**Implement Edge AI & integrate** data from all **inspection tools** for **accelerated root cause analysis**

PDF / SOLUTIONS®

# exensio® Battery
# Defect Management & Edge AI

## Defect Management System

**A system to visualize and analyze inline defect data from all inspection & measurement systems**

Our **end-to-end analytics platform** is the first to implement **product traceability** to enable **tracing quality failures to inline defects**.

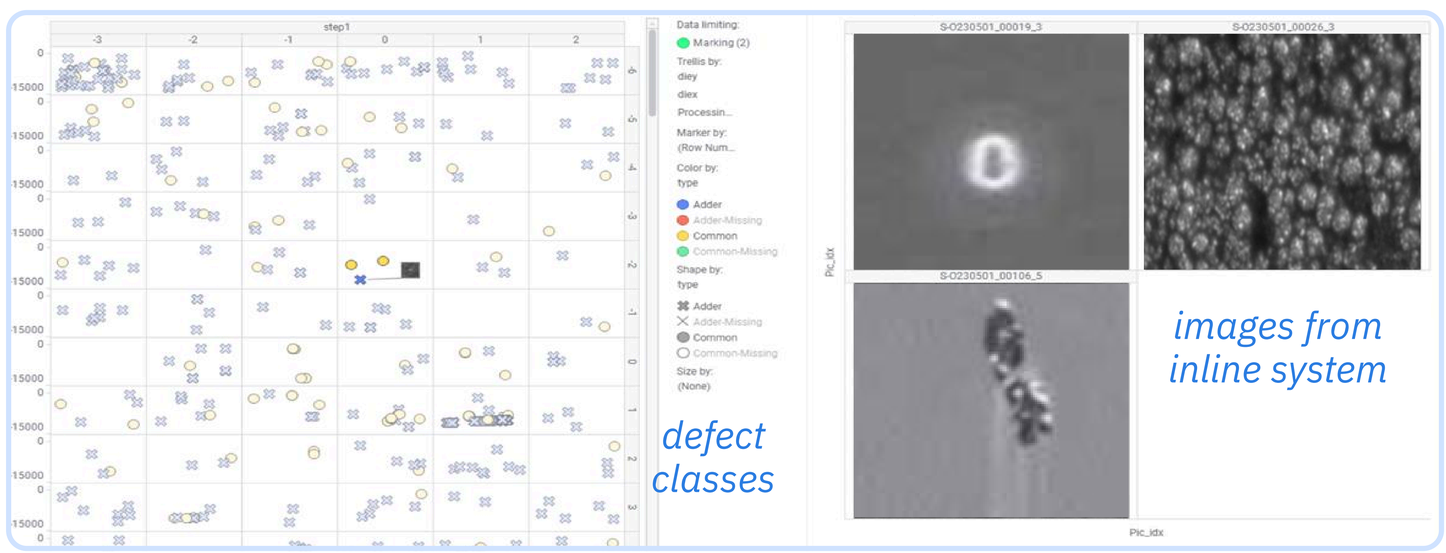
### Solutions Highlights

- Troubleshooting of low yields
- End-to-end yield and defect management
- Integration of all inline systems - system agnostic
- Defect binning and classification automation

## Components

### 1 Defect Map & Analysis

Defect data storage and analysis with mapping capability and alignment with other data types.

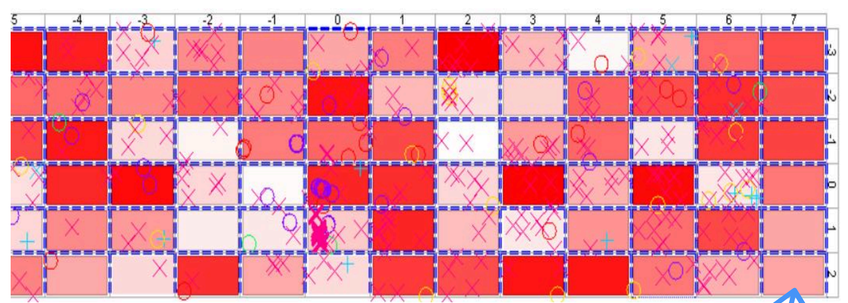



*electrode roll*

*defect classes*

*images from inline system*

*Includes visualization by **lot, cell, stacked roll, or single electrode roll***



*stacked roll with the red blocks being cells & different shapes being defects*

### 2 Defect Map Classification

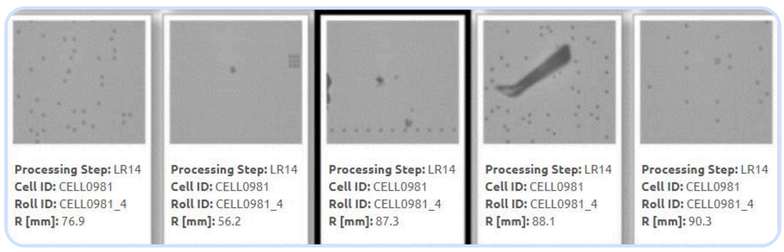
Classification of defects to group similar defects by type for Kill Rate and Capture Rate summaries

Common

Uncommon

### 3 Defect Map Gallery

Gallery of inspection and review images linked to inspection site




### 4 Online Integration With Client MES

Define Statistical Process Control (SPC) and Out-of-Control Action Plans (OCAP) and send alarms to the MES

PDF / SOLUTIONS®

# Combine inspection tool information all in one platform


*measurement examples*

- foil/electrode thickness
- coating roughness
- foreign particles

- electrode thickness
- peeling
- wrinkle inspection

- burr inspection
- dimensional measurements
- blade condition

- delamination
- alignment
- tab bending defects
- tab, tape position
- welding analysis/defects
- hi-pot rejects

- lid welding position alignment
- can crimp profile, diameter
- can edge defect inspection
- e-fill leakage inspection
- electrolyte mass

- voltage
- capacity
- ACIR, DCIR

- shrink wrap inspection
- can surface inspection
- x-ray
- dimensional measurements

exensio™ ®

**Defect Management System**

***Workflow/Application Examples***

- Reclassification of defects
- Defect traceability for yield diagnostics
- Defect source analysis
- Equipment / recipe matching
- Design-aware defect management

# Edge AI

**Quasi real time deep learning model for instance segmentation, allowing you to classify and measure defects during production.**

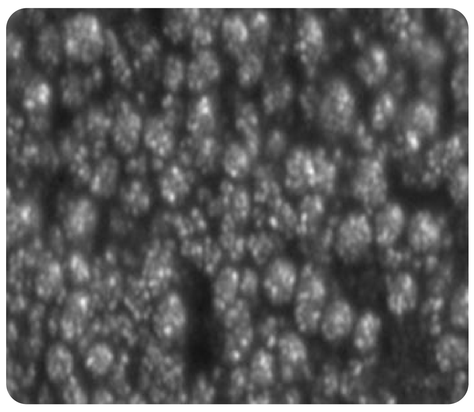
Enhance your inline vision systems through the power of AI.

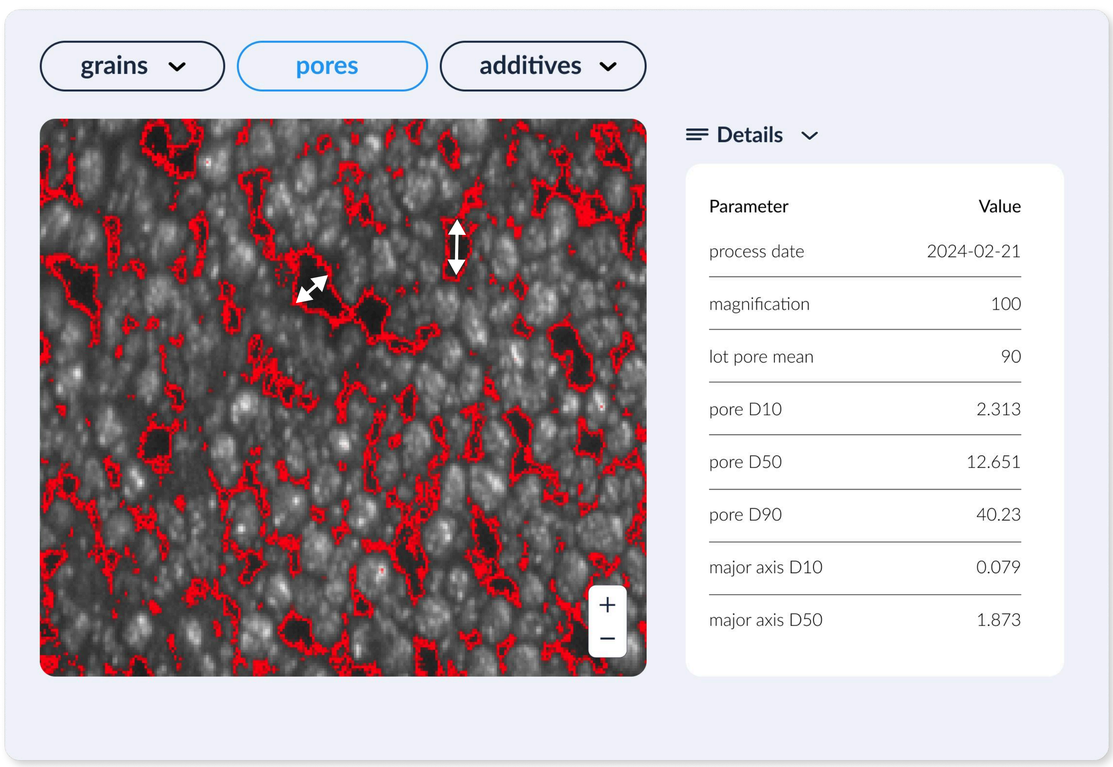
***How it works***

**1** PDF / SOLUTIONS™
Images from camera/sensor/vision system from PDF or other suppliers

**2** PDF / SOLUTIONS™
inference engine equipped with deep learning model

**3** PDF / SOLUTIONS™
defect classification & measurement for actionable insights






## Contact Us

**Corporate Headquarters**
PDF Solutions, Inc. 2858 De La Cruz Blvd Santa Clara, CA 95050 USA

www.pdf.com +1-408-280-7900