and people work in close proximity. However, not all pedestrian detection systems are equal, and their effectiveness depends heavily on how and where they are evaluated. The ***AI Pedestrian Detection Systems Buyer's Guide*** was created to support cross-functional teams tasked with improving safety outcomes responsibly.

RELEVANCE BY DEPARTMENT

1. **Plant Managers -** implementing safety quickly and easily in the fleet.
2. **Operations Managers -** protecting throughput and uptime
3. **IT / Network Team -** assessing cybersecurity and system architecture
4. **Legal Department -** reviewing AI policy, liability, and contract risk
5. **Procurement Group -** sourcing scalable, predictable systems
6. **Finance Department -** validating ROI, loss prevention and insurance
7. **Engineering Teams -** managing installation and maintenance
8. **EHS / Safety Groups -** recommending AI safety technology

1. PLANT MANAGER

Risk Without Disruption

Primary Objective:

Reduce forklift-pedestrian collision risk without changing day-to-day operations.

- ☐ Installs easily with minimal equipment downtime
- ☐ Operates independently of facility computer networks
- ☐ Encourages safer driver and pedestrian behavior
- ☐ Scales across mixed vehicle types, makes and models
- ☐ Supports the company's safety policy and procedures

2. OPERATIONS MANAGER

Safety Without Workflow Changes

Primary Objective:

Improve safety while maintaining throughput and workflow consistency.

- ☐ No employee retraining or operational redesign required
- ☐ Alerts on pedestrians without overwhelming false alarms
- ☐ High equipment operator acceptance from day one
- ☐ Effective in busy aisles, loading docks, and intersections
- ☐ Compatible with all vehicle types and easy maintenance

3. IT / NETWORK TEAM

Cybersecurity and Compatibility

Primary Objective:

Ensure safety systems do not introduce new attack surfaces or network load.

- ☐ Fully offline, with on-vehicle edge AI processing
- ☐ No Wi-Fi, LAN, or cloud connection required
- ☐ No data leaves the vehicle — nothing to transmit or store
- ☐ Does not interface with corporate systems
- ☐ No IT infrastructure changes needed

4. LEGAL DEPARTMENT

AI Policy, Liability & Contractual Risk

Primary Objective:

Ensure systems align with corporate AI policy, allocate liability appropriately, and do not introduce unintended legal or contractual exposure.

- ☐ Aligns with internal AI governance and acceptable-use policies
- ☐ Does not create data ownership, privacy, or surveillance concerns
- ☐ Avoids collection, storage, or transmission of personal data
- ☐ Clearly defines responsibility and limitations in supplier agreements
- ☐ Supports defensible safety decisions in the event of incidents or audits

5. PROCUREMENT GROUP

Scalable and Predictable Systems

Primary Objective:

Select a solution that can scale consistently without hidden costs.

- ☐ All-inclusive pricing — no subscriptions or licensing
- ☐ In-stock hardware with predictable lead times
- ☐ No long-term contracts or service agreements
- ☐ Compatible with all major forklift brands
- ☐ Multi-year warranty included

6. FINANCE DEPARTMENT

Measurable ROI and Loss Prevention

Primary Objective:

Justify capital investment based on incident reduction and cost avoidance.

- ☐ Typical forklift injury: $42,000+
- ☐ Lost-time incident: $188,000+
- ☐ Pedestrian fatality: $500,000 to $3,000,000+
- ☐ One detection event can prevent a catastrophic loss
- ☐ Predictable capital model with clear ROI across fleets

7. ENGINEERING TEAMS

Installation & Deployment Simplicity

Primary Objective:

Ensure systems can be installed, replicated, and maintained without specialized labor, vehicle modification, or operational downtime.

- ☐ Mounts to machines using standard brackets and harnesses
- ☐ Connects to accessory power with no wiring into vehicle control systems
- ☐ Requires no changes to vehicle configuration or certifications
- ☐ Compatible across multiple equipment brands and vehicle types

8. EHS / SAFETY GROUPS

Pedestrian Collision Risk Reduction

Primary Objective:

Reduce pedestrian strike risk while supporting compliance, defensibility, and continuous safety improvement.

- ☐ Detects pedestrians in real lighting, traffic, and workflow conditions
- ☐ Alerts encourage proactive, situationally aware operator behavior
- ☐ Supports near-miss awareness and risk identification
- ☐ Provides a defensible safety control review

TESTING PROCESS

BUYER'S PROGRESS

- Test real conditions
- Confirm driver adoption
- Test alert reliability
- Reduce deployment risk
- Validation units
- On-site programs
- Prove and Scale
- Global installation
- Continued training
- Warranty support

AI Pedestrian Detection Systems Buyer's Guide

Forklift-pedestrian collisions still happen far too often. Many facilities don't report near misses until a serious injury or fatality occurs. AI pedestrian detection systems can significantly reduce these incidents, but they must be validated in your conditions, not in rehearsed demonstration.

This buyer's guide provides an evaluation framework for EHS, Operations, IT, Finance, Legal, Engineering, and Procurement teams.

- Neutral, role-based evaluation framework by stakeholder
- Built for internal alignment and responsible decision-making
- Highlights what matters: install time, cybersecurity, scalability, and ROI
- Supports one machine or facility validation before scaling

Riodatos works directly with EHS and operations teams to evaluate, validate, and deploy pedestrian detection technology under real operating conditions.

NEXT STEPS

1 **CONFIRM VALIDATION PROJECT SCOPE**
Finalize the pilot site selection, equipment quantities and installation plan. Confirm the number of machines, preferred alert interface and any site-specific requirements.

2 **APPROVE PROJECT PROPOSAL & ISSUE PO**
Upon agreement on scope and pricing, the customer issues a purchase order for pilot units. This initiates vendor setup, shipment scheduling and installation planning.

3 **SYSTEM INSTALLATION & EVALUATION**
Coordinate delivery and support installation at the pilot facility. The site evaluates the system under real conditions to validate deployment, performance and acceptance.

4 **PROJECT REVIEW & FACILITY COMPLETION**
After successful testing, the pilot site is fully equipped. Any fine-tuning or configuration adjustments are completed, ensuring readiness for duplication at other facilities.

5 **PHASED ROLLOUT ACROSS FACILITIES**
Upon validation, a phased deployment plan is initiated across the remaining locations—maintaining installation, training and support consistency.

"Pedestrian safety is a priority in industrial facilities. The challenge is deploying reliable, real-time detection at the point of risk. This Buyer's Guide helps cross-functional teams evaluate pedestrian detection systems based on real operating conditions and operator acceptance, not individual product features. The goal is to make informed and defensible safety decisions."

John Buttery | CEO at Riodatos