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Assembly Operations

Data Connectivity, Traceability, Control and Analytics for Assembly in Electronics Manufacturing

Overview

Exensio™ Assembly Operations is one of the four primary modules of the Exensio™ Analytics Platform, and provides SEMI E142 traceability at the single device level through advanced packaging and PCB assembly and does not require any electronic identifiers (ECIDs). This traceability capability enables feed-forward control and feed-backward failure analysis across the product lifecycle.

Assembly Operations is a highly configurable application and can connect with equipment on the factory floor in real-time or be set up as a gateway to collect data from files in a standards-based format.

Full Integration with Exensio™ Manufacturing Analytics

The database in Assembly Operations is integrated with Exensio™ Manufacturing Analytics to enable forward and backward search of the manufacturing and test data, filtered at the single device level, from any starting point in the supply chain.

Analytics on this filtered data enables Engineers and Management to ramp product yield, improve outgoing quality and provide rapid and precise root cause analysis for RMA across a geographically diverse manufacturing supply chain.

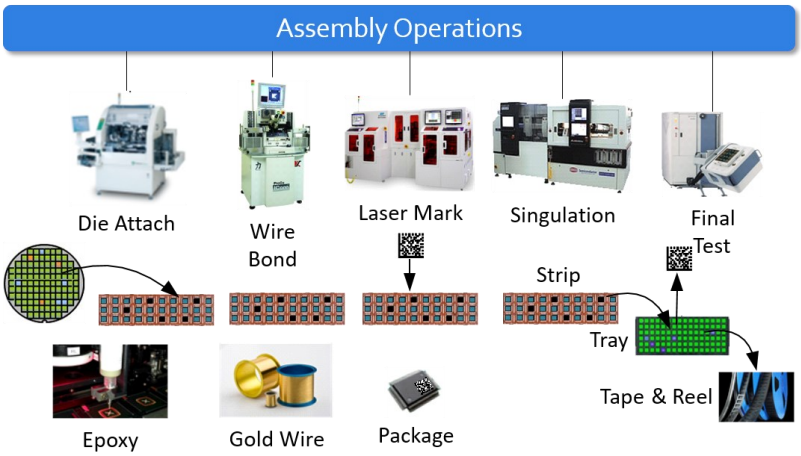
Automated Data Collection and Management

Assembly Operations imports wafer maps from wafer sort and collects data from assembly and packaging equipment. The data format in Assembly Operations is based on SEMI standards E40, E90, E120 and E142. The data collected is automatically and continuously streamed to Exensio™ Manufacturing Analytics for traceability and yield analytics.

Product Highlights

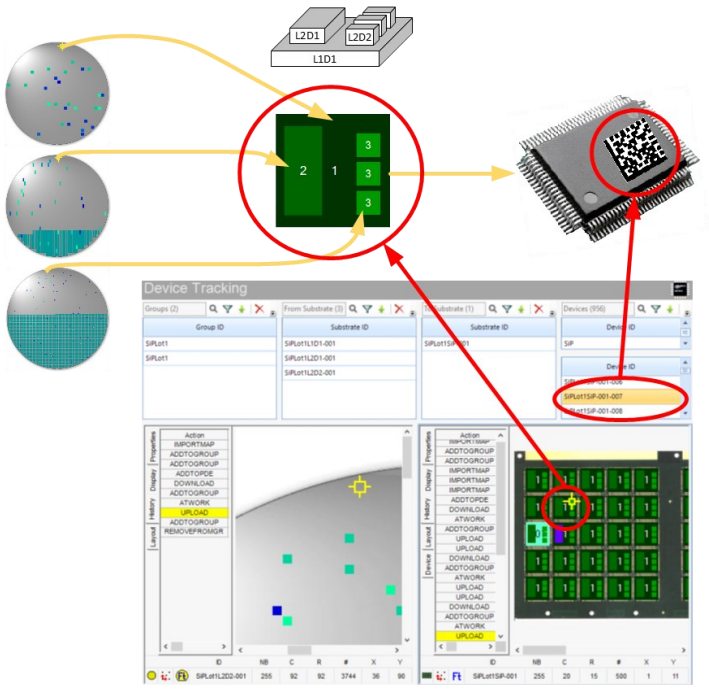
- Fully supports the SEMI E142 standard
- Integrated with Exensio™ Manufacturing Analytics (no data wrangling)
- Up to 5x faster RMA response & root cause analysis
- Up to 10x reduction in recall volume
- Device matching in assembly and final test without ECIDs
- Reduce yield loss by up to 10%
- Bin code map management and editing
- Integration with virtually any equipment via SECS GEM and Cimetrix™ Sapience
- Flexible, standards-based data import in any format

Exensio™ Assembly Operations



Assembly Process and Quality Control

Assembly Operations can be configured for any process flow and bin code definitions so that defects can be tracked and passed forward to prevent further costly processing. User-defined rules can be applied to prevent misprocessing errors such as lot mixing.



Assembly and Packaging Analytics

Assembly Operations shares the same powerful backend data store options and user interface as the Manufacturing Analytics module. Standard assembly, test and operational analytics are just the start. End users can freely modify, enhance and/or develop their own analytic content and reports.

Deployment Worldwide

Assembly Operations supports a broad range of current and legacy tools used in assembly and packaging, and can be deployed to both internal and outsourced test facilities.

Benefits for Cost & Quality

Capability	Cost	Quality
Defect Tracking	✓	
Yield Ramp	✓	✓
Yield Optimization	✓	
RMA Response and Early Life Failure Prediction		✓
Equipment Efficiency (OEE)	✓	
Advanced Assembly Control	✓	✓
Single Device Data for Machine Learning	✓	
Real-time Data Collection at Tool		✓

Additional Modules in the Exensio™ Platform

- Process Control
- Test Operations
- Manufacturing Analytics

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