

# Opcenter Intelligence Electronics

## Improve asset management with real-time utilization and overall equipment effectiveness

### Benefits

- Improves asset management with accurate, real-time utilization and overall equipment effectiveness
- Helps capture and investigate complete material and process traceability data for printed circuit boards (PCB) and assemblies using big-data, high-availability storage
- Optimizes operation and labor by measuring and analyzing how resources are spent, and tracks work-in-progress (WIP) in real-time
- Ensures quality and drives continuous improvement by identifying and analyzing process defects and material and process failures
- Increases design-to-manufacturing efficiency using advanced analytics and alerts to detect factors that affect yield and processes and require improvement
- Ensures quality and drives improvement with multi-site big data analytics

### Summary

Opcenter™ Intelligence Electronics software is specifically designed for printed circuit board (PCB) manufacturing and provides industry executives, line managers and manufacturing engineers with the information they need to deliver quality products on time. With Opcenter Intelligence Electronics, you can quickly and intuitively eliminate waste while improving asset utilization, first-pass yield and defects per million opportunities (DPMO).

Opcenter Intelligence Electronics provides access to rich data sources from the system's shop-floor modules and then aggregates the data for use in high-value intelligence applications, maintaining a tight integration with other Siemens Digital Industries Software factory solutions. Opcenter Intelligence Electronics includes information on all manufacturing sites and lines, machine performance and utilization. Calculated overall equipment effectiveness (OEE) dashboards, drill-down capabilities and trend analysis are also provided. Dashboards, alerts and automated reports provide performance, material, quality and traceability analytics.

### Capabilities

#### Improve order fulfillment

With Opcenter Intelligence Electronics, you can easily monitor and track each customer's work order as the product moves through the factory while tracking



Figure 1: View and drill down to access real-time smart data, including enterprise resource data (ERP) data integrated with manufacturing KPIs such as yield, WIP value, inventory turnover and waste costs.

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the current delivery status against the due date. This allows you to identify bottlenecks in the production flow and share the web-based reports in a secure environment.

## Increase manufacturing process quality

Make rich key performance indicator (KPI) calculations such as yield, first pass yield (FPY), no fault found (NFF), defects and DPMO at each process inspection or test station, regardless of the mix of printed circuit assembly models in production. Trend analysis and decision support is also available to help determine root causes and make informed decisions. You can instantly trigger customizable alerts (pop-up, email, mobile, etc.) and automatically generate quality reports at user-defined intervals to immediately correct problems. Measurement out of the box (OOTB) reports and dashboards on test results include pass/fail data and are tightly integrated with a powerful analytic model for advanced calculations, measuring manufacturing process performance and quality. Using reports from Opcenter Intelligence Electronics reduces the time and resources spent on troubleshooting and identifying problems.

## Instant traceability reports

Opcenter Intelligence Electronics helps achieve full PCB and assembly traceability, including materials, process data, test results and repair measurements in a full assembly genealogy. Comply with customer requirements by setting up an automated report for traceability, based on the PCB ID number or component lot code/date code/reel ID. This minimizes recall exposure, limiting it to the affected product.



Figure 2: Opcenter Intelligence Electronics is a big-data, business-intelligence analytic platform for high-performance manufacturing. It provides greater visibility into equipment, products and supply-chain performance, easily identifying and monitoring production and supplier issues, preventing costly recalls, spotting emerging trends and solving quality problems faster than ever before.

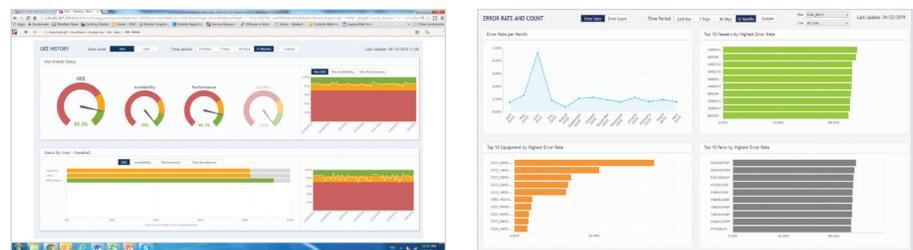


Figure 3: With reports provided by Opcenter Intelligence Electronics, you can reduce the time and resources spent on troubleshooting and incorrectly identifying problems.

Operation Type	Equipment	Quantity	Created Date	Created By	Status	Serial Number	Event Number	Event Category	Event Type	Component	Repair
Assembly	Assembly	1	2019-01-01 10:00:00	John	OK	1234567890	1	Assembly	OK	PCB	OK
Assembly	Assembly	1	2019-01-01 10:00:00	John	OK	1234567890	1	Assembly	OK	PCB	OK
Assembly	Assembly	1	2019-01-01 10:00:00	John	OK	1234567890	1	Assembly	OK	PCB	OK
Assembly	Assembly	1	2019-01-01 10:00:00	John	OK	1234567890	1	Assembly	OK	PCB	OK
Assembly	Assembly	1	2019-01-01 10:00:00	John	OK	1234567890	1	Assembly	OK	PCB	OK
Assembly	Assembly	1	2019-01-01 10:00:00	John	OK	1234567890	1	Assembly	OK	PCB	OK
Assembly	Assembly	1	2019-01-01 10:00:00	John	OK	1234567890	1	Assembly	OK	PCB	OK
Assembly	Assembly	1	2019-01-01 10:00:00	John	OK	1234567890	1	Assembly	OK	PCB	OK
Assembly	Assembly	1	2019-01-01 10:00:00	John	OK	1234567890	1	Assembly	OK	PCB	OK
Assembly	Assembly	1	2019-01-01 10:00:00	John	OK	1234567890	1	Assembly	OK	PCB	OK

Figure 4: Opcenter Intelligence Electronics helps achieve full PCB and assembly traceability, including materials, process data, tests results and repairs measurement data, in a full assembly hierarchical story.

Reports are based on three specific data streams: asset utilization (based on machine performance data), materials (traceability, consumption, and waste) and quality (based on results from automated test, inspection, repair stations and WIP points). The feedback provided in the reports is critical to implement process improvements that enhance product value.

These reports can be used to compare the quality of materials provided for each component reference designator on the PCB assembly. Complex reports are generated quickly by preprocessing data in data warehouse online analytical processing (OLAP) cubes, making the information accessible on demand.

### Advanced analytic capabilities

Opcenter Intelligence Electronics leverages an advanced micro-strategy analytic platform to provide a sophisticated yet simple way to instantaneously generate and analyze large amounts of data. When drilling for insights, you get an intuitive display of results using graphs and detailed textual search results. Individual rows can be selected for further investigation and analysis and each drill-down brings you closer to a true understanding of the data's implications.

### Information sharing options

Opcenter Intelligence Electronics enables data and reports to be shared securely inside the organization and beyond. Accessibility capabilities and options include:

- **Global sharing** – With multi-site big data analytics, all reports and dashboards can be saved and easily shared with others. Suppliers and manufacturing managers to engineering and customer service can use this business intelligence to improve products and performance.
- **Secure supplier** – Opcenter Intelligence Electronics provides secure supplier access, allowing original equipment manufacturers (OEMs) to have visibility into all manufacturing data, WIP traceability and quality results.
- **Enterprise solution** – A multi-site data collection and consolidation option is available, with corporate-level reporting and site drill-down capabilities.

Opcenter is part of Xcelerator, a comprehensive and integrated portfolio of software and services from Siemens Digital Industries Software.

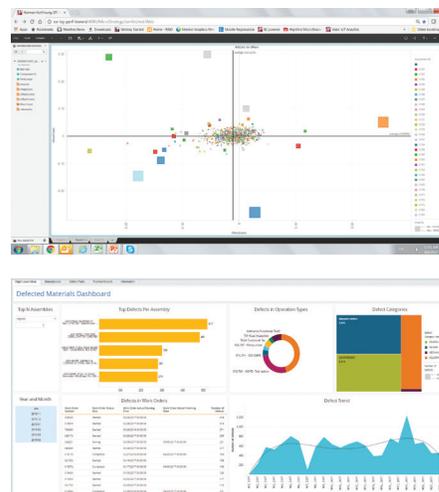


Figure 5: Opcenter Intelligence Electronics leverages an advanced micro-strategy analytic platform to provide users with a sophisticated yet simple way to quickly generate and analyze large amounts of data.

Siemens Digital Industries Software  
[siemens.com/software](https://www.siemens.com/software)

Americas +1 314 264 8499  
 Europe +44 (0) 1276 413200  
 Asia-Pacific +852 2230 3333