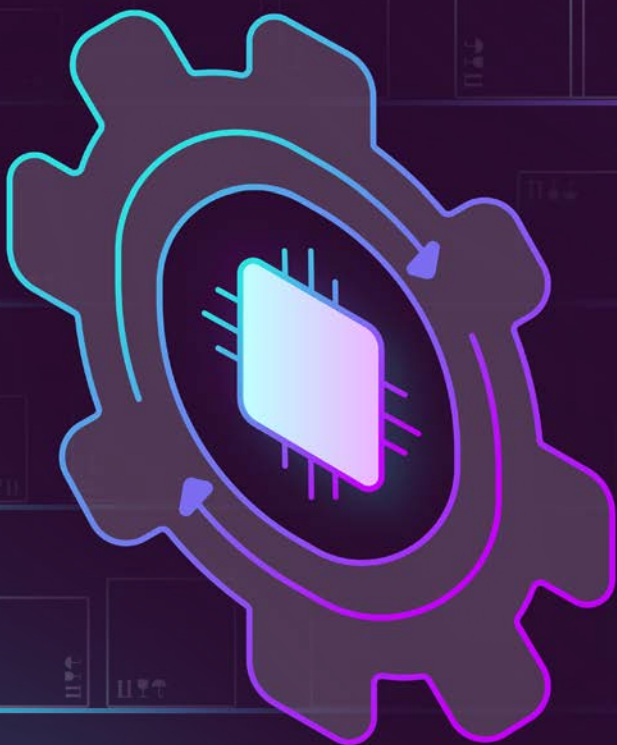




Technical Brief

The Beamup “Four-Wall” Operational Intelligence



Executive Summary

Beamup transforms warehouse loss prevention by deploying a **Multi-Agent Orchestration Layer** designed to isolate systemic shrink from daily operational friction. While legacy systems rely on reactive, single-variable alerts, which often result in “false positives” and investigative backlog, Beamup utilizes a **Convergence of Signals** across four distinct intelligence dimensions. This ensures that every insight identifies a credible, high-impact loss pattern rather than an isolated operational variance, allowing leadership to focus on protecting the bottom line.

The screenshot displays the Beamup interface with a sidebar on the left containing 'Agents', 'Insights', 'Reports', and 'Data Center'. The main area shows an 'Insights' table with columns 'ID' and 'Summary'. The table lists several insights, with the first one, 'IN-2237771', highlighted. This insight is titled 'Avoidable Shrink: High value item not stowed within SLA time' and is in 'In Progress' status. Below the table, a detailed view of this insight is shown, including an 'Insight' section with a description, an 'Actions' section with four tasks, and a 'Reasoning Trace' section with three steps.

ID	Summary
IN-2237771	Avoidable Shrink: High value item not stowed within SLA time
IN-2237766	Purchase
IN-2237760	Temperature 8% spoilage
IN-2237765	48 High Value

Insight
IN-2237771
Avoidable Shrink: High value item not stowed within SLA time
Owner: [User Icon] Status: In Progress

Insight
A pallet of 50 cases of high value SKU R483929 from PO 663332 has been received at facility F14 and processed through the receiving station at 7:32am today. This pallet should be moved to the High Value Storage Zone within the SLA of 15 minutes. However, no WMS inventory movement transaction has been recorded for this item, leaving it vulnerable to potential theft or damage.

Actions

- Immediately alert Operations team to locate pallet of SKU R483929 from PO 663332 [Create task](#)
- Move pallet to High Value Storage Zone immediately to prevent potential theft or damage [Create task](#)
- Investigate why pallet was not moved within the 15-minute SLA timeframe [Create task](#)
- Review staffing levels and workload at Receiving station during this time period [Create task](#)

Reasoning Trace
How the agent arrived at this insight

- Item master**
 - SKU R483929 is a high value item
 - Pallet contains 50 cases of SKU R483929
 - Total pallet value is \$10,000
- WMS transaction**
 - Receipt timestamp: 7:32am today (March 5, 2026) [View source](#)
 - Quantity received: 50 cases on pallet
 - Processing completed at Receiving station
- SLA violation detected: No storage transaction within required timeframe**
 - Facility F14 SLA: 15 minutes from Receiving to High Value Storage Zone [View source](#)
 - 105 minutes have elapsed since receipt processing
 - No WMS inventory movement transaction recorded for storage in HV Zone
 - SLA exceeded by 90 minutes

The Four Dimensions of Pattern Recognition

Value & Product Context THE RISK PROFILE

The engine assigns a dynamic risk score to every SKU by fusing physical characteristics with financial impact.

Attributes: Dollar value • Physical dimensions (ease of concealment) • High-risk category status

The Beamup Difference

A high-value loss is not an automatic alert. It is merely a “weighted signal” that remains dormant until reinforced by operational anomalies.

Pattern & Signal Detection THE RECURRENCE FILTER

Beamup’s agents analyze the “DNA” of a loss across time and workflow stages to find non-random behavior.

Detection: Recurring SKU patterns • Repeated losses at specific process hurdles (e.g., induction vs. pack) • Deviations from site-wide baselines.

Logical Guardrail

The system distinguishes between Bulk Error and Systemic Shrink.

For example, six iPads deleted simultaneously are flagged as a likely process error (Bulk Deletion), whereas one iPad missing every Tuesday across different stations is flagged as a credible theft pattern.

Operational Context Interpretation THE NOISE CANCELLER

This layer validates whether a loss signal is actually a “Self-Healing” inventory event.

Contextual Logic: It cross-references “SKU mismatches” (item A found where item B should be) and items subsequently located in different zones.

Outcome

By interpreting these as process-related discrepancies, Beamup suppresses the alert, preventing investigative fatigue common in traditional reporting.

Activity & Timing Alignment THE VIABILITY CHECK

To ensure every insight is investigable, the model incorporates physical and temporal constraints.

Touch Data (Robotic Sites): Integrates “Bin Face” interaction frequency to identify high-touch/high-risk moments.

Retention Windowing

Automatically filters signals where the “Stow Date” or “Loss Event” falls outside of the physical security (CCTV) retention window.

Strategic Conclusion: Why Beamup

Beamup fundamentally redefines loss prevention by shifting from passive awareness to agentic execution. By requiring reinforced, multi-dimensional signals before promoting an event, Beamup ensures that investigative resources are directed only toward high-fidelity, actionable patterns rather than isolated operational variances.



Intelligence Over Thresholds:

Moves beyond “high-dollar” alerts to identify sophisticated, recurring loss patterns that other systems miss.



Autonomous Noise Reduction

Drastically reduces false positives by automatically contextualizing process errors like SKU mismatches and misplaced stock.



Pre-Validated Actionability

Ensures every insight is “ready-to-investigate” by verifying camera retention windows and physical touch data before alerting the user.



Operational Integrity

Transforms loss prevention from a reactive security function into a proactive layer of the end-to-end operational workflow.

Ready to transform your supply chain?

Please contact us at sales@beamup.ai