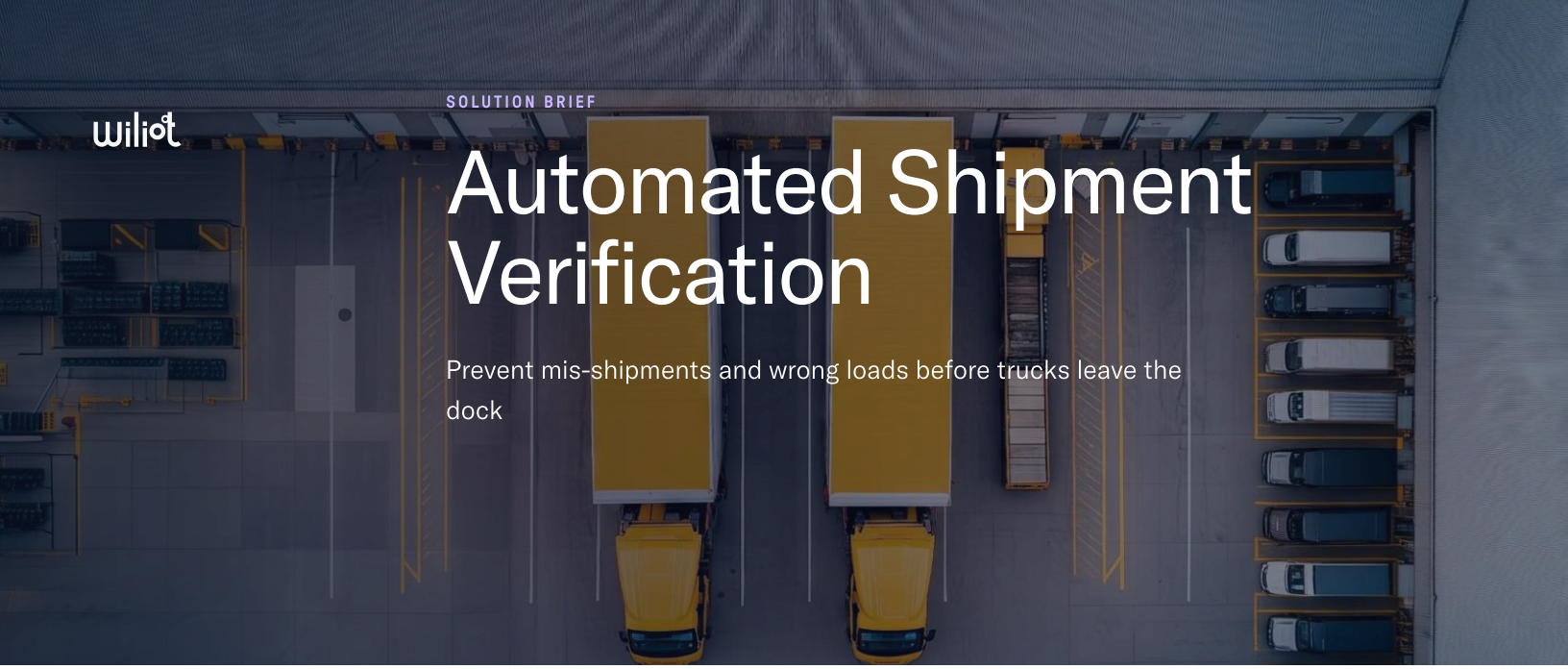

SOLUTION BRIEF

Automated Shipment Verification

Prevent mis-shipments and wrong loads before trucks leave the dock

SOLUTION BRIEF
SUPPLY CHAIN OPERATIONS

The challenge

Even 2–3% load errors cost millions annually. Manual checks catch only 60–70% of errors, and recovery costs are 5–10x higher than prevention.

Wiliot delivers 99%+ load accuracy with scan-free dock verification

AT A GLANCE

Up to 90%	$5M–$30M	< 1 year
Reduction in mis-shipments	Annual savings	Average ROI capture

THE PROBLEM DISTRIBUTION OPERATIONS FACE

$40 billion in global annual losses from incorrect loads, re-picks, chargebacks, expedited freight, and lost sales

Even a small 2–3% load-error rate can cost millions per enterprise annually, eroding margins and customer trust. Every day, DCs ship thousands of pallets—yet 5–10% of loads contain errors:

- Wrong pallets loaded onto wrong trucks
- Products left behind at the dock
- Mixed loads that should go to different destinations
- Temperature-sensitive goods sitting too long outside climate control

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The cost of a wrong load

WHEN A PALLET REACHES THE WRONG STORE

- **Labor costs double or triple** — Labor costs spike with overtime paid at time-and-a-half; QA processes to rectify issues are timely and costly, receiving teams reject deliveries, and drivers make return trips.
- **Lost sales opportunities** — stores run out of products while excess inventory sits elsewhere
- **Chargeback penalties** — retailers impose fines for incorrect deliveries
- **Customer satisfaction drops** — stores lose confidence in distribution reliability

TRADITIONAL APPROACHES FAIL BECAUSE

- Manual verification at dock doors is too slow and error-prone
- Barcode scanning only catches ~60–70% of errors before trucks depart
- By the time errors are discovered downstream, recovery costs are 5–10x higher than prevention

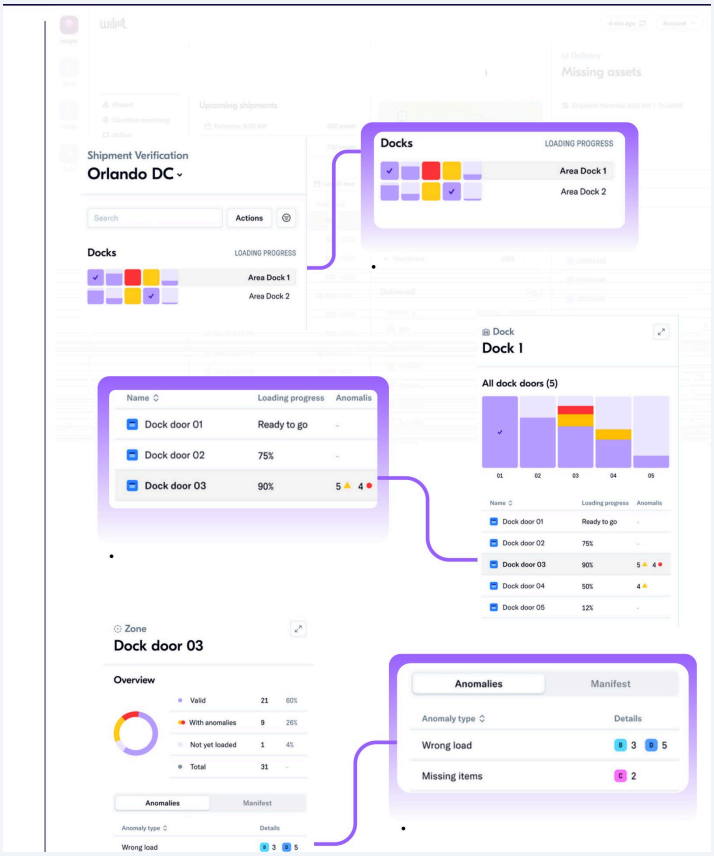
WHICH OF THESE APPLY TO YOU?

- ☑ Your operations experience regular mis-sorts or wrong loads
- ☑ You face customer chargebacks for delivery errors
- ☑ You have defined dock door areas where pallets stage before loading
- ☑ You ship pallets daily to multiple locations (stores, DCs, cross-docks)

Wiliot business insights

WILIOT BUSINESS INSIGHTS

Views from the Wiliot solution application



01 See loading progress in real-time as loads move between defined areas

02 Clearly see loading progress and anomalies to the manifest of record

03 See details concerning wrong loads and missing items flagged for corrective action

WHAT WILIOT PROVIDES

Automated mis-shipment detection using battery-free IoT Pixels and minimal lowest cost infrastructure at dock doors. The solution identifies incorrect loads within minutes, enabling corrective action.

The solution application automatically:

- Generates automated bill of lading—no manual scanning required
- Identifies which pallets are staged at each dock door area
- Tracks dwell time to prevent temperature excursions
- Confirms successful load before truck departure

Key advantage: Traditional RFID dock door systems require expensive fixed gates ($10K–50K per door). Wiliot delivers a better solution with 5–10x lower infrastructure cost using flexible deployment.

How it works

HOW IT WORKS

01 Tag assets

IoT Pixels applied at supplier or at your facility (integrated into pallet labels or adhered to RTIs/carts)

02 Deploy infrastructure

Minimal infrastructure at outbound dock doors—off-the-shelf networking equipment (<$150)

03 Automatic detection

Solution application continuously monitors pallet location and alerts when:

- Wrong pallet is at wrong dock door
- Expected pallet is missing from staged load
- Pallet has exceeded temperature/time thresholds

04 Actionable alerts

Dashboard alerts enable forklift operators to correct errors before truck departure, with specific guidance (e.g., “Move Pallet #12345 from Door 7 to Door 3”)

05 System integration

Seamless integration via C2C data transfer, plus SDK and APIs for easy adoption.

PROVEN OUTCOMES

True cost of a 2% mis-ship rate

DC shipping 1,000 pallets/day × 2% error rate	=	**20 mis-ships daily**
20 mis-ships × $1,000 average recovery cost	=	**$20,000/day**
Annual impact: $20,000 × 250 days	=	**$5M+ in preventable costs**

Wiliot solution can reduce this to <0.5% error rate, saving $3.75M+ annually

$5M–$30M
Annual savings across enterprise operations (labor, chargebacks, freight)

Up to 90%
Reduction in mis-shipments—catching errors before trucks leave

99%+
Load accuracy—consistent verification across all dock doors

< 1 year
Average time to ROI

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KPIs and industry applications

KPIS DRIVING VALUE

Error prevention
Catch and correct mis-ships before trucks depart (5–10x cheaper than recovery)

Labor efficiency
Eliminate investigation and correction cycles for downstream errors

Automated BOL
Generate bills of lading without manual scanning or documentation

Chargeback avoidance
Prevent retailer penalties for incorrect deliveries

Customer satisfaction
Improve delivery reliability and store confidence

Expedited freight elimination
Avoid emergency shipments to correct wrong loads

EXAMPLES OF INDUSTRY APPLICATIONS

INDUSTRY	CHALLENGE	OUTCOME
Grocery & food distribution	High-volume perishable shipping with temperature compliance requirements	Significant reduction in wrong loads, 90%+ reduction in temperature violations at dock
Third-party logistics (3PL)	Managing shipments for multiple clients with strict SLA requirements	Significant improvement in on-time delivery accuracy, reduced client chargebacks
Retail distribution centers	Shipping to hundreds of stores with mixed SKU pallets	Millions in annual savings from reduced mis-ships and faster dock throughput
Quick-service restaurants (QSR)	Delivering exact orders to thousands of locations	Labor savings from eliminating delivery corrections, improved franchisee satisfaction

ACROSS INDUSTRIES

Common across all industries

- Passive verification—no manual scanning slowing dock operations
- Real-time alerts enable immediate corrections (minutes, not hours/days)
- Automated BOL generation reduces documentation burden

Implementation & investment

IMPLEMENTATION

Timeline	System live in weeks
Infrastructure	Standard low-voltage installation Minimal out-of-the-box networking infrastructure
Scalability	Add dock doors incrementally without system re-architecture No need to deploy all doors simultaneously
Integration	Seamless integration via cloud-to-cloud (C2C) data transfer, plus SDK and APIs for easy adoption.

5–10x lower infrastructure cost vs. traditional RFID dock gates

VALUE DRIVERS

- Reduced mis-shipment labor (investigation + correction cycles)
- Automated BOL generation eliminates manual documentation
- Avoided chargeback penalties from delivery errors
- Eliminated manual data entry errors
- Eliminated expedited freight for corrections
- Improved customer satisfaction (fewer delivery issues)

PAYBACK PERIOD

Less than one year (average)

Fast ROI driven by immediate reduction in costly mis-shipment corrections and chargeback penalties

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Business impact summary

PREVENTION VS. RECOVERY ECONOMICS

Downstream recovery cost
$500–2,000 per incident (labor, freight, chargebacks)

Dock door prevention
Low cost per correction

ANNUAL SAVINGS

$5M–$30M

Annual savings across enterprise operations (labor, chargebacks, freight)

RESULTS AT A GLANCE

LOAD ACCURACY

99%+

Consistent verification across all dock doors

TIME TO VALUE

60–90 days

Rapid deployment

REDUCTION IN MIS-SHIPMENTS

Up to 90%

Catching errors before trucks leave

VALUE SUMMARY

If your DC ships to multiple locations and experiences even 1–5% load errors, automating dock door verification can eliminate millions in annual operational costs while improving customer satisfaction. The solution pays for itself through prevented mis-shipments and avoided chargebacks.

Learn more at wiliot.com →