# Optel SOFTWARE

Continuous Quality and Process Improvements

Imagine achieving the level of quality, process control, traceability and reporting needed to win and retain business from highly demanding clients, as well as drive continuous process improvement. Optel delivers the capabilities needed to achieve these goals, thereby enabling you to realize key customer-facing benefits:

- Increased brand quality perception

- Narrowing of the recall envelope; significant reduction in recall and warranty costs and potential legal risks
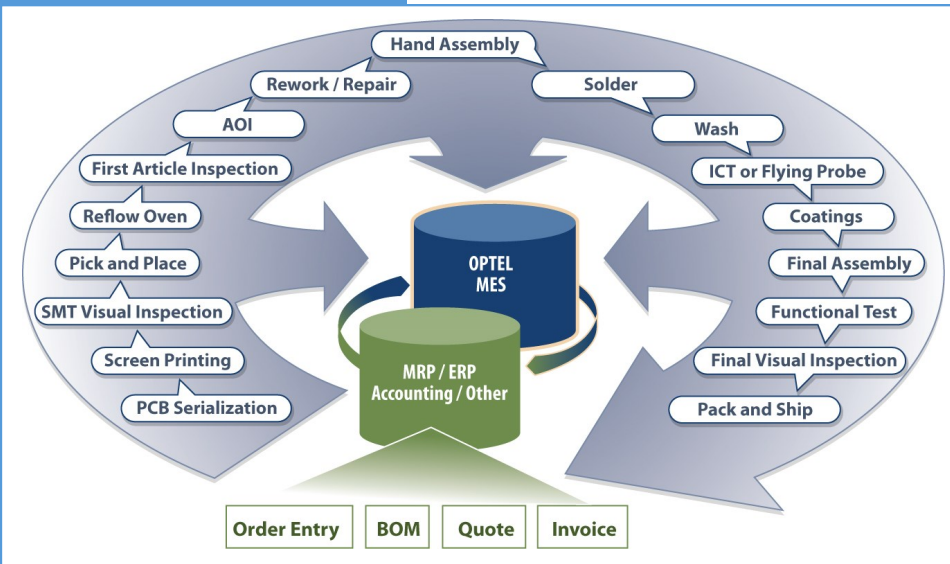
- Maximized product value due to achievement of quality standard certifications

- Improved customer satisfaction and retention through better quality and more accurate delivery date estimates

Quality Management and Process Traceability

Today's OEMs and Contract Manufacturers face mounting challenges in meeting growing customer demand for greater product diversity, incorporating lean manufacturing standards and new environmental requirements, and managing supply chain issues – all while maintaining rock solid product reliability. To remain competitive, companies must find new ways of optimizing the production operation, in real-time, to maximize productivity, efficiency and product quality, and ultimately, achieve key business goals and increase profit margins.

Capabilities Overview

One of the major challenges impacting the electronics assembly process is the ever-increasing need for greater quality, process control, and traceability to meet changing customer requirements and expectations. Managing these complexities demands a more automated and cost-effective approach for accommodating the variations in the production process required by different assemblies, while maximizing production efficiency and yield, and minimizing human intervention and production cost.

Optimal Electronics' powerful Optel Manufacturing Execution System (MES) offers comprehensive capabilities for automating process traceability and quality management at the circuit assembly level, by interfacing directly with a variety of process machines, yet providing the flexibility to manage an unlimited number of manual processes.

Optel's Quality Management Module provides quality traceability data, statistical process control, test data and defect logging, and reporting. Optel's quality management tools provide the ability to capture and manage defects, repairs, testing, DPMO and yield data for circuit assemblies, to the serial number level, for management, supervisors and customer reporting.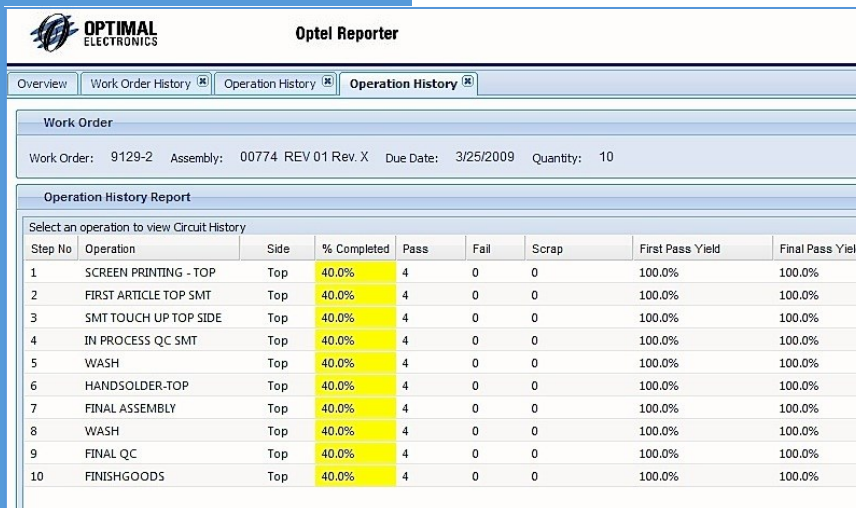 The Optel Process Traceability and Enforcement Module incorporates the entire electronics assembly process – from panel serialization, circuit assembly, hand placement, box build, rework, and testing to shipment. This module provides process definition and control, multi-level routing, full traceability and data collection from each of the process steps across the entire production facility.

With Optel's innovative approach to quality management and traceability, plant managers can take production process enforcement and control to the next level, with consistent, real-time tracking, monitoring and measurement of production quality and yield.

Quality Management: Optel's Quality Management Module permits automated and manual collection of defect information, defect code management, yield calculations, first article inspection data, alarms, and detailed reporting at the circuit level for all steps in the manufacturing process. This module automates control, quality assurance, and data collection for machines such as screen printers, ovens, AOI, flying probe machines, ICT, customer specific test systems, and from hand-testing locations.

Capabilities are provided for capturing defect inputs from quality inspections and repair, and for defect tracking. Defect input parameters can include status, defect type, part number, reference designator, operation step, quantity, time, and placement. Yield data can be collected and displayed for post-reflow visual inspection operations. Yield results can be viewed by work order, assembly part number and revision, and can provide statistics for total assemblies, passed, failed, scrapped, balance, and yield percent. Support for first article inspection includes details for each component part number, package, manufacturing install operations, quantity and graphical board location diagrams. Repair, rework and RMA are also supported.

Optel Reporter

Overview | Work Order History | Operation History | **Operation History**

Work Order

Work Order: 9129-2   Assembly: 00774 REV 01 Rev. X   Due Date: 3/25/2009   Quantity: 10

Operation History Report

Select an operation to view Circuit History

Step No	Operation	Side	% Completed	Pass	Fail	Scrap	First Pass Yield	Final Pass Yield
1	SCREEN PRINTING - TOP	Top	40.0%	4	0	0	100.0%	100.0%
2	FIRST ARTICLE TOP SMT	Top	40.0%	4	0	0	100.0%	100.0%
3	SMT TOUCH UP TOP SIDE	Top	40.0%	4	0	0	100.0%	100.0%
4	IN PROCESS QC SMT	Top	40.0%	4	0	0	100.0%	100.0%
5	WASH	Top	40.0%	4	0	0	100.0%	100.0%
6	HANDSOLDER-TOP	Top	40.0%	4	0	0	100.0%	100.0%
7	FINAL ASSEMBLY	Top	40.0%	4	0	0	100.0%	100.0%
8	WASH	Top	40.0%	4	0	0	100.0%	100.0%
9	FINAL QC	Top	40.0%	4	0	0	100.0%	100.0%
10	FINISHGOODS	Top	40.0%	4	0	0	100.0%	100.0%

With Optel's real-time visibility, you gain greater control and management insight for better planning, decision-making and execution across every aspect of the production process.

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Process Control and Traceability: With Optel's Process Traceability and Enforcement Module, process routings and data collection are automatically controlled at the serialized circuit level, throughout the production process via handheld scanners, fixed location scanners, and machine interfaces. Circuit assembly serial numbers can be scanned at various data collection points, from the screen printer through shipping, to ensure accurate and automated recording of every process step.

Optel delivers complete control with custom routings for different types of customer jobs, or by work order (down to the panel side) which allows manufacturers to ensure process compliance. Three levels of process enforcement are available for configuration, depending on the specific need for production process control. Electronic work order job travelers are available online, in real time, via Optel's centralized database, which eliminates the potential loss or misplacement of paper job travelers and provides a permanent record for customer proof-of-process requests.

Quality Management and Process Traceability Benefits

- Comprehensive process control – ability to reign in out-of-control processes
- Integrated management, control and reporting via Optel's centralized database
- Increased customer satisfaction due more accurate order completion time estimates
- Reduction in DPMO, significant increases in production yield and product quality
- Process and quality traceability for each circuit assembly serial number
- Automated capturing of genealogy data for routing process steps, components, moisture sensitive materials, repairs, defects, cycle times, yield and machine performance – captured to the assembly board serial number level
- Achievement of quality standards for certifications, including:
  - ISO 13485:2003 Medical Devices – Quality Management Systems – Requirements for Regulatory Purposes
  - FDA Department of Health and Human Services 21 CFR Part 11 Electronic Records; Electronic Signatures