



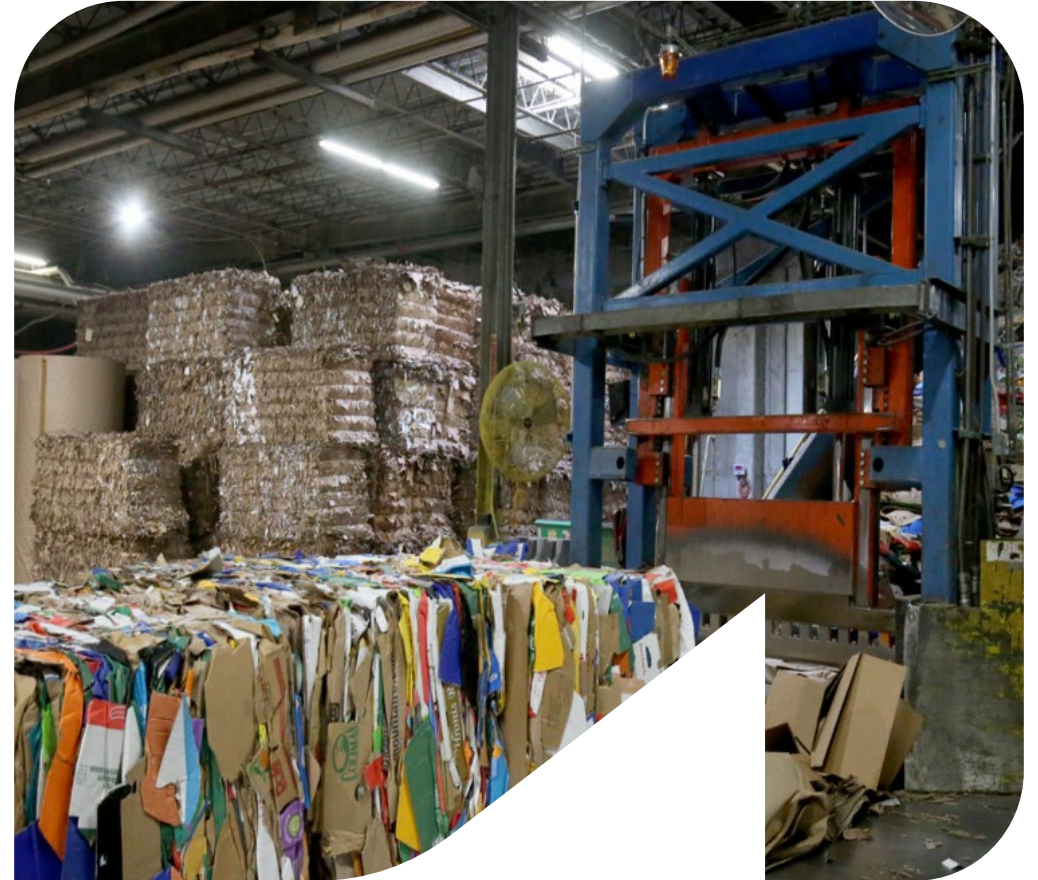
id-101000010

Vaidio Video AI Analytics for Recycling

V A I B S
VIDEO AI ANALYTICS

Containerboard requirements

- Bale type recognition.
- Contaminated bale detection.
- Bale counting to measure operator compliance and quality control.
- Inventory management.



Real time bale recognition

Six bale types can be detected:

- ☑ Store
- ☑ Hardwire
- ☑ Haybale
- ☑ Double Linked Kraft (DLK)
- ☑ Broke (Cull)
- ☑ Roll

2023-03-15 22:10:43
OCC AI Bottom | IDIR=IN

Object Type: store Speed: -
Confidence: 1.00
Color: Yellow
Width: 469
Height: 503

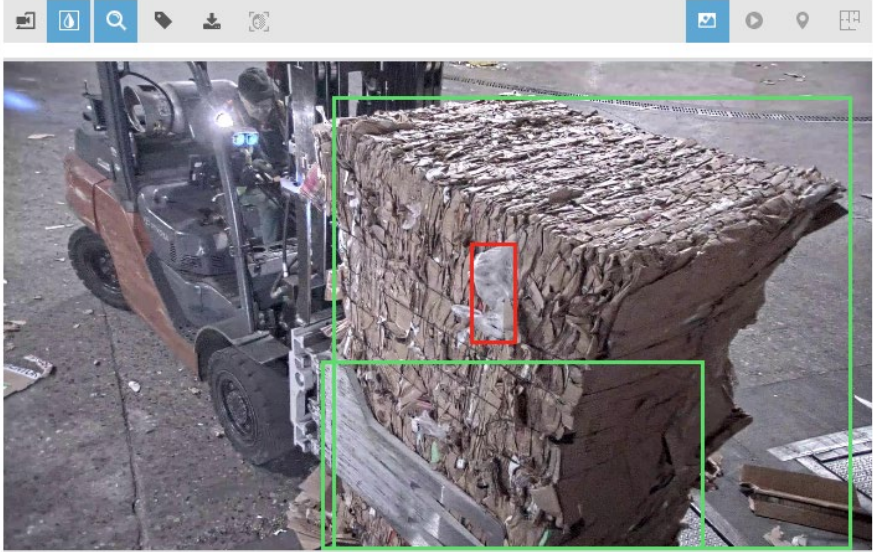
hardwire
hardwire
hardwire
store
store

Real Time Contaminant detection

Individual contaminants are detected using existing cameras:

- Plastic
- Styrofoam
- Glass
- Wood
- Dirt

2023-03-04 15:18:48
Loading dock door 2 | IDIR=OUT



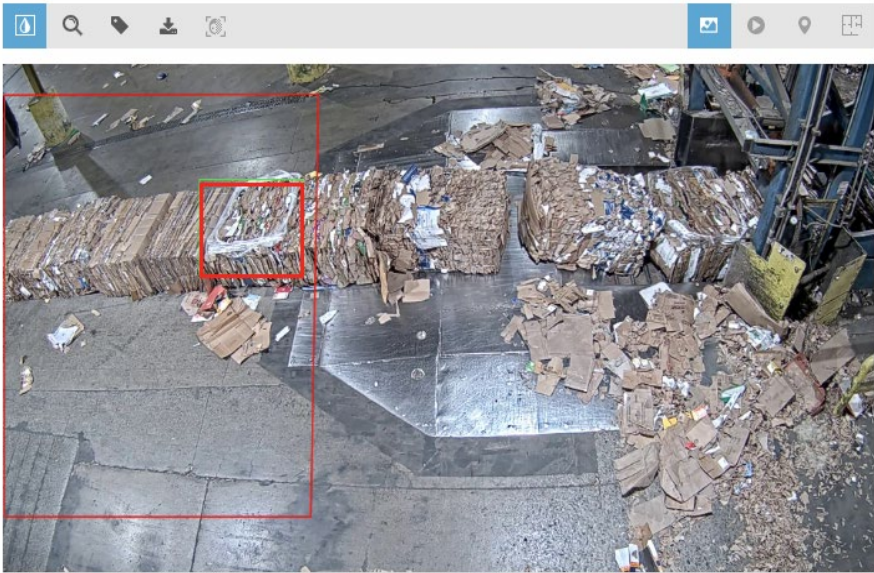
Object Type: reject Speed: -
Confidence: 0.92
Color: -
Width: 139
Height: 298

haybale
haybale
reject

Real Time Contaminant Alerting

- An alert is triggered when a certain percentage of the bale contains contaminants.
- For example, 66% of the bale is contaminated and an alert was triggered since it met the 60% threshold.

2023-04-03 20:59:35
conveyor bottom |



Object Type: major Speed: -
Confidence: 0.66
Color: -
Width: 229
Height: 203

major

Operator compliance at conveyor

- Bales must enter the conveyor in a certain order, f.e.:
 - ☑ Store, store, hardwire, store, haybale.
- Vaidio counts bales and integrates with containerboard management systems to measure operator compliance and show workers which bales should be entered next.
 - ☑ Color indicates the current compliance

Bale Type	Store	Haybale	Store	DLK	Hardwire	Broke
Bale Sequence	3	2	3	1	1	0
Compliance	3	1	2	0	1	1

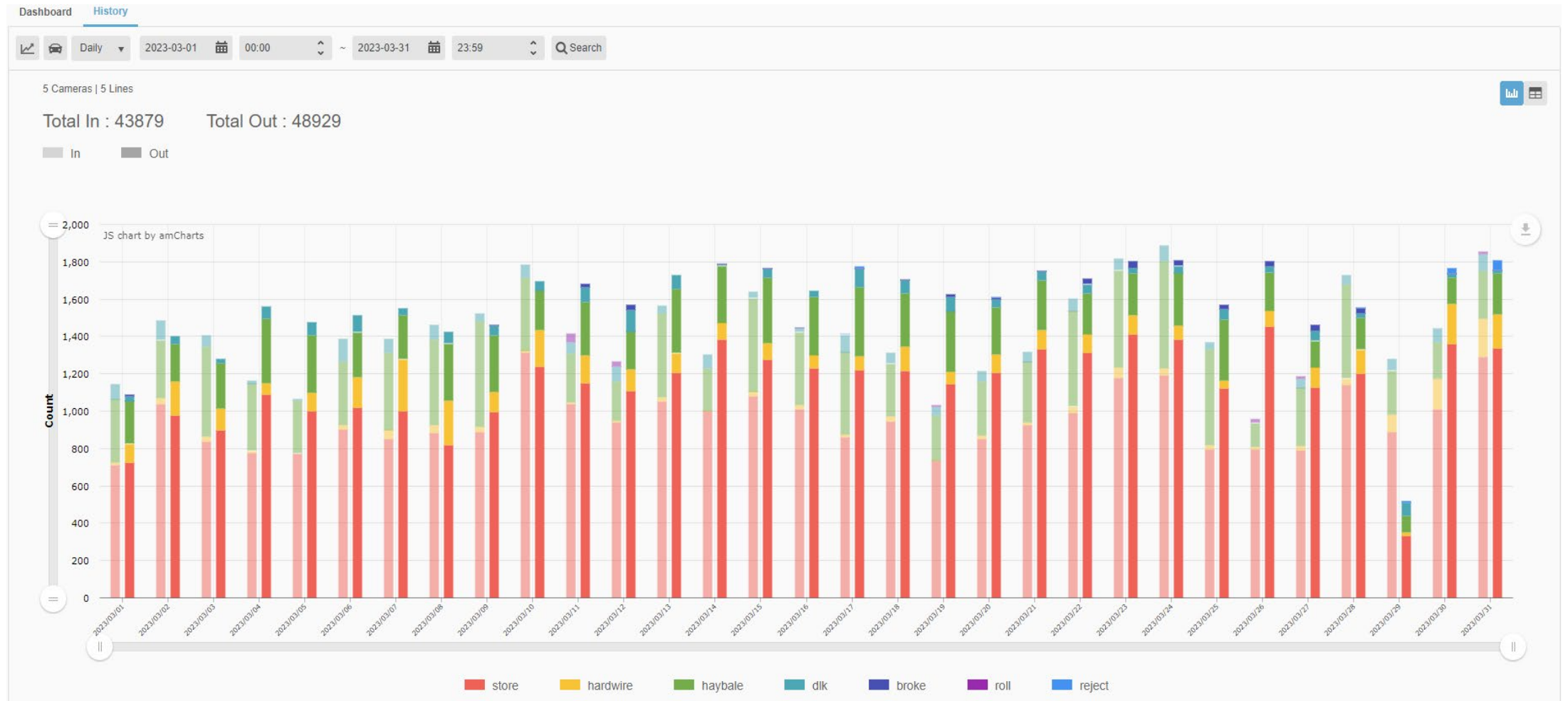
Inventory Management

- Bales are counted entering the facility at loading docks and being consumed at the conveyor.
- Monitor current bale counts (counting dashboard).
- View past bale counts hourly, daily, or monthly (counting history).
- Filter counts by bale type and camera.
- Download graphs (pdf, jpeg) and reports (Excel).

Counting dashboard (Real time)

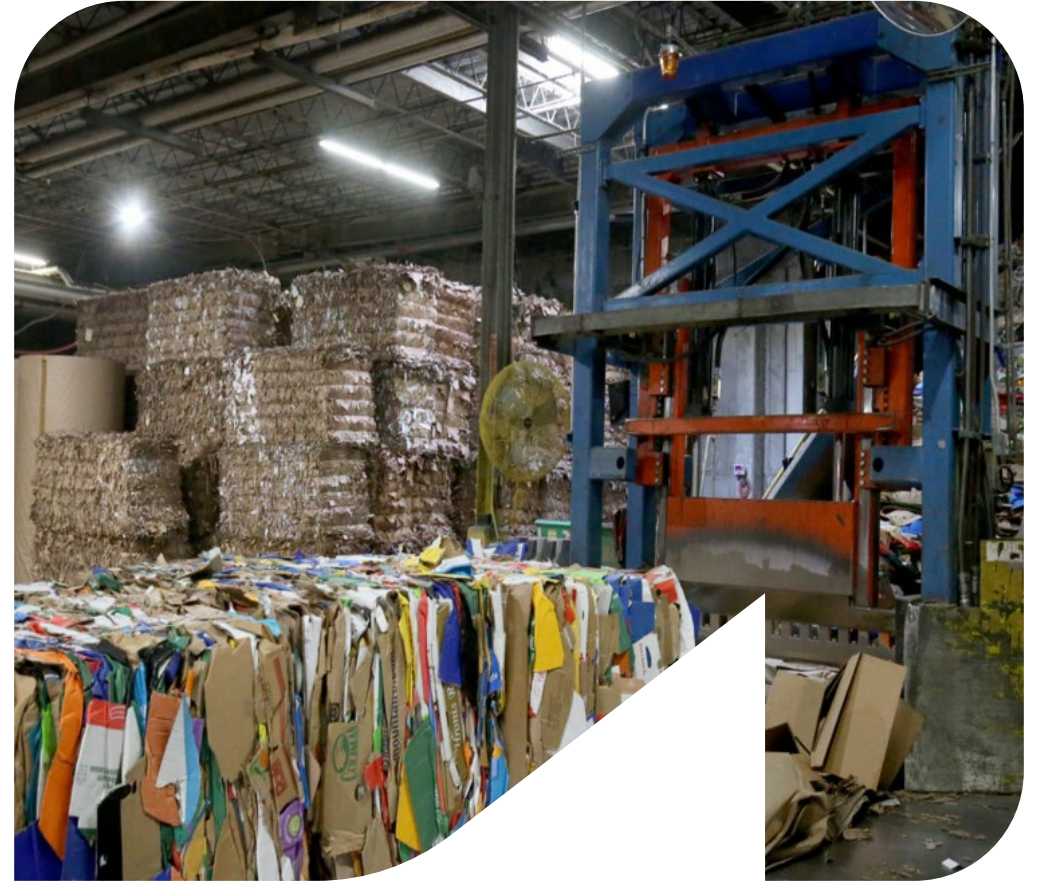


Counting history (forensic)



Executive summary

- AI vision analytics significantly improves quality control.
- Improve paper quality output.
- Return on Investment of over 100% in the first year.
- Industry 4.0 reduce carbon emission.





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