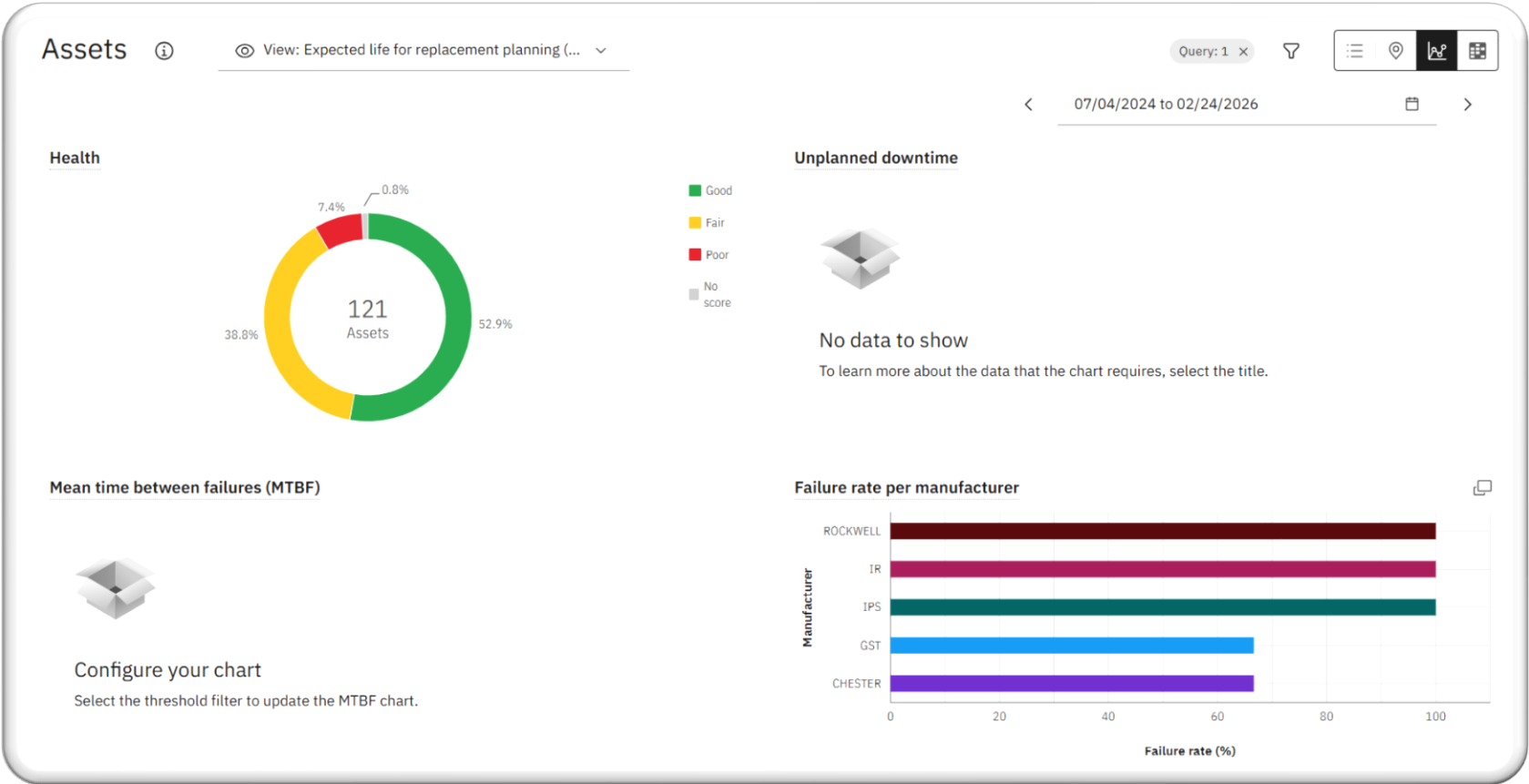


From Carousel Chaos to Reliability Control: Maximo for Airport Maintenance Teams

Baggage Claim Reliability with IBM Maximo Manage with Monitor & Health

A fundamentals-first, playbook for airport maintenance and reliability teams — from attendants to directors.



Every Stopped Belt Is a Broken Promise

The Traveler's Reality

A stopped baggage claim belt doesn't read like a maintenance event to a passenger. It reads as a failed trip. Delayed bags drive missed connections, complaint filings, and — most critically — eroded brand trust that outlasts the journey.

- Average inbound surge: mid-afternoon to early evening
- Peak throughput: hundreds of bags per hour per zone
- Three pilot zones — A, B, and C — serving separate concourses

Why This Session Matters

Today we outline a complete loop: from an attendant's 10-second stop code to a director-level ROI dashboard — with Maximo Manage, Monitor, and Health as your unified system of record.

- 📄 Goal: three Monday takeaways you can implement this week.

HVC	ON TIME
LAY	ON RIME
LON	ON TIME
GPCI	booking

Scope: Inbound Conveyors, Three Zones



Zone A

Primary international arrivals. Highest bag volume and longest runtime during peak surge. Most complex failure-mode history.



Zone B

Domestic short-haul gates. Moderate volume, frequent start/stop cycling. Belt tracking issues most prevalent.



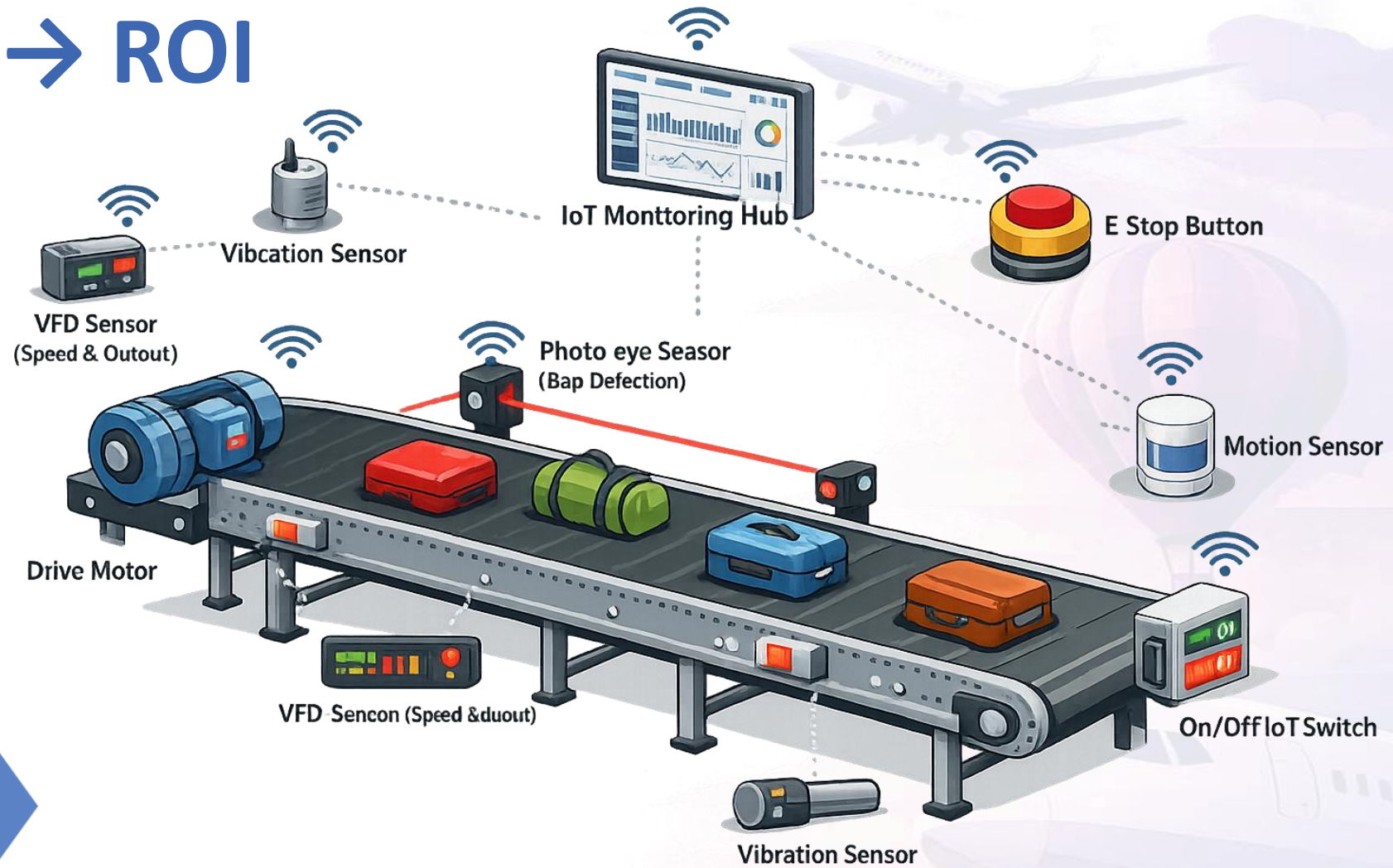
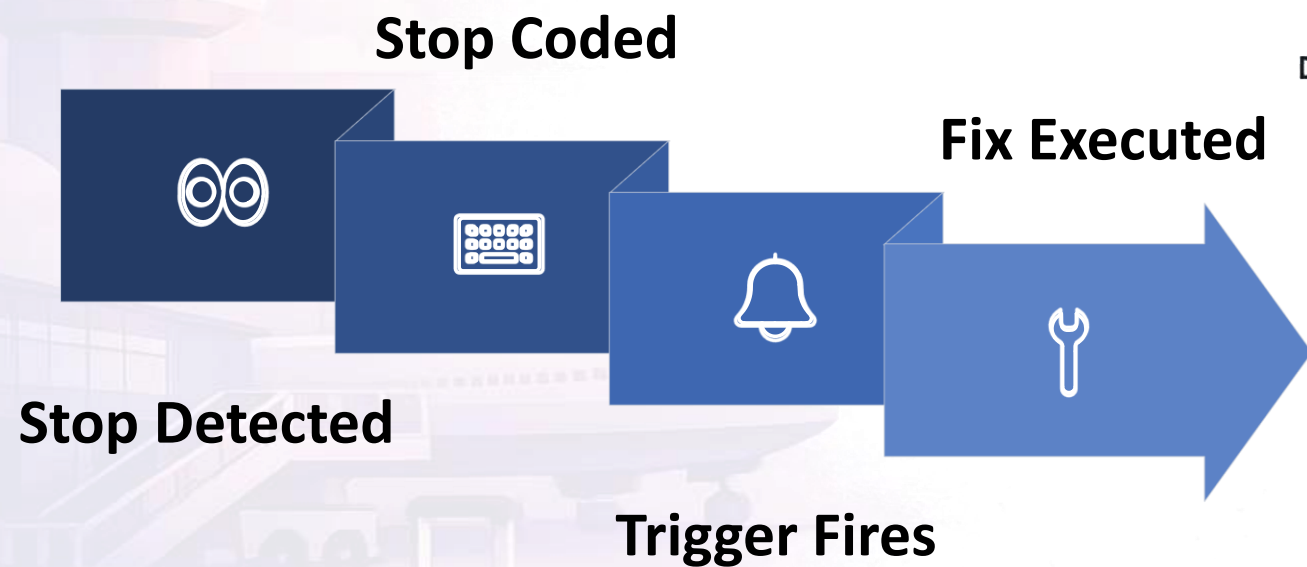
Zone C

Regional and commuter arrivals. Lowest volume but highest photo-eye misalignment frequency due to older infrastructure.

All three zones share a single Maximo asset hierarchy, unified failure codes, and one reliability scoreboard — enabling true cross-zone benchmarking.

Depenses	
HVC	ON TIME
LAY	ON RIME
LON	ON TIME

The Reliability Loop: Stop → ROI

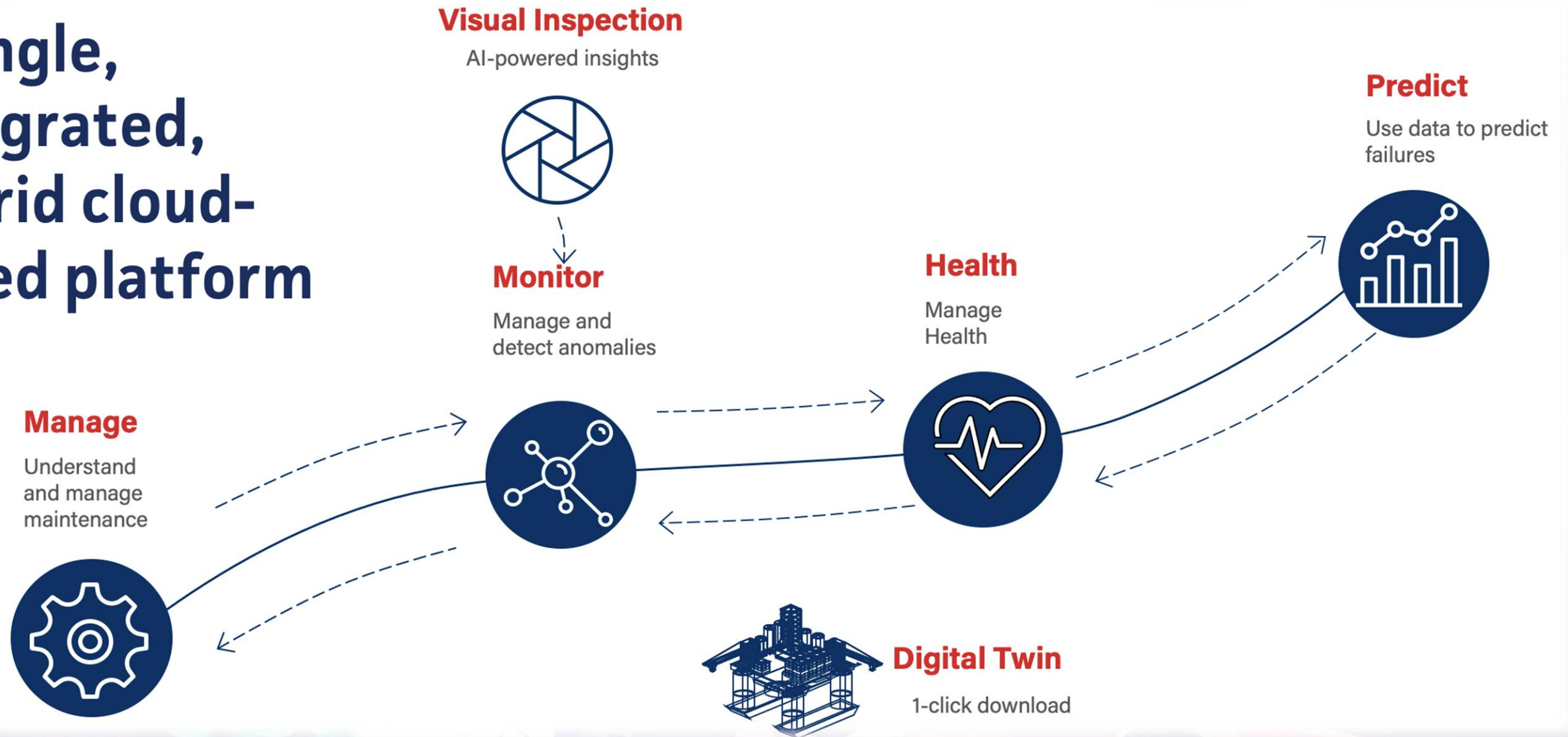


Depenses	
HVC	ON TIME
LAY	ON TIME
CON	ON TIME
GPCI	booking

This loop is the heartbeat of your reliability program. Every role — attendant, technician, planner, reliability engineer, and director — touches at least one step. Maximo Manage owns work management; Monitor and Health asset health and KPI development. The goal is to make each revolution faster and less frequent.

Maximo: "Where Do I Go?" Navigation Map

A single, integrated, hybrid cloud-based platform



Navigation tip: Bookmark the KPI Viewer, Asset Health Score list, and your Zone A/B/C saved queries. These three screens cover 80% of your daily reliability workflow.

Zone-Based Asset Hierarchy in Maximo

Why Hierarchy Matters

A clean parent-child asset structure lets you roll up failure history, costs, and health scores from individual components all the way to the zone level. This powers both your scoreboard and your Health prioritization list.

- **Parent:** Zone (A, B, or C) — location record
- **Child L1:** Conveyor line (e.g., BHS-A-01)
- **Child L2:** Drive motor, belt assembly, photo-eye bank, E-stop panel, VFD

 [Go to: Assets → View Asset Hierarchy](#)

Sample Hierarchy — Zone A

Level	Example Record
Zone (Parent)	ZONE-A
Conveyor Line	BHS-A-01, BHS-A-02
Drive Motor	BHS-A-01-MTR
Belt Assembly	BHS-A-01-BELT
Photo-Eye Bank	BHS-A-01-PE
VFD	BHS-A-01-VFD

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Go to: Assets → View Asset Hierarchy

Assets (HSE)

Specifications Features Relationships Work Zones Service Address Regulations Details Audits and Surveys Certifications

Asset: 1030 Air Handling Unit(AHU) Site: MVN

Classification

Specifications (0 - 0 of 0)

Attribute	Description	Data Type	Data
There are no rows to display.			

Classify

- 1521:<8500 GWW, Pickup, Half Ton, Regular Cab
- 43000000:IT (UNSPSC)
- AIRFIELD LIGHTING:
- BEARING: Bearing
- BREAKER: Substation Breaker
- BUILDING: Building Requests
- COMPACTOR: Compactor
- ELECTRICAL:
- ELEVATOR: Elevators & Escalators
- FACILITIES: Facilities Uniformat Code
- FANS: Fans

Cancel

Stop Coding: Designed for the Surge

Failure Codes

Failure Class: NETWORK | Organization: EAGLENA | Attachments: View attachments

Problems (1 - 1 of 1)

Failure Code	Description
NETWACC	Can Not Access Network

Causes for NETWACC (1 - 3 of 3)

Failure Code	Description
SERVERDN	Server Down
CABLEEND	Faulty Cable End
CABLE	Faulty Network Cable

Remedies for SERVERDN (1 - 1 of 1)

Failure Code	Description
REBOOT	Reboot Server



Physical obstruction stops belt movement. Most common during peak surge. Attendant selects and submits in under 10 seconds.

JAM



Visible tracking deviation, edge wear, or splice separation. Caught early, this prevents a full belt replacement down the line.

BELT ISSUE



Sensor beam blocked or misaimed, causing false stops. High recurrence rate in Zone C older infrastructure.

PHOTO-EYE MISALIGNMENT



Escape valve for edge cases. Requires a free-text note. Reviewed weekly for pattern recognition and potential new code creation.

OTHER + NOTE

- Design rule: four choices maximum. Cognitive load under 10 seconds. Go to: Failure Codes application in Maximo Manage.

Repeat-Stop Triggers: When Maximo Acts Automatically

Trigger Rules — Configure in Workflow/Escalations

Rule 1 — Frequency Burst

2 stops on same asset within 30 minutes → auto-create Priority-2 WO and notify zone technician by push notification.

Rule 2 — Same-Reason Repeat

3 stops with identical failure code in one shift → escalate to reliability engineer + flag asset in Health action list.

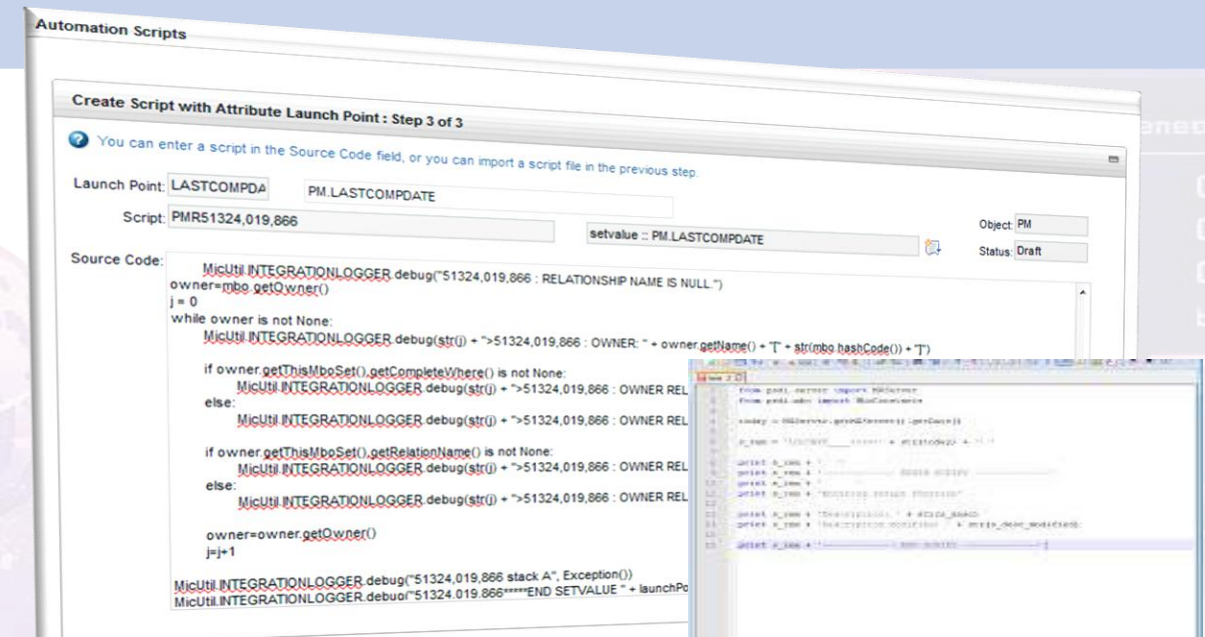
Rule 3 — Exception Threshold

Any unresolved stop exceeding 15 minutes → notify maintenance supervisor and increment MTTR KPI counter.

Why Automate Triggers?

Manual escalation depends on someone noticing. Automated triggers fire every time, without human memory. They remove the gap between "something is wrong" and "someone is fixing it" — especially critical during surge when supervisors are managing multiple demands simultaneously.

- Go to: Escalations application → New Escalation → define condition point, time limit, and action (email/WO/notification).



The screenshot shows the 'Automation Scripts' configuration page in Maximo. The 'Create Script with Attribute Launch Point: Step 3 of 3' window is open. The 'Launch Point' is set to 'LASTCOMPDA' and 'PM.LASTCOMPDATE'. The 'Script' field contains 'PMRS1324,019,866'. The 'Source Code' field contains the following script:

```
MicUtil.INTEGRATIONLOGGER.debug("51324,019,866 : RELATIONSHIP NAME IS NULL.")
owner=owner.getOwner()
j=0
while owner is not None:
    MicUtil.INTEGRATIONLOGGER.debug(str(j) + ">51324,019,866 : OWNER: " + owner.getName() + " + str(owner.getAssetCode() + "J")
    if owner.getThisMboSet().getCompleteWhere() is not None:
        MicUtil.INTEGRATIONLOGGER.debug(str(j) + ">51324,019,866 : OWNER REL
    else:
        MicUtil.INTEGRATIONLOGGER.debug(str(j) + ">51324,019,866 : OWNER REL
    if owner.getThisMboSet().getRelationName() is not None:
        MicUtil.INTEGRATIONLOGGER.debug(str(j) + ">51324,019,866 : OWNER REL
    else:
        MicUtil.INTEGRATIONLOGGER.debug(str(j) + ">51324,019,866 : OWNER REL
    owner=owner.getOwner()
    j=j+1
MicUtil.INTEGRATIONLOGGER.debug("51324,019,866 stack A", Exception())
MicUtil.INTEGRATIONLOGGER.debug("51324,019,866****END SETVALUE " + launchPo
```

Monday Takeaway — Three Starter Job Plans



JP-JAM: Jam Clear & Restart Verify

- Isolate / LOTO drive motor
- Remove obstruction; inspect belt surface for damage
- Restore power; jog belt 3 cycles; verify smooth run
- Confirm photo-eye clear; document in WO labor record



JP-BELT: Belt Tracking & Condition Inspection

- Run belt at full speed; observe edge tracking at all idlers
- Adjust take-up tension; check splice condition visually
- Measure belt thickness at 3 sample points; log readings
- Flag for replacement if wear exceeds threshold

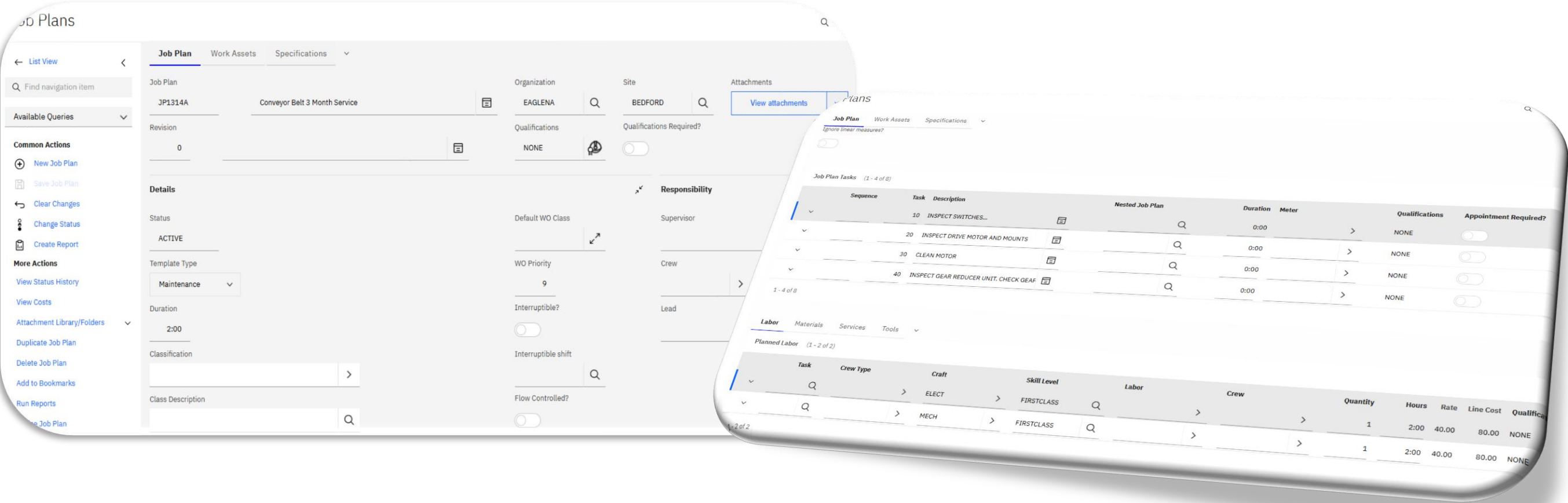


JP-PE: Photo-Eye Alignment & Mount Check

- Verify emitter/receiver alignment with alignment tool
- Clean lens faces; check mounting bracket tightness
- Simulate object break; confirm relay response time
- Record alignment angle in asset attribute field

📄 Go to: Job Plans application → New → add tasks, crafts, materials, and tools. Link each job plan to the corresponding failure code for auto-assignment on triggered WOs.

Monday Takeaway — Three Starter Job Plans



Go to: Job Plans application → New → add tasks, crafts, materials, and tools. Link each job plan to the corresponding failure code for auto-assignment on triggered WOs.

Monday Takeaway — Three Starter PM Records

PM ID	Asset	Frequency	Job Plan	Failure Mode Targeted
PM-JAM-W	All Zones — Belt/Drive	Weekly (Mon AM)	JP-JAM	Jam — obstruction & drive check
PM-BELT-M	All Zones — Belt Assembly	Monthly	JP-BELT	Belt tracking & wear progression
PM-PE-M	Zone C Priority (then A/B)	Monthly	JP-PE	Photo-eye misalignment recurrence

Start with weekly PM-JAM on all zones. Add PM-BELT and PM-PE monthly. After 60 days of data, use Maximo Health to compare PM completion rate against stop frequency — and tune the intervals based on actual failure history, not gut feel.

Go to: Preventive Maintenance application → Generate Work Orders → set frequency, route, and crew assignments.

Monday Takeaway— Three Starter PM Records

The image displays two screenshots of the Preventive Maintenance application interface. The left screenshot shows the main PM record configuration page for 'Boiler Monthly Inspection' (PM 1041) at site 'MVN'. The right screenshot shows the 'Work Order Generation Information' and 'Time Based Frequency' settings for the same record.

Preventive Maintenance Record Configuration (Left Screenshot):

- PM:** 1041
- Frequency:** Boiler Monthly Inspection
- Site:** MVN
- Status:** DRAFT
- Master PM:** 1010
- Override Updates from Master PM?:**
- Attachments:** [View attachments](#)
- Forecast Dates Locked?:**
- Forecast Exists?:**
- Details:**
 - Location:** [Empty]
 - Lead Time (Days):** 5
 - Counter:** 0
 - Asset:** 1071, Centrifugal Pump 100 GPM, 60 FT-HD
 - Lead Time Active?:**
 - Use Job Plan Sequences?:**
 - Route:** [Empty]
 - Include this PM in the Forecast?:**
 - Has Children?:**
- Work Order Information:**
 - Job Plan:** [Empty]
 - Description:** [Empty]
 - Supervisor:** [Empty]
 - Work Type:** [Empty]
 - Last Start Date:** [Empty]
 - Crew:** [Empty]
- Responsibility:**
 - Supervisor:** [Empty]
 - Crew:** [Empty]

Work Order Generation Information (Right Screenshot):

- Use Last Work Order's Start Date to Calculate Next Due Date?:**
- Generate Work Order Based on Meter Readings (Do Not Estimate?):**
- Generate Work Order When Meter Frequency is Reached?:**

Time Based Frequency (Right Screenshot):

- Frequency:** 1
- Alert Lead (Days):** 0
- Extended Date:** [Empty]
- Target Start Time:** 12:00 A
- Frequency Units:** MONTHS
- Estimated Next Due Date:** 7/31/24
- Adjust Next Due Date?:**

Go to: Preventive Maintenance application → Generate Work Orders → set frequency, route, and crew assignments.

Bag Validation & Exception Handling

Mobile Barcode Scanning Workflow

Maximo Mobile on a handheld scanner allows attendants and technicians to validate bag-flow confirmation directly at the carousel — no paper, no radio calls. The scan anchors the work order close-out to the physical event.

- **Presence check:** Bag scanned confirms belt is running and delivering
- **Time-window confirmation:** Scan must occur within defined SLA window post-stop resolution
- **Exception flag:** Scan outside window auto-generates exception record for supervisor review

Exception Handling Rules

01

Stop coded → WO generated

Auto-creation within 60 seconds of code submission.

02

Technician scans asset tag on arrival

Clock starts. MTTR counter runs in real time.

03

Fix confirmed; bag-flow scan executed

WO moves to COMP status. Time recorded.

04

Exception if SLA missed

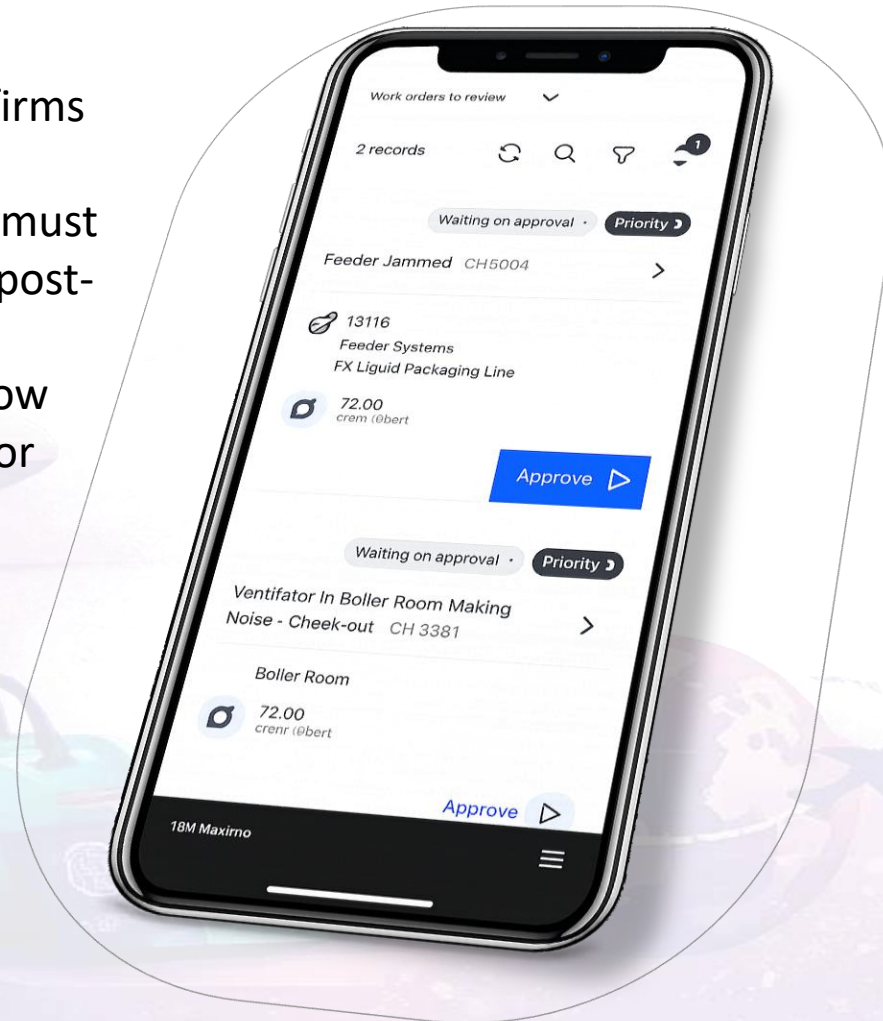
Escalation fires; director notified; KPI impacted.

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Instrumented Conveyor: What to Monitor First

Vibration

Mount on drive motor bearing housing. Rising RMS = bearing wear. First signal before audible noise or belt wander.



Motion / Run-State

Confirms belt is actually moving when commanded. Detects phantom stops and drive control faults before attendants notice.

VFD Current & Faults

Current draw trending up = belt drag or mechanical resistance. Fault codes surface in Monitor as discrete events for WO linking.



On/Off Cycles

Excessive cycling shortens motor life and heats drive components. Monitor cycle count per shift; alert at 2x baseline.

- Go to: Maximo Monitor → Create Device Type → map IoT data points → configure alert thresholds. Start with vibration on Zone A drive motors as your first pilot instrument.

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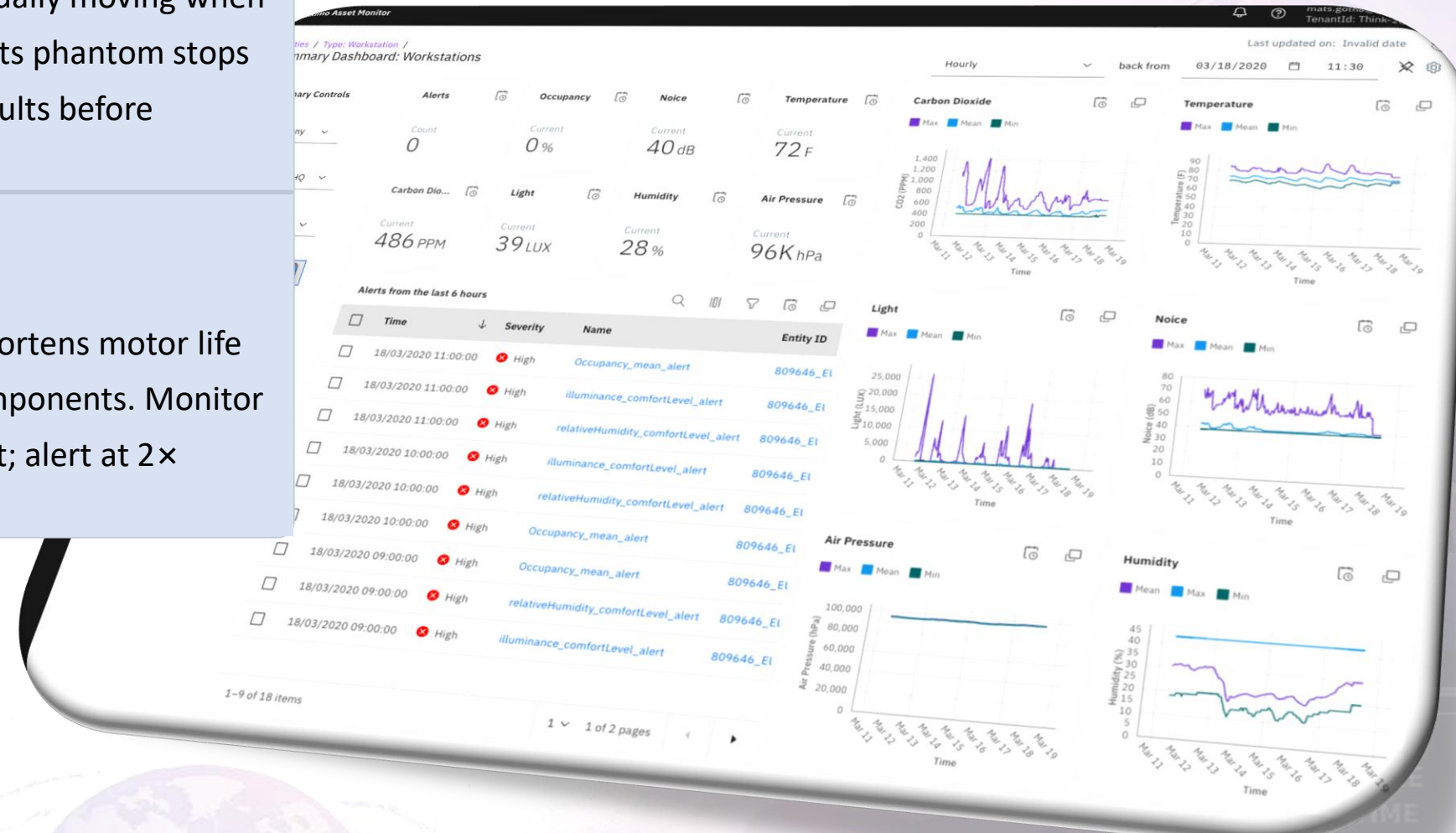
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Maximo Health: From Data to Decision

How Health Scores Are Built

Maximo Health aggregates three dimensions into a single risk score for each asset, letting reliability engineers prioritize across all three zones simultaneously without building custom spreadsheets.

- **Failure history:** Frequency and severity of past stops and WOs
- **Condition signals:** Sensor readings from Monitor (vibration, current)
- **Criticality:** Operational impact score — Zone A during peak surge = highest

📄 Go to: Maximo Health → Assets → sort by Risk Score descending → review Action List.

Weekly Health Review Routine

→ Monday AM: Open Action List

Sort by risk score. Any asset in red? Trigger immediate inspection WO before the afternoon surge.

→ Update Criticality Matrix Quarterly

As zones evolve, re-score criticality. Health scores are only as good as the inputs driving them.

→ Review Predicted Failure Date

Health uses historical MTBF to project next failure window. Plan PM or parts pre-staging accordingly.

HVC	ON TIME
LAY	ON RIME
LON	ON TIME
GPCI	booking

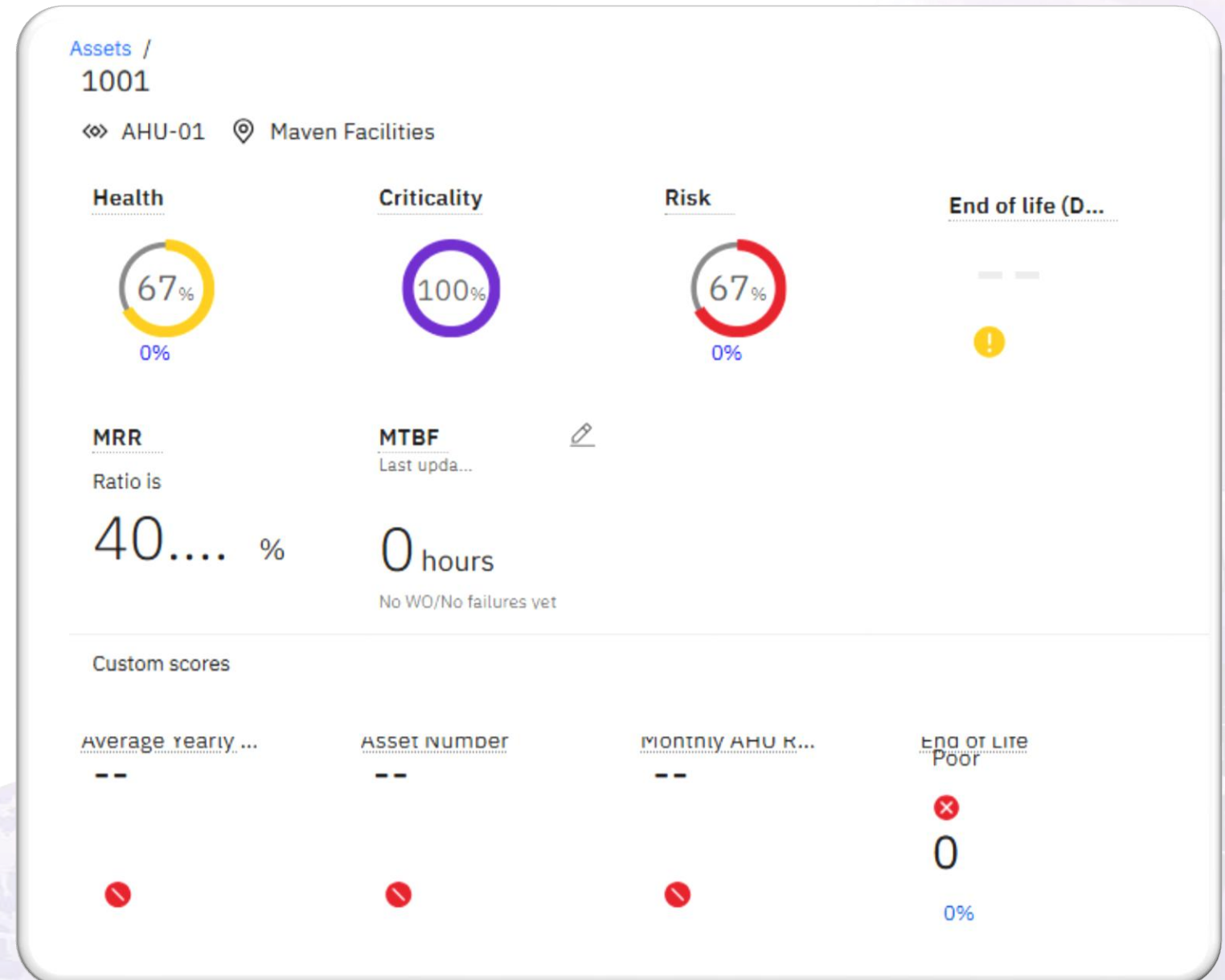
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Maximo Visual Inspection: Future-State Blurb

What MVI Can Do for Baggage Claim

Maximo Visual Inspection (MVI) applies trained computer vision models to camera feeds above the belt. Early-stage use cases being piloted in BHS environments include:

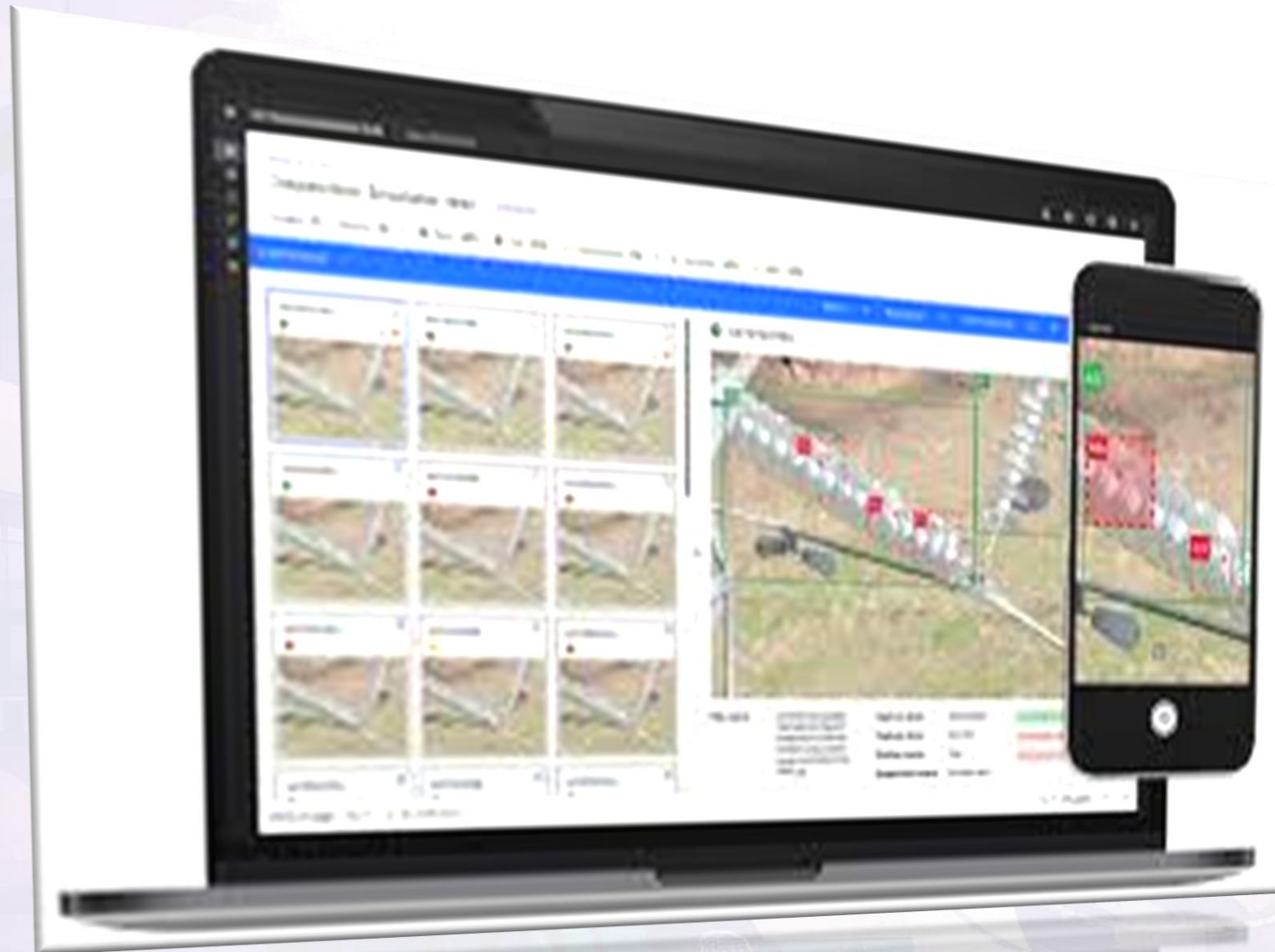
- **Belt tracking deviation** — visual edge detection before mechanical sensor triggers
- **Carryback detection** — items dragged under the belt edge, early jam precursor
- **Photo-eye obstruction** — foreign material partially blocking sensor face

Governance Caveats — Read Before You Pilot

- Requires dedicated camera hardware + controlled lighting per zone
- Model training needs labeled failure-image datasets (plan 4–6 weeks)
- Model governance: version control, retraining schedule, false-positive SLA
- Privacy review required if cameras capture passenger images

📄 MVI is a Year-2 conversation. Get your Monitor foundation stable first.

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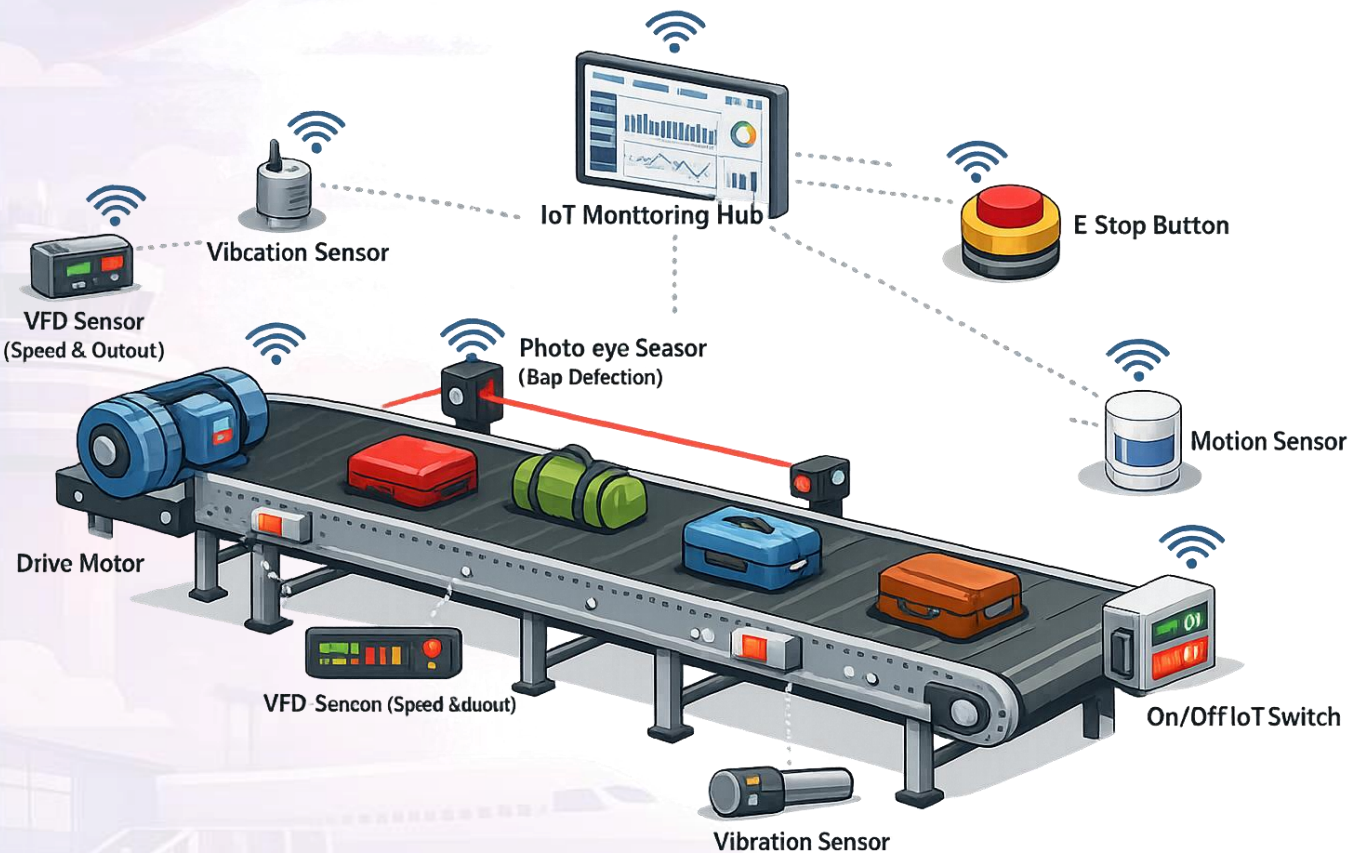


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The ROI Case: Build It With Your Own Data



\$8K–\$25K

Cost per Unplanned Stop

Range from industry benchmarks (labor, diverted bags, complaints, penalties). Lock your number with a 2-week baseline sprint.

Benefits Buckets

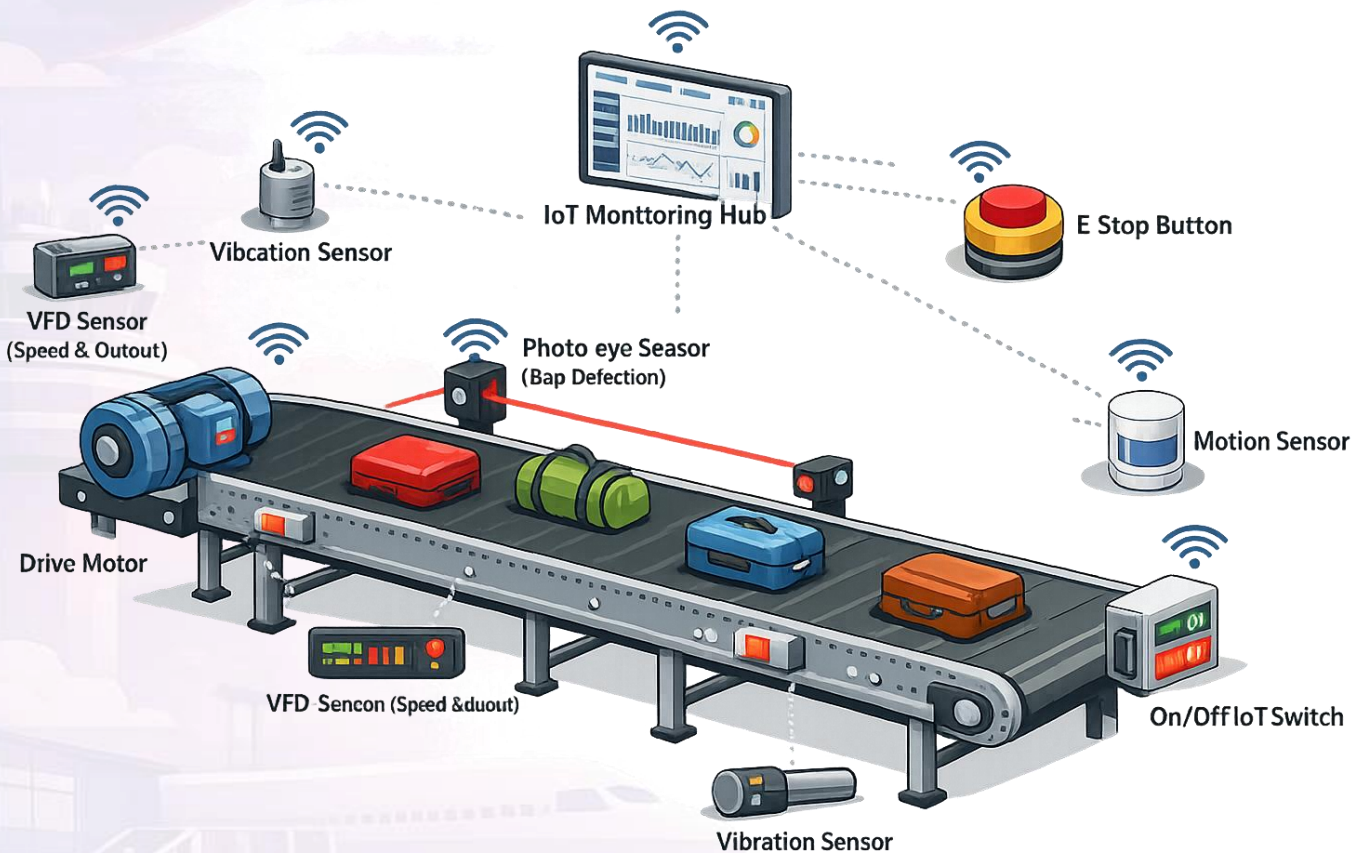
- **Hard savings:** Reduced overtime, fewer emergency part orders, avoided SLA penalties
- **Soft savings:** Shorter passenger complaint queues, improved OTP perception, staff morale

How to Lock the Number

- Pull current stop log for the last 30 days (manual or Maximo history)
- Assign cost per event with Finance; agree on MTTR baseline
- Model 20%, 30%, 40% improvement scenarios — present range to leadership

Depenses	
HVC	ON TIME
LAY	ON RIME
GPCI	ON TIME booking

The ROI Case: Build It With Your Own Data



40%

Target MTTR Reduction

Achievable in 90 days when job plans are pre-loaded and triggers are active. Every minute saved = direct cost avoidance.

Benefits Buckets

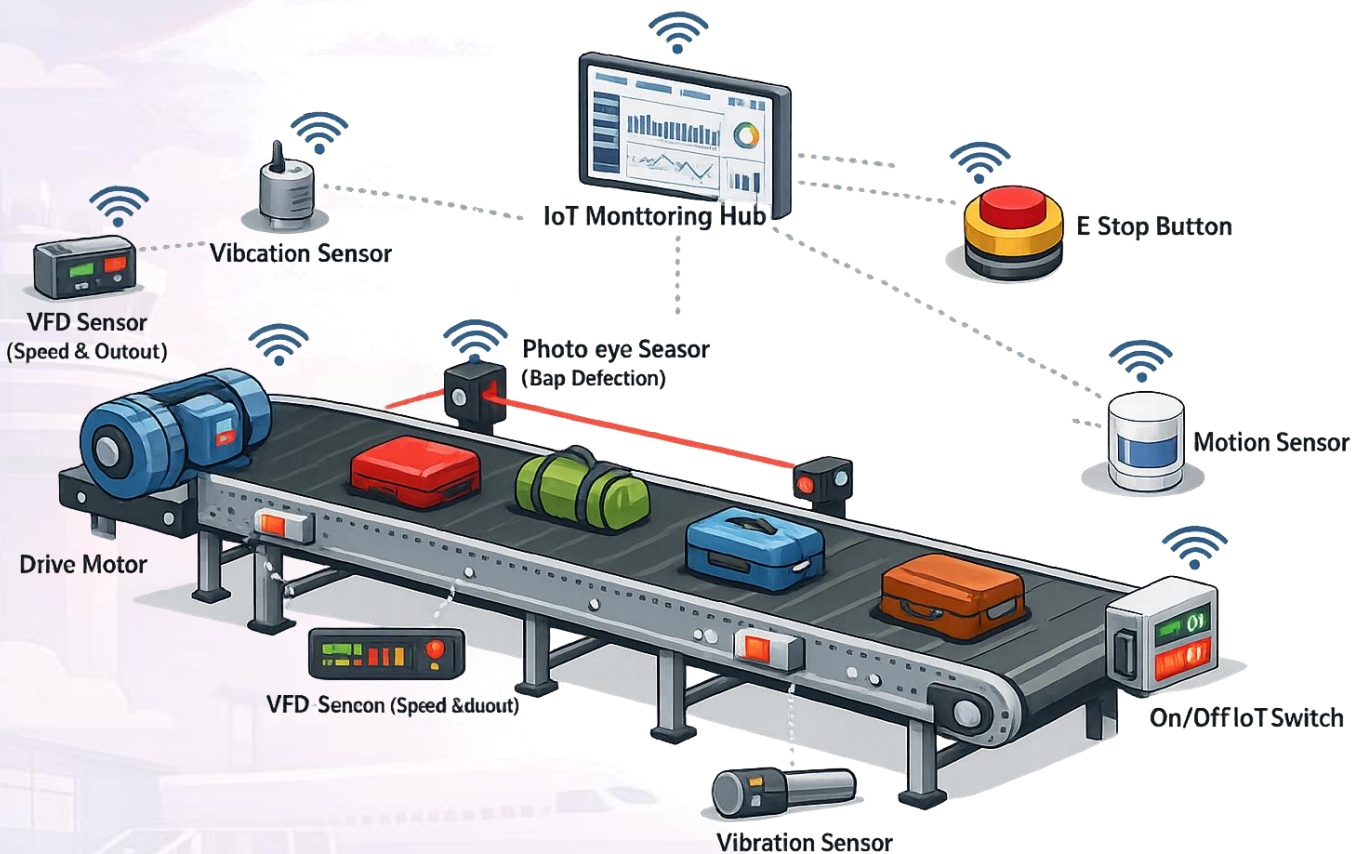
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The ROI Case: Build It With Your Own Data



3x

Repeat-Stop Reduction

Pilot sites report 3x fewer repeat stops within 60 days of implementing trigger rules and weekly PM cadence.

Benefits Buckets

- **Hard savings:** Reduced overtime, fewer emergency part orders, avoided SLA penalties
- **Soft savings:** Shorter passenger complaint queues, improved OTP perception, staff morale

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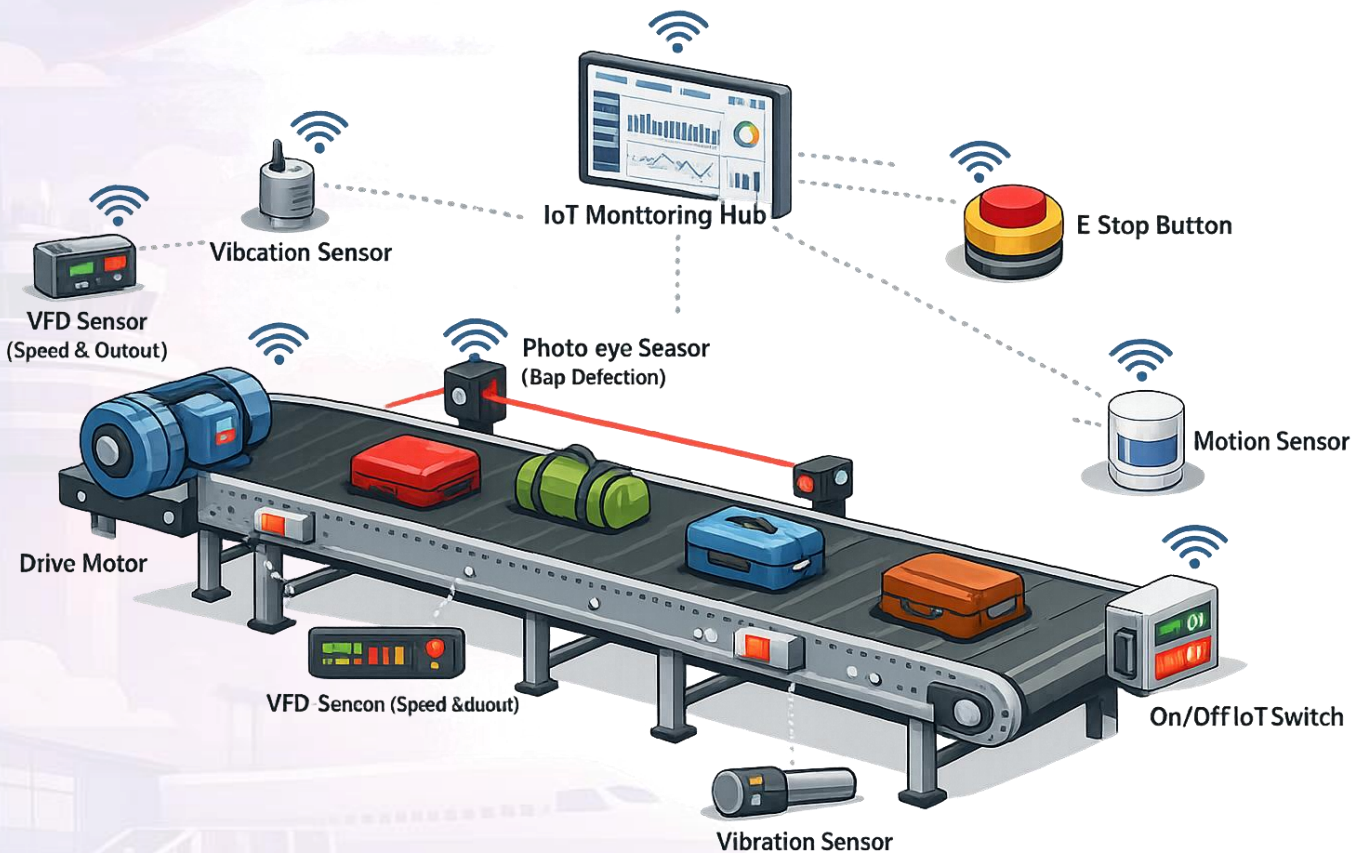
Depenses	
HVC	ON TIME
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The ROI Case: Build It With Your Own Data

2 Wks

Baseline Sprint Length

Run a 2-week observation period with all stop codes active before projecting ROI. Real data beats spreadsheet assumptions.



Benefits Buckets

- **Hard savings:** Reduced overtime, fewer emergency part orders, avoided SLA penalties
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How to Lock the Number

- Pull current stop log for the last 30 days (manual or Maximo history)
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Depenses	
HVC	ON TIME
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...	ON TIME
GPCI	booking

Monday Takeaway — Weekly Reliability Scoreboard

Five KPIs That Tell the Full Story

1

Stops per Shift

Split: **Surge** (mid-afternoon–evening) vs. **Non-Surge**. Normalizes volume differences and exposes surge-specific failure modes.

2

% Stops by Reason Code

Tracks JAM / BELT / PHOTO-EYE / OTHER distribution. Shift in mix = leading indicator of emerging failure cluster. Review weekly.

3

MTTR by Zone

Mean Time to Repair, segmented A / B / C. Directly measures the job plan and trigger effectiveness. Target: trending down each sprint.

4

Repeat Stops <24 Hours

Same asset, same code within 24 hours = unresolved root cause. Every repeat is a trigger-rule test. Zero repeats = passing grade.

5

Exception Closure Time

From bag-flow exception flag to supervisor close-out. Measures process discipline, not equipment. Target: <4 hours average.

- Go to: KPI Viewer → create a saved filter for each zone → schedule Monday AM email distribution to all stakeholders. Five numbers, one email, zero spreadsheets.

KPI Trend: What Good Looks Like at 90 Days

The Transformation Arc — Illustrative Benchmark from Analogous BHS Pilot Programs

WEEK 1 — BASELINE

⚠️ **Chaotic**

Stops / Surge Shift **18**

MTTR **52 min**

Repeat Stops <24h **7**

Wk 4 Job Plans
Deployed
↓
Wk 6 Triggers
Active
↓
Wk 8 Health
Scores
Guiding Work
↓
Wk 12 Sustained
Improvement

WEEK 12 — TARGET

✓ **Controlled**

Stops / Surge Shift **5**

MTTR **18 min**

Repeat Stops <24h **0**

72%
Fewer Stops

18 → 5 per surge shift

65%
Faster Repairs

52 min → 18 min MTTR

100%
Repeat Reduction

7 → 0 repeat stops <24h

Alignment Across Every Role — No One Sits Out



Claim Attendants

10-second stop code. Their input is the **first signal** in the entire reliability loop. Train for consistency, not perfection. Four choices, no ambiguity.



Maintenance Technicians

Job plan execution + mobile WO close-out. The faster the scan-in / scan-out discipline, the cleaner the MTTR data feeding your scoreboard.



Reliability Engineers

Health scores, Monitor alert tuning, PM interval optimization. Turn failure history into prevention. Own the weekly scoreboard narrative.



Directors & Leadership

Five KPIs, one Monday email, ROI in dollars. No system logins required. Their job: resource decisions backed by data, not anecdotes.

Your 90-Day Implementation Roadmap

PHASE 1: FOUNDATION (DAYS 1-30)

Maximo hierarchy, failure codes, job plans, PMs, training, baseline sprint.

PHASE 2: AUTOMATE (DAYS 31-60)

Triggers, mobile WO, sensors, KPIs, scoreboard review.

PHASE 3: OPTIMIZE (DAYS 61-90)

Health review, PM tuning, Monitor expansion, ROI model, MVI governance.

Monday Checklist — Leave With These Three Actions

✓ Takeaway 1 — Stop→Work Closed Loop

- Configure 4 failure codes (JAM, BELT ISSUE, PHOTO-EYE, OTHER)
- Build trigger rules: 2 stops/30 min → auto-WO; 3 same-code/shift → escalate
- Train attendants this week; run first 2-week baseline sprint

✓ Takeaway 2 — Top-3 Failure Mode Starter Kit

- Create JP-JAM, JP-BELT, JP-PE job plans in Maximo this Monday
- Schedule PM-JAM weekly, PM-BELT and PM-PE monthly
- Link each job plan to its failure code for auto-assignment

✓ Takeaway 3 — Weekly Reliability Scoreboard

- Configure 5 KPIs: stops/shift, % by reason, MTTR by zone, repeats <24h, exception closure time
- Schedule Monday AM distribution email to all stakeholders
- Build ROI model after 2-week baseline — present to leadership by Day 30

Reliability isn't about perfection — it's about building a system that learns faster than it fails. Start the loop on Monday. The ROI follows the data.

Questions

Thank you for your time!

Michael Guns, CRL, CEFP, CMRP

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www.mavenasset.com

