Cybord

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Supply Chain Quality Challenges

Cybord ltd.
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Pain

Most failures in electronic products are caused by components, and not by the process

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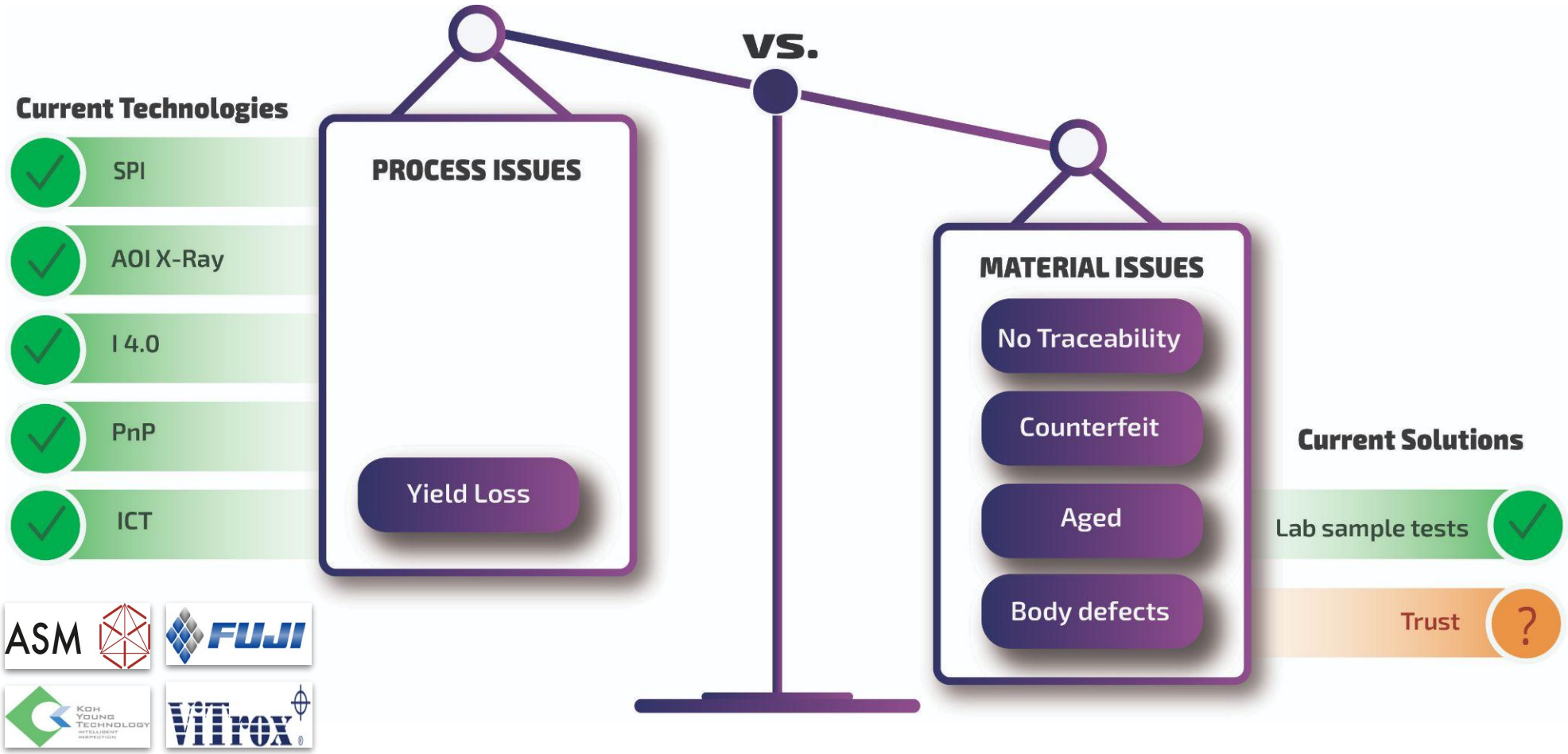
Problem Description



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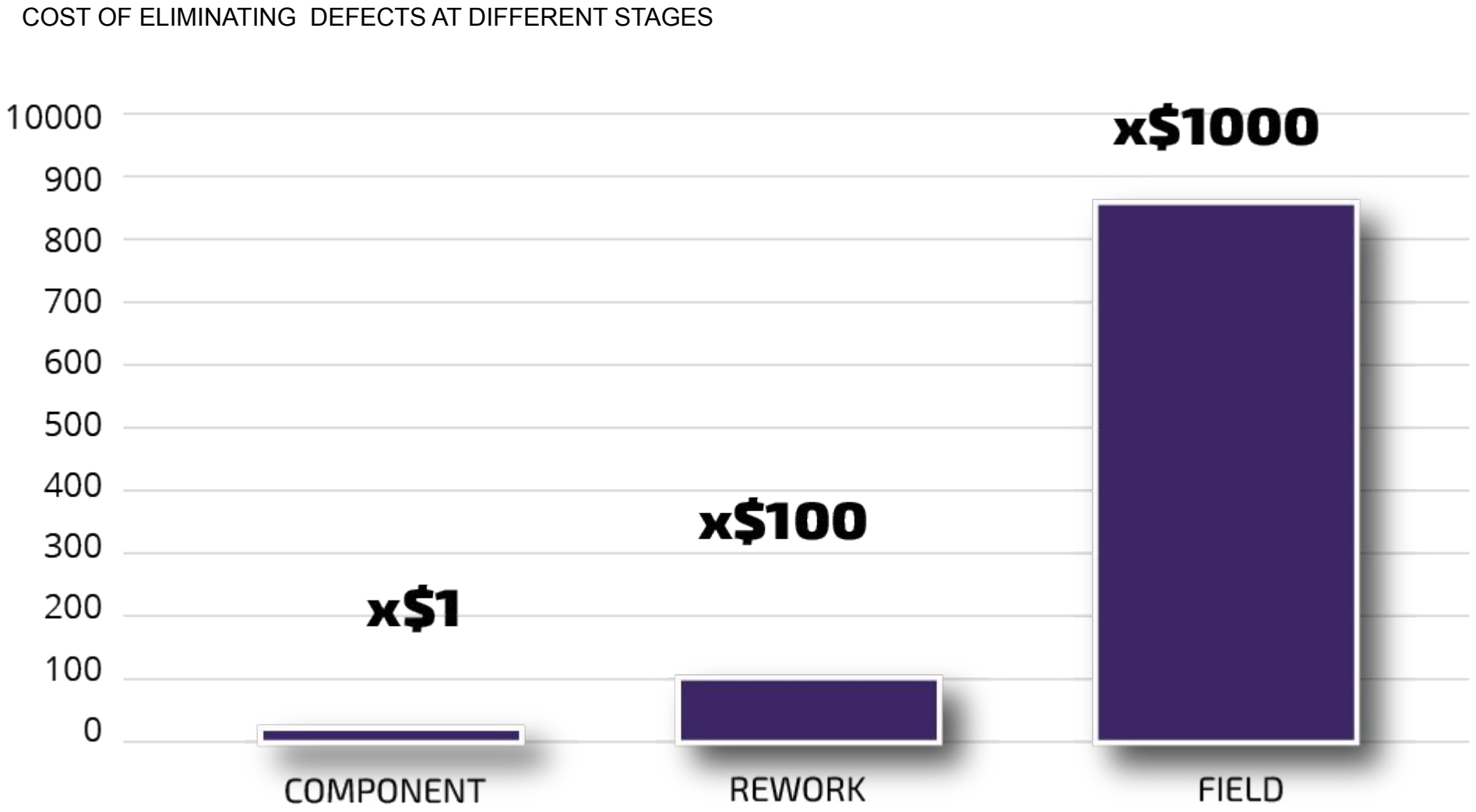
Materials Issues Implications



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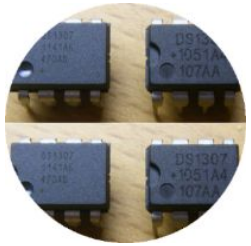
Examples For Unsafe Components

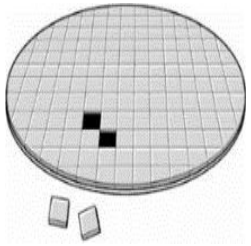
Counterfeit

RECYCLED



FAKE

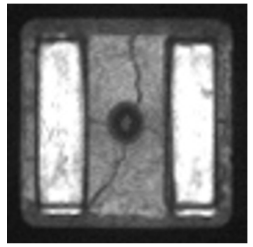
FORGED AGE



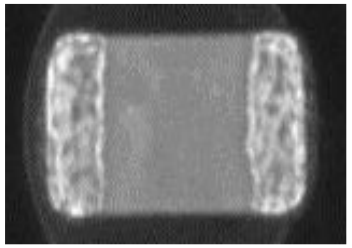
CLONED

Quality

DEFECTS

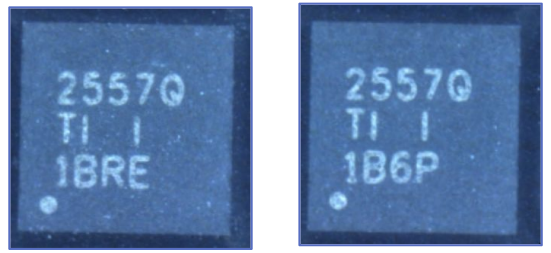


DAMAGED

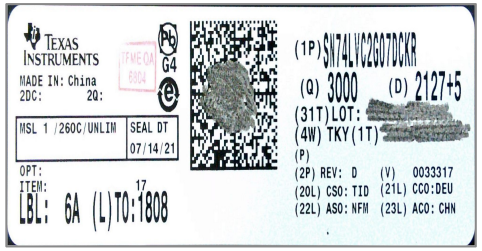


OXIDIZED LEADS

Marking / Documentation Errors



UNDOCUMENTED LOTS



PARTIAL DATA

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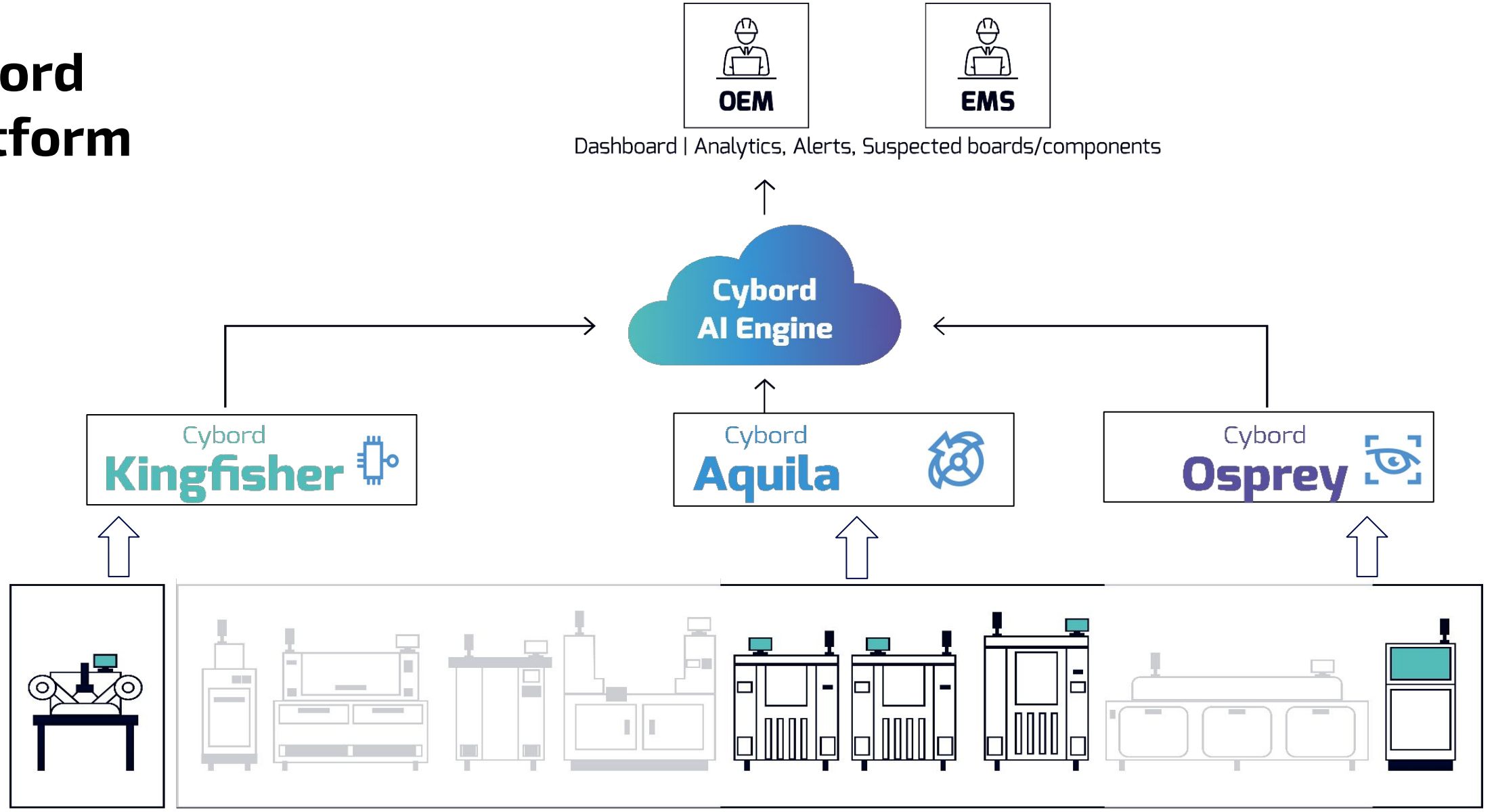
Cybord Platform



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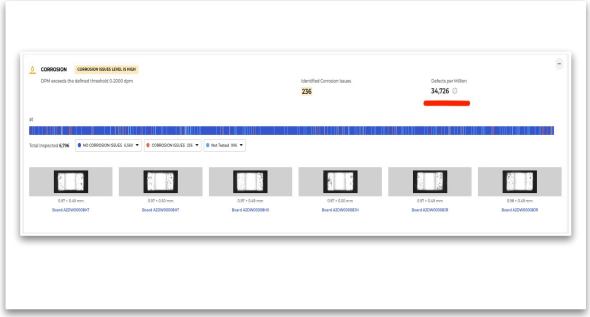
EMS Actionable Outcomes

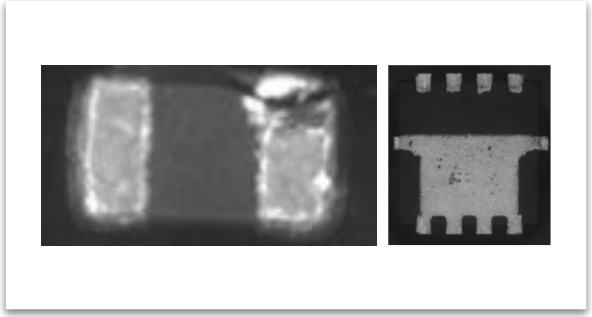
Remove / block contaminated Reels

Recognize
when a specific reel should be taken off the SMT line after analyzing a few components.



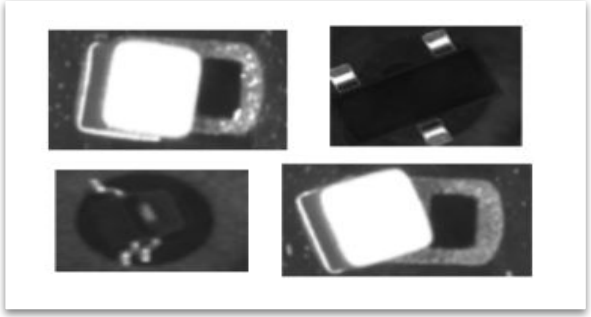
Flag faulty components on board

Identify
board issues in near real-time (1 minute) and raise alerts through the dashboard.



Improve process by feedback to EMS

Detect
bad pickups, overexposed and blurry images, and tombstone, helping operators to quickly address root cause.



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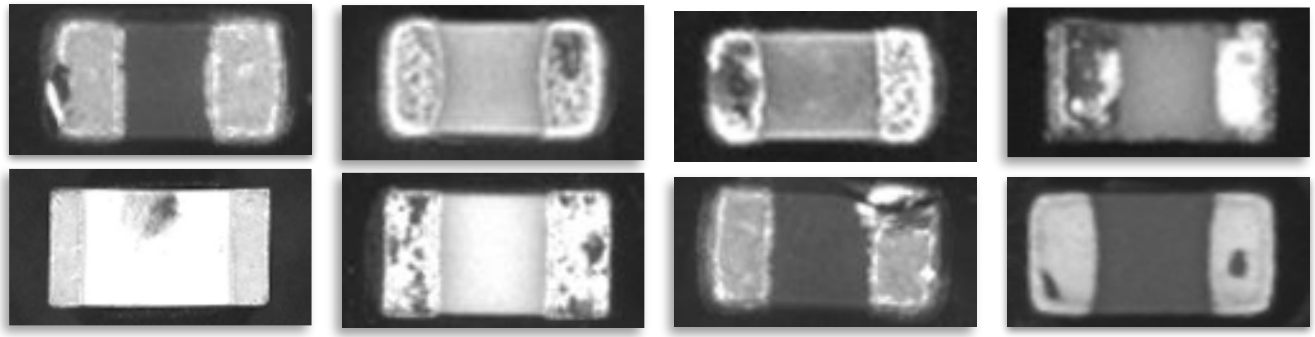
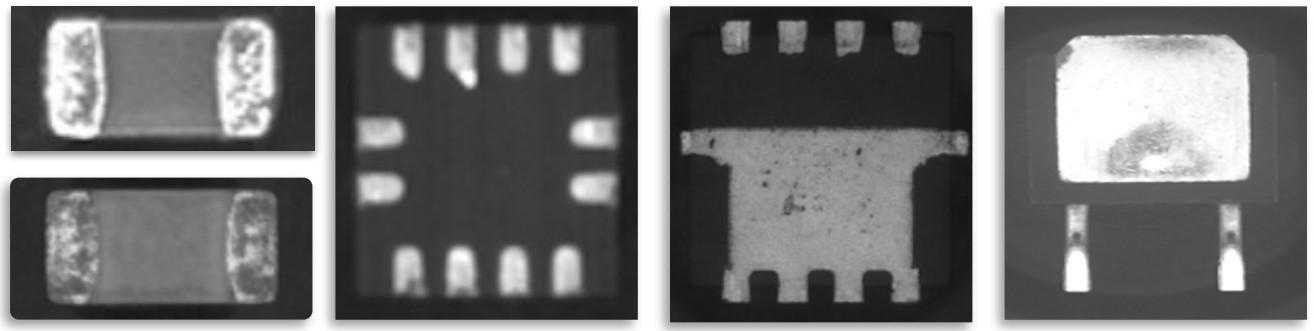
Material Failures

Material Issues

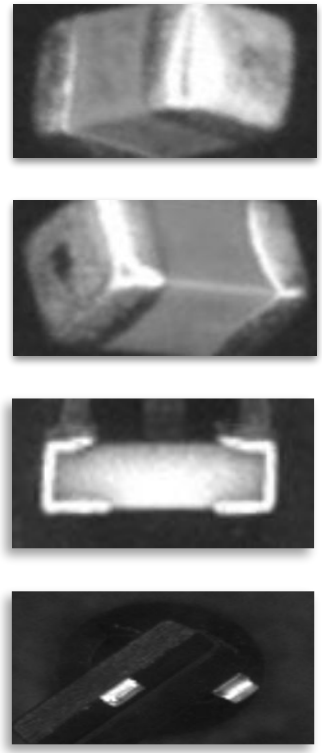


Body Defects



Corrosion/Mold

Process Issues



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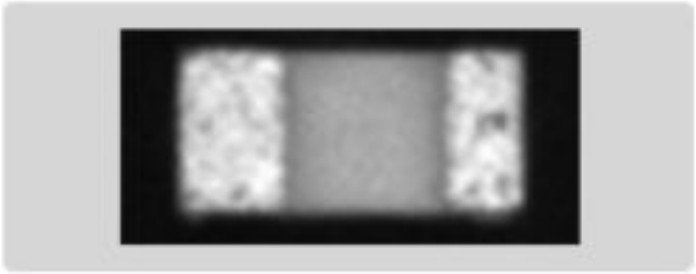
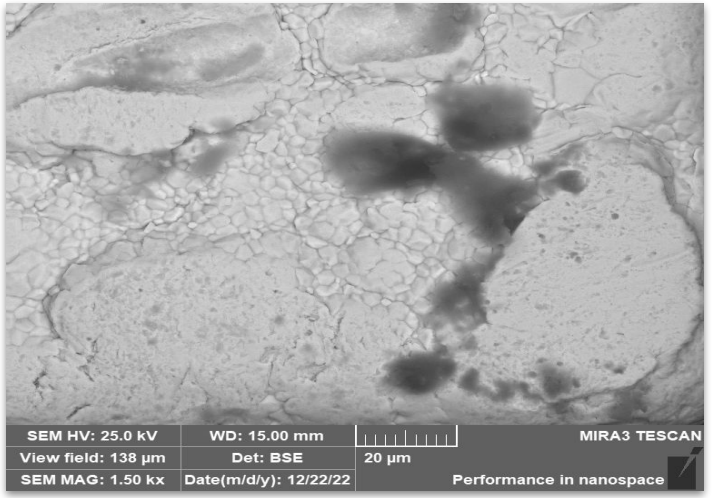
Case Study - Aluminum Oxide Contamination

A large OEM was alerted by the Cybord platform, indicating solderability risk on specific components. The OEM decided to verify the alert by performing SEM-EDX analysis using authorised lab. The results showed that aluminium oxide contaminant had been found.

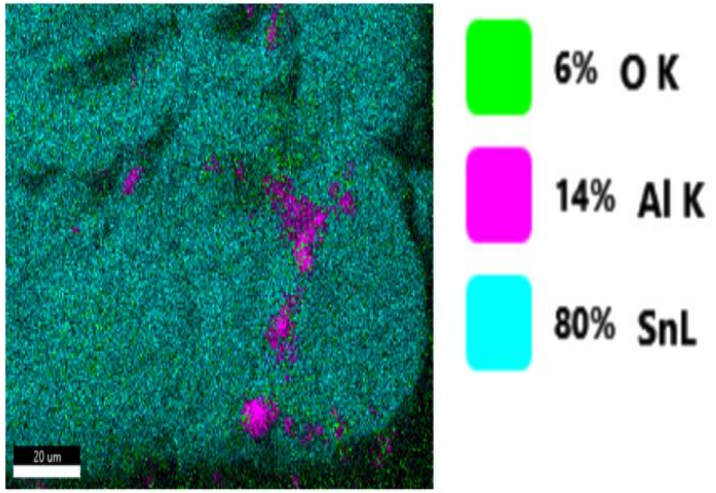
Cybord Alert



SEM result



EDX result



Conclusion: **OEM decided to disqualify all reels from the same batch.**

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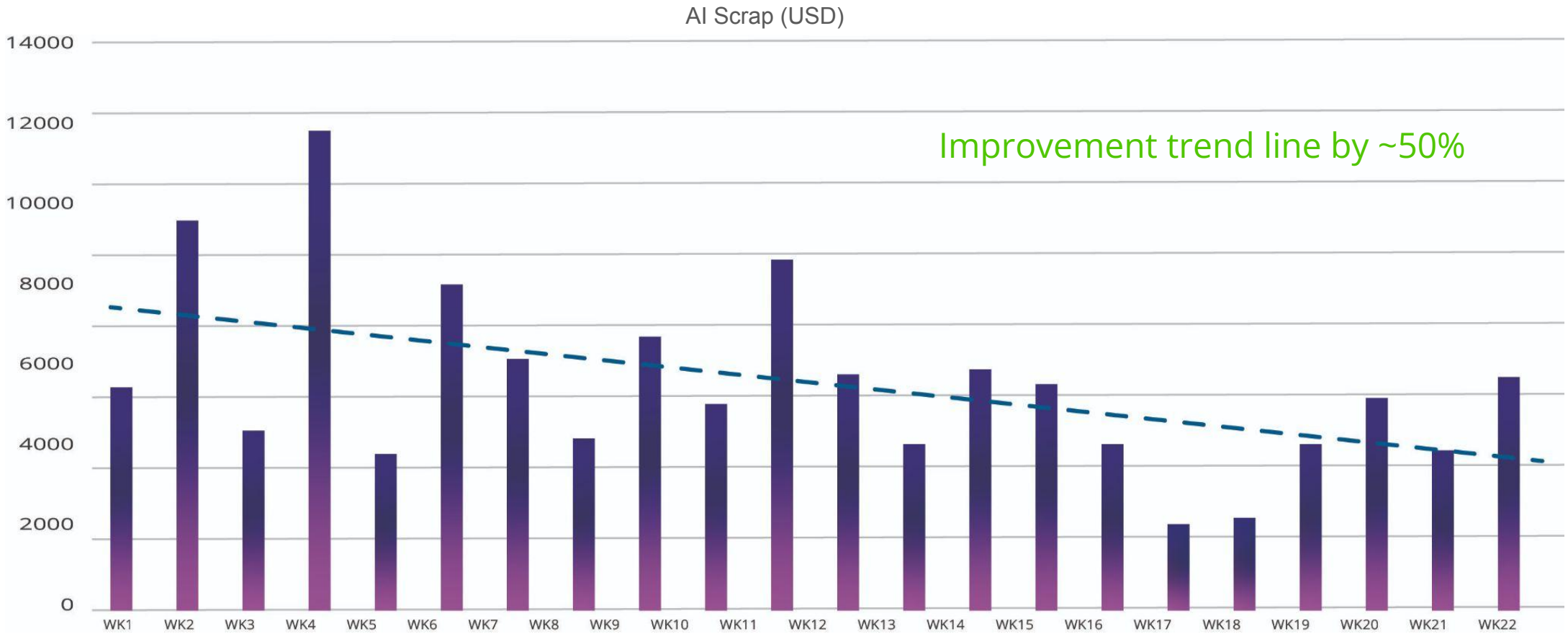
Case Study - Scrap Rate Reduction

A large EMS followed **Cybord set up alerts** for a period of 22 weeks.
The following shows the improvement in product scrap rate over this period:



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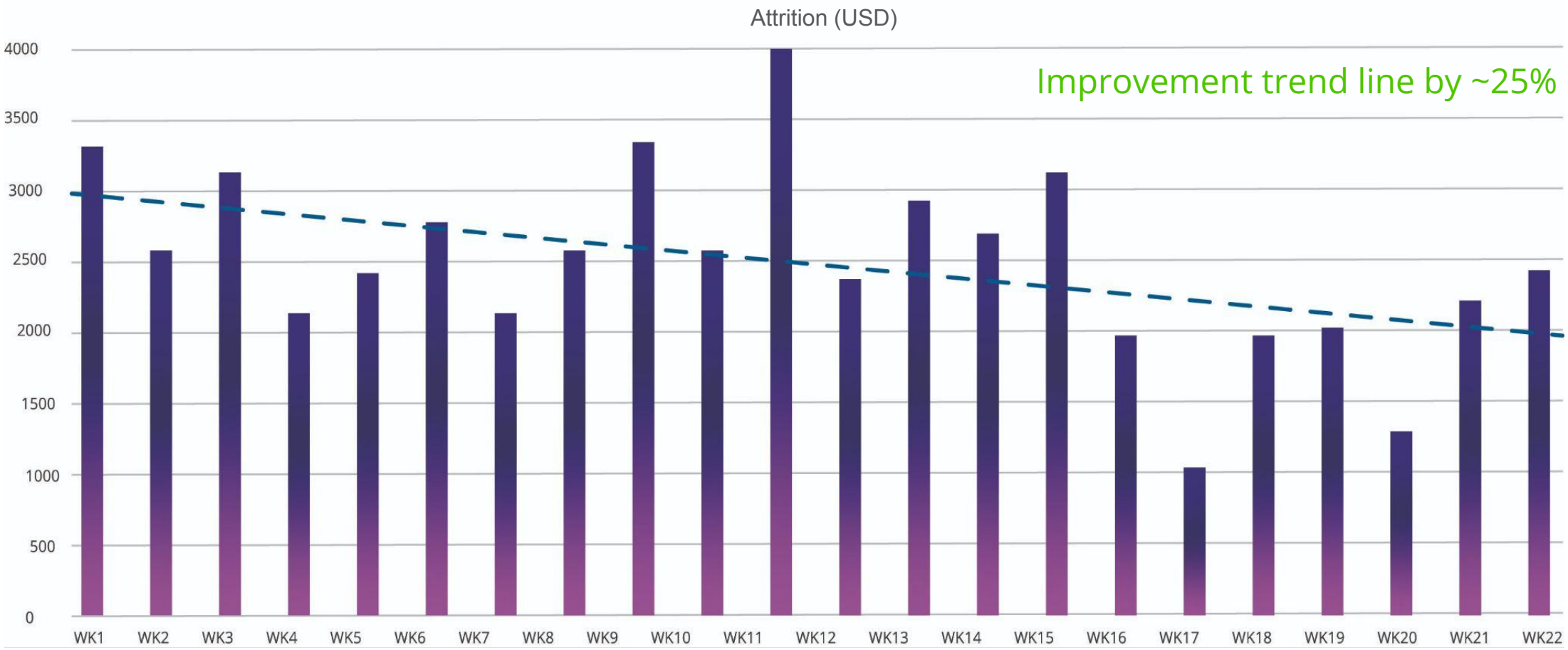
Case Study - Attrition Rate Reduction

A large EMS followed **Cybord vision issue alerts** for a period of 22 weeks.
The following shows the improvement in product attrition rate over this period:



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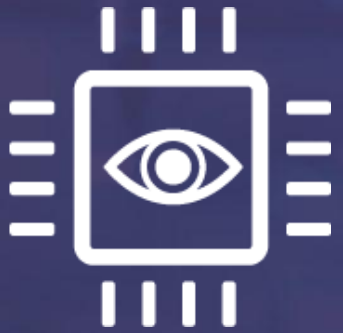
Cybord's platform allows its customers to join the new standard of analyzing electronic components based on images to enhance the quality and traceability of the electronics industry.

By using the Cybord platform, each component is inspected during the assembly process, and within less than a minute, the customer receives the whole story behind the component. Cybord platform provides surgical traceability by knowing the location of each component on every board.

THANK YOU

Cybord 

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Backup Slides

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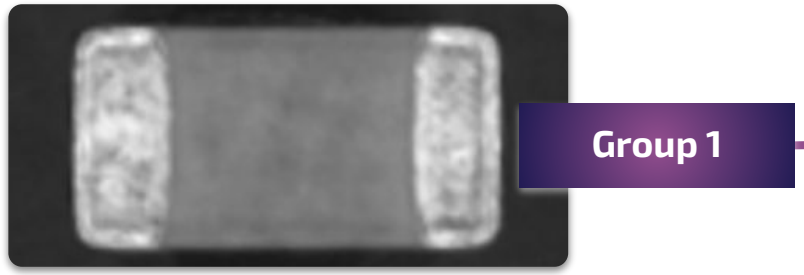
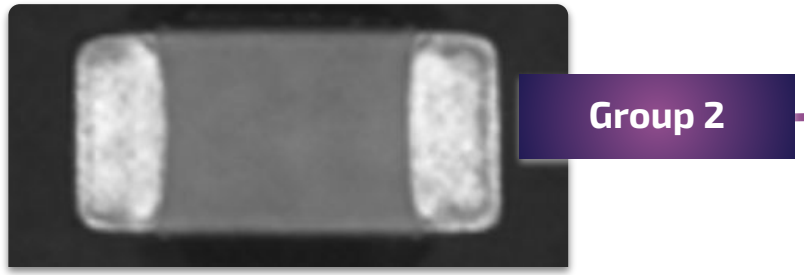
Homogeneity

Two Non-Homogenous groups in one reel

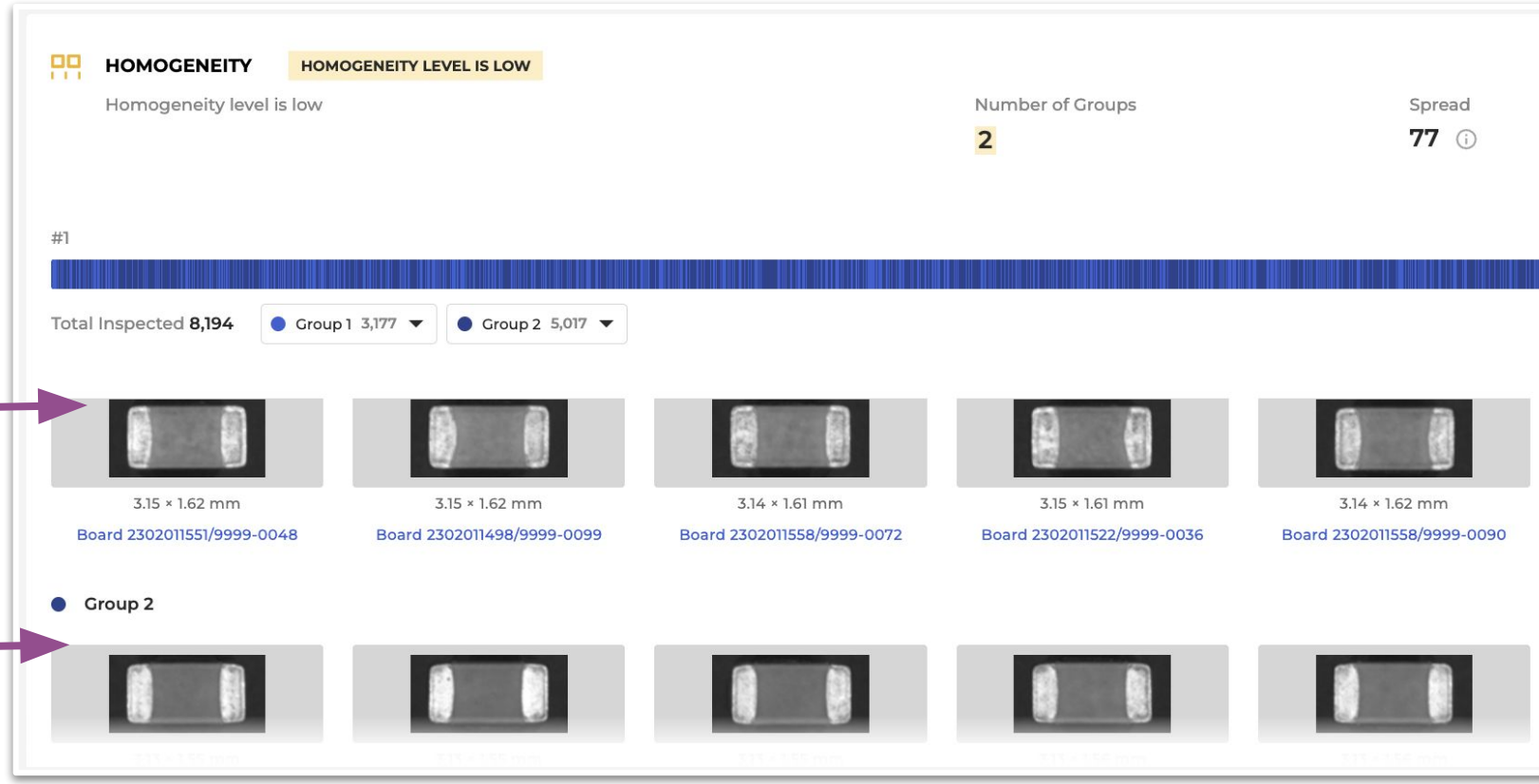
The platform raised an alert for two mixed groups in one reel during production.



Group 1



Group 2



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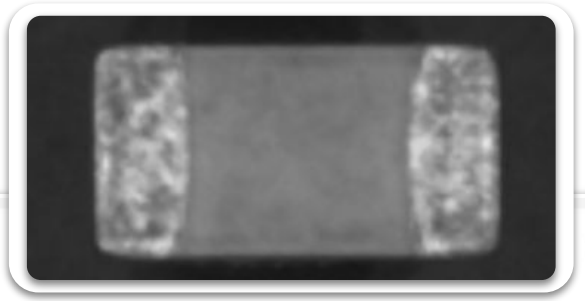
Corrosion

Corrosion contamination on pads

54 components at the end of the reel found with corrosion contaminations which will be implemented in product with low reliability



CORROSION CORROSION ISSUES LEVEL IS HIGH

DPM exceeds the defined threshold 0-2000 dpm

Identified Corrosion Issues
54

Defects per Million
6,590

#1

Total Inspected **8,194**

NO CORROSION ISSUES 8,140

CORROSION ISSUES 54

3.13 × 1.63 mm	3.11 × 1.61 mm	3.15 × 1.62 mm	3.14 × 1.63 mm	3.13 × 1.63 mm	3.13 × 1.60 mm
Board 2302011498/9999-0006	Board 2302011543/9999-0057	Board 2302011543/9999-0057	Board 2302011498/9999-0007	Board 2302011498/9999-0006	Board 2302011543/9999-0059

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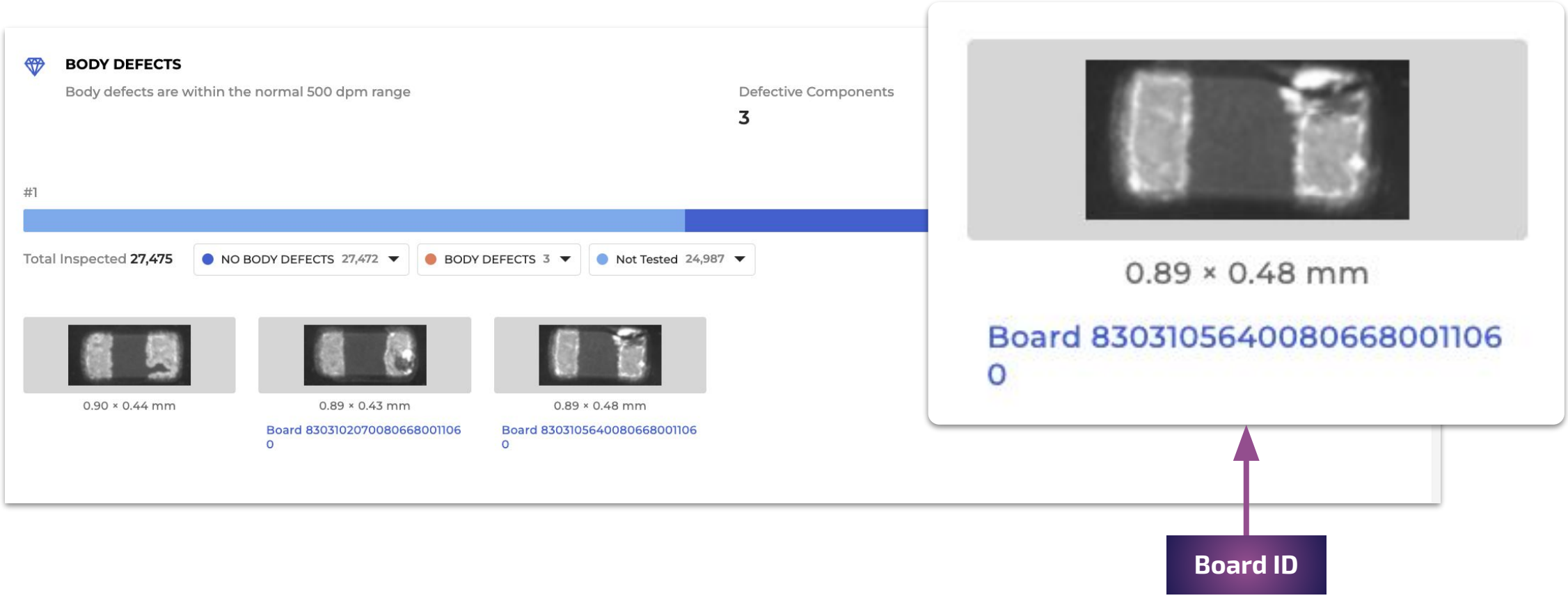
Body Defects

Body defects on boards

This specific component assembled on board.
In case it passed functional tests, it is in a live product, shipped to a customer



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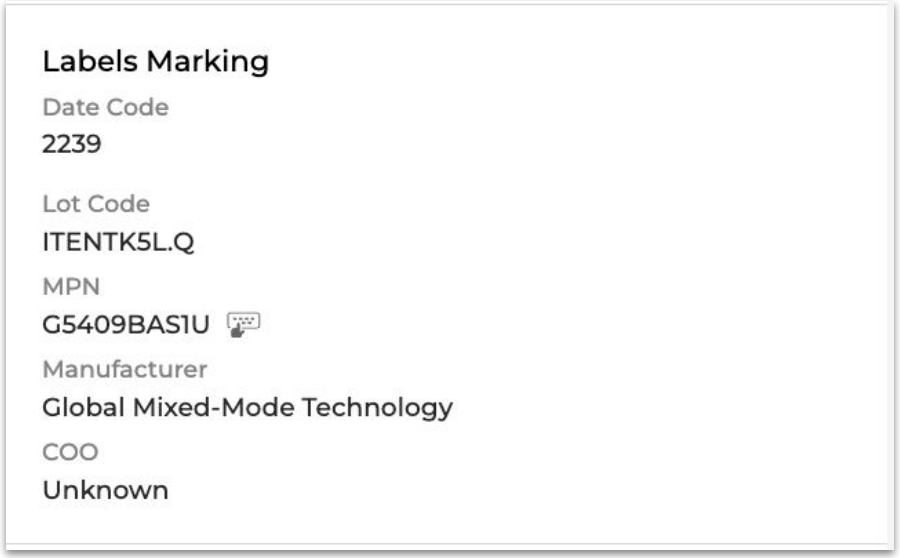
Authenticity

Component authenticity

Based on AI technology, the platform recognize if the component is authentic or not and raise an alert in case it is not match to the label details

Platform

Label



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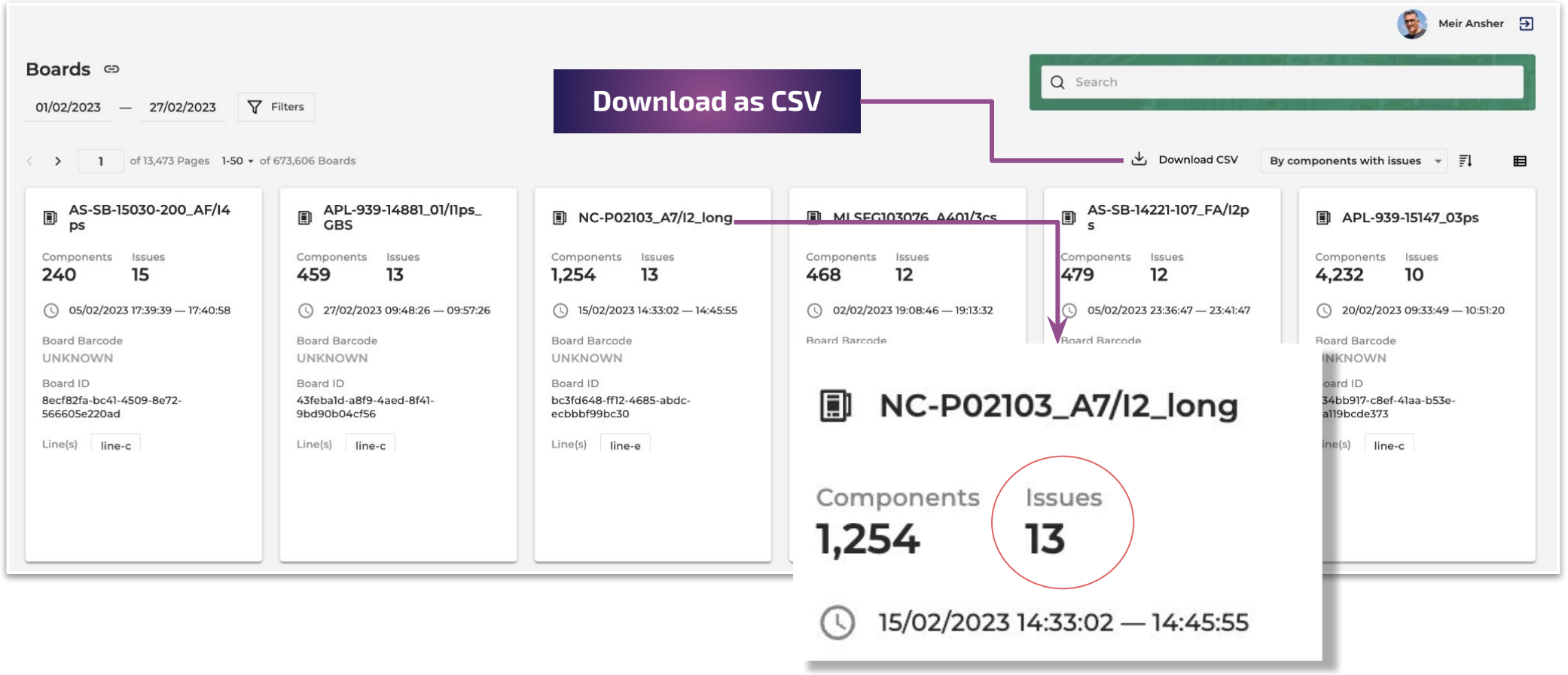
Boards View

Real-time boards view

During production the platform alert for boards with faulty component issues



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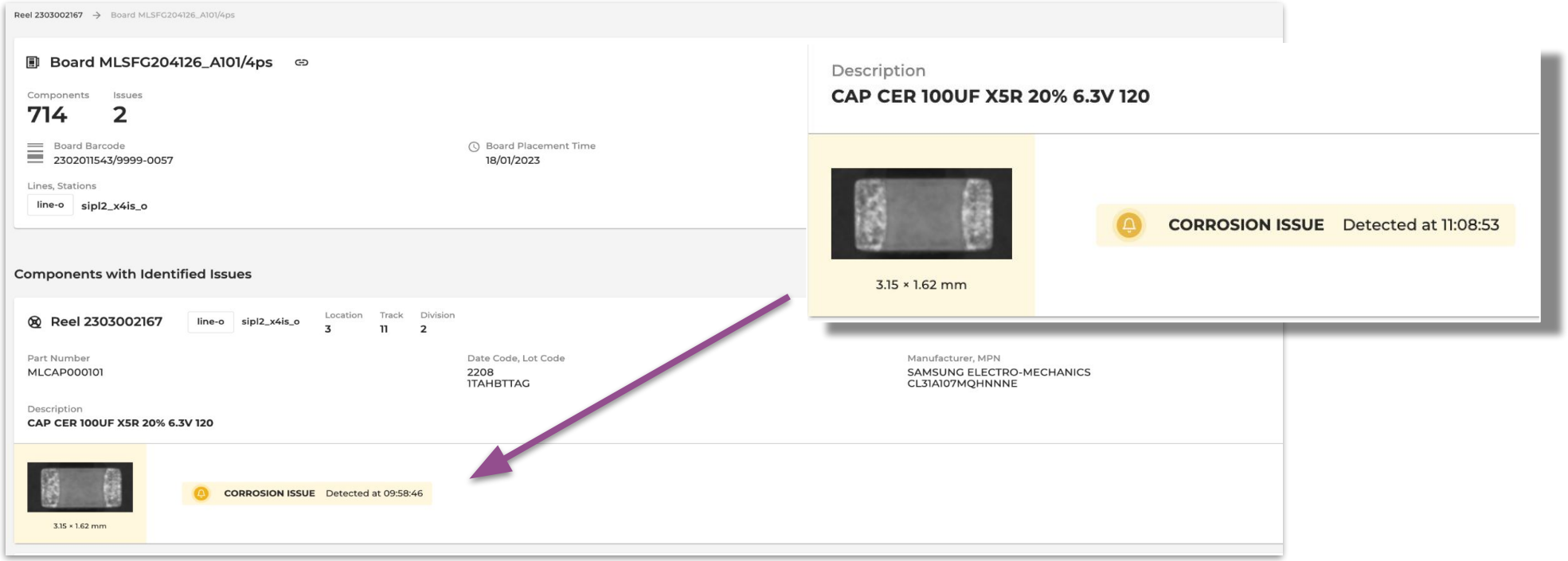
Board View

Each board analyzed including all components

During production the platform alert for boards with component issues



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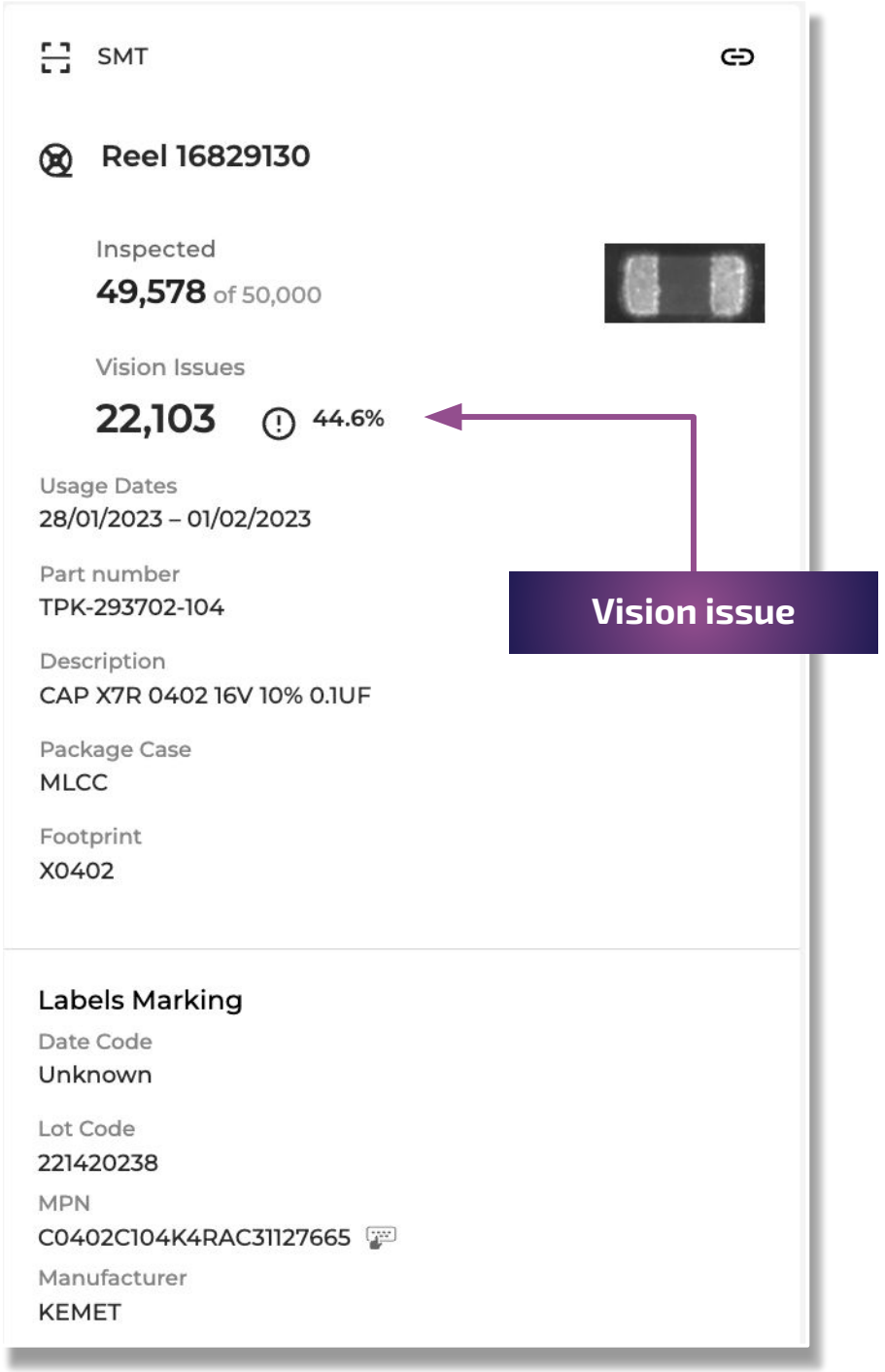
Machine Setup Issues

During production the platform alert on setup issues

Setup alerts includes vision issues, blurry images and bad pickups which allow the CM to fix issues in real time.