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PanaCIM
Enterprise Edition

ALL NEW

PANACIM ENTERPRISE EDITION 10

PanaCIM Enterprise Edition 10 effectively delivers a feature-rich, manufacturing software suite through a scalable, small-footprint appliance that can grow with the manufacturer, while providing unprecedented integration of Panasonic and best-in-class, complementary technology partner equipment.

A locally-developed Manufacturing Execution System (MES) sustained by an extensive global support infrastructure, cost-effective PanaCIM Enterprise Edition 10 solutions ensure manufacturers can focus on their core competencies, while Panasonic supports the enterprise.

Differentiating Features:

- Panasonic has over 50 years of exceeding customer needs with proven industry excellence in SMT and over 100,000 solutions installed
- Complete MES software solutions for Smart Factories—developed in the US, deployed and supported globally
- Built on a solid, innovative history of connecting "things" for nearly 100 years... We are Industry 4.0 ready

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ADVANTAGES OF VALUE-ADDED

Turnkey Solution
- Installs in minutes, not hours
- Detects and configures itself automatically
- Guides operators to perform steps based on their defined skill level

Lower Cost of Ownership
- Decreases deployment costs with fast implementation
- Reduces costs with open-source software between the OS and the database
- Eliminates the need for IT management

Improved Factory Up-time
- Eliminates potential single point failure
- Upgrades equipment firmware and software line by line
- Enables easy recovery with a hot-swappable appliance

Single Solution
- Handles all MES functions at line and floor levels
- Supports all equipment in the line regardless of brand
- Provides options for long-term storage and data analytics

Vertically Integrated
- Connects with other business systems easily
- Works in parallel with previous versions of PanaCIM Enterprise Edition
- Integrates as a factory-wide solution with Connectivity and Maintenance

Recipient of Numerous Industry Awards

Circuits Assembly
NPI Award
Production Software

Global SMT & Pkg
Technology Award
Best Product Americas

INNOVATIVE AND EFFECTIVE DESIGN

Modular Concept
- Integrated software modules are developed based on user feedback to solve key production problems by addressing the top objectives for successful manufacturing:
  - Maximizing Productivity
  - Reducing operating costs
  - Increasing visibility
  - Increasing up-time
  - Minimizing response time
  - Controlling asset maintenance management
  - Efficiently allocating materials, equipment, and personnel

Flexible Data Warehousing
- Two options for secure data storage enable quick data analytics, comprehensive trend analysis, and process information accumulation:
  - **Terra**™ for on-premises storage
  - **Stratus**™ for cloud-based storage

In-process Connectivity
- Manages inventory throughout the facility from warehouse to kitting to production and box build... Anywhere
- Implements digital work instructions on the machine, at the slide line, in packaging... Anywhere
- Captures real-time operator updates to build a custom knowledge base for easier recovery and future reference

Maintenance
- Plans asset maintenance automatically using predictive and reactive user inputs
- Records actions performed such as spare parts, labor resources, skill levels, schedules, procedures, alerts, completeness, certification, and more
- Schedules maintenance based on time, usage, and urgency

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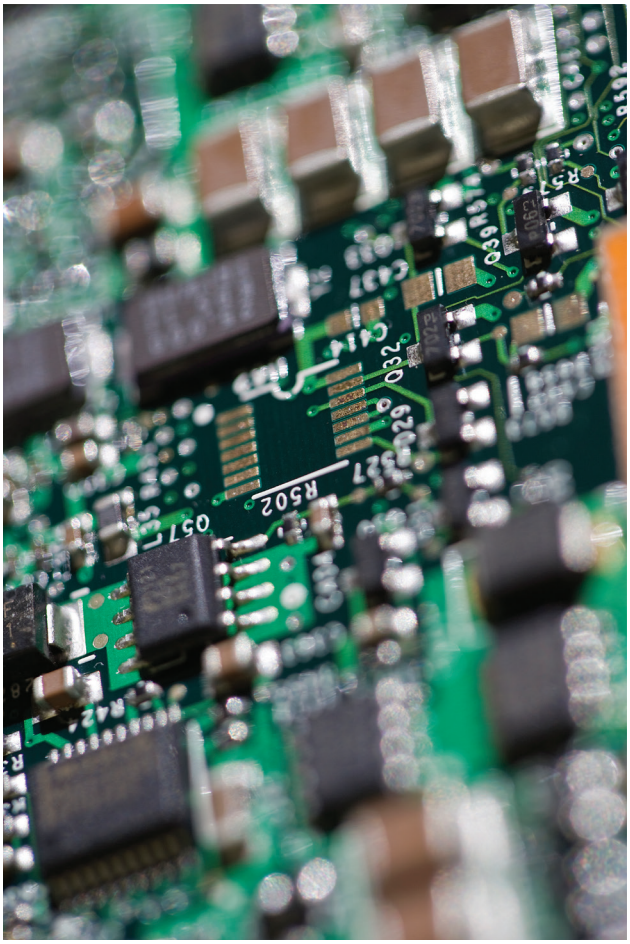
MATERIAL VERIFICATION

The **Material Verification** module assists with changeover setup, splicing, and parts exhaust—ensuring the right components are loaded into the right place. In addition to the software, this module includes hand-held barcode scanners for RF communication as well as wireless Access Points promoting real time feedback. Carriage locking hardware for traditional equipment is optional for added productivity.

Features for Modular and Traditional Equipment

- RF based scanner—Scan 1D and 2D barcodes and transmit data to the Host system and other equipment via a wireless access point(s).
- Operator login—Scan or type in an operator barcode to record operator selections.



- Recording of material data—Use material barcodes to collect part number, vendor, lot/date code, initial quantity and a site-wide user-defined field. Scan and/or key in data.
- Multiple data fields extracted from a single or multiple barcode label(s)—Configured data fields can be located in separate labels or a single label.
- Substitute part numbers—Import substitute part numbers for product setup. The original and substitute part numbers are recorded for traceability reporting.
- Invalid component management—Part numbers and/or vendors and/or lots can be specified as invalid to prevent mounting those materials.
- Support for screen printer materials—Up to ten item types such as Paste, Squeegee, Stencil, etc.
- Component to panel traceability—Identifies the boards produced using a specified part and lot number. This helps identify boards built with defective components. Reverse identification is also available.

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MATERIAL VERIFICATION

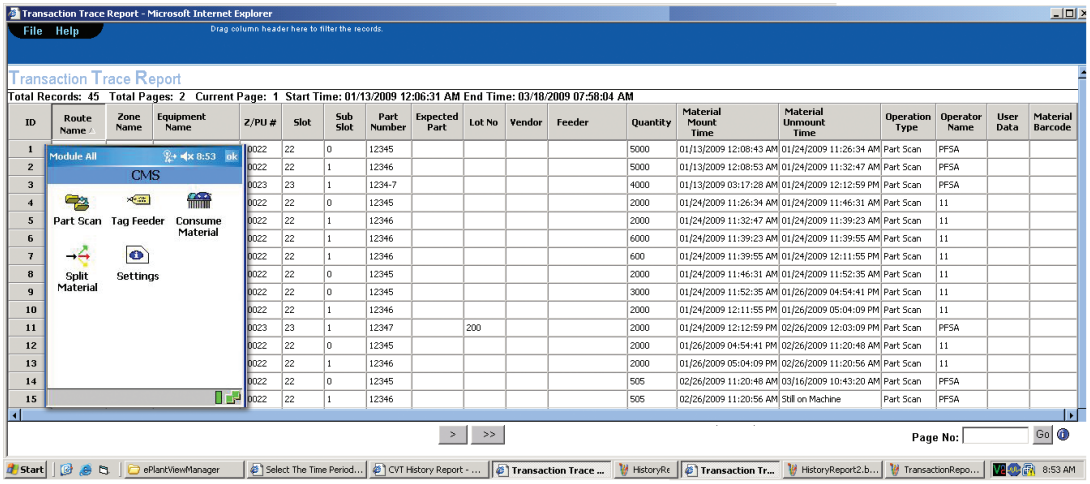
Additional Benefits

- Multiple scanners per module
- Guides operators through validation of required components
- Part Exhaust, Splice Warning, Splice Anytime, and Changeover operation support
- Supports intelligent feeders
- Production Startup Verification

Tray Support

- Changeover and Part Exhaust
- Production Startup Verification Option
- Part Exhaust Verification Option

Material Verification is also used to specify invalid components that shouldn't be mounted. Part number/vendor/lot combinations can be entered. Once this data is saved, operators are blocked from mounting any scanned invalid component. Reports on the location of invalid components can be run to find any invalid components currently mounted on the placement machines.



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PRODUCTION ANALYSIS

PanaCIM® Enterprise Edition's **Production Analysis** module is a web-based application used to monitor factory performance of lines and machines. Its charting and alerting capabilities allow analysis of manufacturing floor issues so that proper action can be taken for any needed improvements to maximize productivity. Since Production Analysis is browser-based, these analyses can be performed from anywhere, even outside the factory.

Charting

This application provides charting of all the statistical information collected by PanaCIM Enterprise Edition including: production data, nozzle data, cassette data, operation states, current operation event data, and historical operation event data.

Charting allows users to:

- Determine trends in machine performance, thereby enabling effective preventative maintenance
- Analyze shifts in production, which can lead to improvements in the overall process
- Evaluate production quality, which can help avoid scrap and rework
- Examine time spent in various machine states

Alerting

Production Analysis' alerting function allows you to separately configure and monitor any available chart expressions against a defined threshold/limit. When a chart expression violates the threshold/limit it is considered an "exception" and an alert is sent to the specified person(s).

The Alerting feature includes the following two options:

- Monitoring—allows supervisors and operators to easily set up notifications
- Exception Viewer—allows users to historically view any exceptions that have occurred for a machine with the following details:
- Exception
- Set Value
- Actual Value
- Description

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PRODUCTION ANALYSIS

Root Cause Analysis

Changes to processes are often a temporary patch reacting to quality issues. These actions typically lack the true data and analysis needed to ensure the proper measure was implemented. Production Analysis provides the necessary data and charting to drill down and isolate root causes.

Determine:

- Commonality
- Trends
- Patterns
- Frequency of events

Combining this with your quality DMAIC process ensures corrective measures have been implemented right the first time.

Chart Types

In addition to all the chart reports being customizable, Production Analysis includes a standard set of pre-defined chart types. Source attribute values can be different for traditional and modular machines. The charts include:

Type	Contents
Machine Production	Specific machine production activities
Comprehensive Time	Time spent in all machine states
Time	Time spent in specific machine states
Comprehensive Error	Occurrences of all available error types
Error	Occurrences of specific types of machine errors
Ratio	Specific ratio details
Nozzle	Specific nozzle error details
Nozzle Ratio	Pickup ratio detail
Feeder/Part Number	Specific cassette errors based on feeder or part number
Feeder Ratio by Pickup	Pickup ratios
Feeder Ratio by Placement	Placement ratios
Scrap	Scrap counts by position or part number
Component Usage	Pickup, Placement, and Scrap Counts by position or part number

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PRODUCTION MONITORING AND DISPATCH

Production Monitoring and Dispatch (PMD) provides a centralized monitoring and notification system utilizing real-time data to identify events that can impact production and dispatch the corresponding tasks to the appropriate labor resources. Having this module's visual display system on your production floor allows maximum visibility and communication between all departments within the factory.

Manufacturing enterprises without a centralized monitoring and dispatch system often experience unscheduled downtime due to work/load balance of labor resources and event response time. PMD's event tracking, performance metric displays, and labor dispatching allow labor resources to be notified of production events regardless of their location. The result is that the right person does the right task at the right time to keep your production moving.

Real-time event data feeds into Production Monitoring and Dispatch from equipment and other PanaCIM® Enterprise Edition modules. Events such as part exhausts, inefficiency warnings, and upcoming changeover appear on notification displays—so all parties are in sync with the production line.

As tasks for that event are acknowledged and completed, the system continues to monitor and dispatch new tasks along with real-time performance progress. The current state of the production line, including key performance indicators (KPI), is readily available at any time.

Features of Production Monitoring and Dispatch include:

- Immediate visual notification of real-time events, line and machine status
- Adaptive scheduling to actual production conditions
- Provision for operator acknowledgement and ownership of tasks
- Automatic detection of event resolution
- Key performance indicators (KPI) display
- Current product information display
- Upcoming product changeover information display
- Report generation for event history analysis by product, operator, and equipment
- Detailed production schedule display

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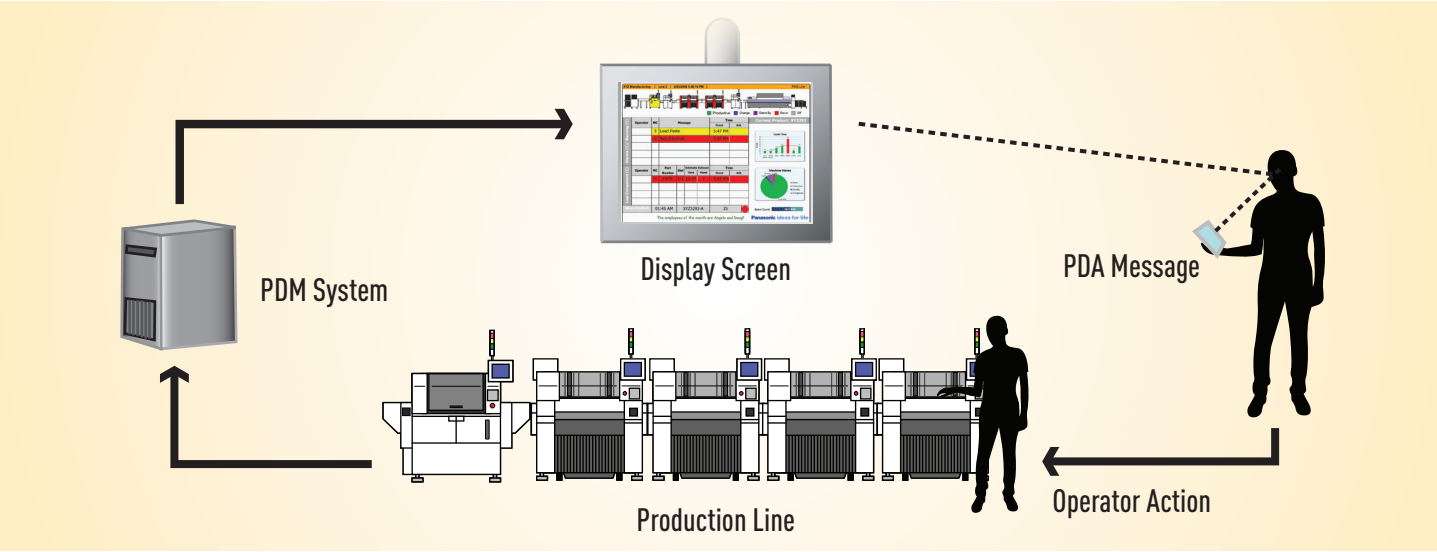
PRODUCTION MONITORING AND DISPATCH



Performance progress displays can be as large as you require and are placed in strategic locations on your manufacturing floor to provide maximum visibility for each line's operators. There is no limit to the number of displays that may be used. Each display is configured by the administrator to display data for a single production line.

Each Display Can Show:

1. Graphical representations of the monitored equipment of the production line
2. Selected key process indicators (KPI's) in a defined area such as:
   - Cumulative Material Supply Time
   - Cumulative Material Supply Event Quantity
   - Cumulative Equipment Alarm/Warning Event Quantity
   - Cumulative Equipment Alarm/Warning Time
   - Cumulative Line Operation Ratio (OR)
   - Hourly Line Operation Ratio (OR)
3. Current product in production
   - Current Product Name
   - Production Quantity Planned
   - Production Quantity Actual
4. Upcoming changeover information
   - Next Product Name
   - Planned Quantity
   - Estimated Start Time
5. Downtime and material supply events
   - Material Supply events
     - Part Exhaust
     - Splice Warning
     - Paste Check
   - Equipment Alarm/Warning events
     - Transfer Errors
     - Conveyor Jams
6. Digital clock with the current time

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MATERIAL CONTROL

The **Material Control** module manages information about your production operations' required materials—including consumables and equipment resources.

By viewing your factory as a collection of Production Zones and Support Areas, Material Control provides expanded coverage for material tracking beyond just your production line. These areas are uniquely named and bar-coded for integration within all applications of the Material Control module.

This module covers several functions including material movement, remaining quantity estimates, low component monitoring, and simplified material verification.

The module's 3 main applications are:

- Material Tracking and Inventory
- Material Allocation (optional)
- Moisture Sensitive Device Tracking and Control (optional)

Material Tracking and Inventory

This tracks and updates the estimated current quantity of qualifying material items with information obtained from production machines and handheld scanners. This allows you to view the current material inventory of any PanaCIM® Enterprise Edition-defined location in real time.

- Manages consumable and equipment resource attribute definitions
- Monitors component levels approaching a user-defined exhaust for alerting and re-stocking before equipment has to stop
- Determines component remaining quantity estimate offline
- Locates material by any of their unique ID info
- Maintains feeder/component traceability and accurate inventory tracking through a unique ID check in
- Associates pickup errors with each material unique ID as they are moved between placement machines
- Compares production equipment relative performance for qualifying material item part numbers, vendors, and lots

PanaCIM Enterprise Edition

MATERIAL CONTROL

Material Control-Allocation

Visibility for partial material items allows cost to be reduced because the minimal amount of material is pulled from the warehouse for a changeover. Materials are also reserved so others can not use them until they are released.

- Identifies and uses existing materials on production floor as part of a product changeover
- Searches for usable materials in user-specified locations
- Suggests component package items to meet required quantity based on FIFO rules
- Streamlines material preparation by presenting material handlers with lists of exactly which materials to use in an upcoming changeover

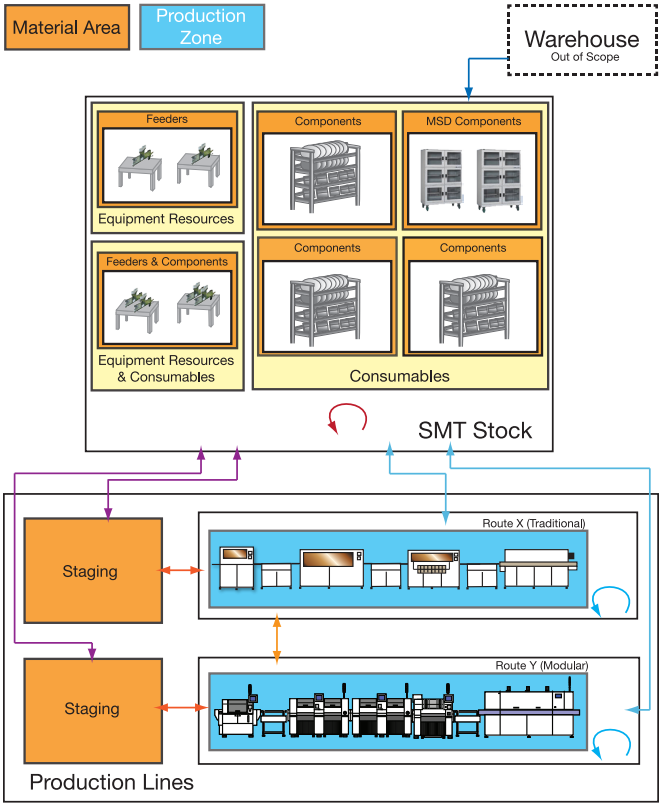
Material Control-MSD

The susceptibility of electronic devices to moisture poses significant quality and reliability concerns, especially for critical applications. This MSD function helps automate the often difficult moisture sensitive device tracking and control process.

- Tracks real time floor and shelf life (IPC J-033B)
- Monitors and displays each MSD component's remaining floor/shelf life w/definable parameters
- Notifies of MSD component expiration via email
- Locks out expired MSD components during Material Verification module operations
- Reports MSD component location, operation, and elapsed lifetime and logs detailed MSD component transactions

MSD functions of Material Control available in production zones as well as supporting areas include: shelf life tracking, floor life tracking, inventory, status monitoring, notifications, and expiration.

MSD functions of Material Control available in supporting areas include: package, unpackage, and dry box check-in and check-out functions.



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TRACEABILITY

The **Traceability** module of PanaCIM® Enterprise Edition helps you meet regulatory requirements—whether they are the industry's, your customer's, or your own.

Barcode readers are used to capture panel identification data while the module integrates with PanaCIM Enterprise Edition's Material Verification module to provide traceability of materials to panels for mounting equipment as well as screen printers and hand place stations. All machine errors are captured by panel and various reporting options are available with support for a customer-defined data archival period.

This module offers three levels of traceability to meet your needs:

- Panel—Scanned barcodes track and record information about the panel, the product being built on it and the machine used to build it
- Component to Panel—Allows for the identification of which materials were used on which panel
- Placement to Panel—Building on the previous two levels, identifies placements by reference designator in addition to tracking the panel and materials used

Component to Panel and Placement to Panel levels require integration with PanaCIM Enterprise Edition's Material Verification module for full traceability capabilities. More information about the specific data tracked in each of these levels and Material Verification's integration is available on the reverse side.

Various traceability reports are available depending on the level of traceability in use. Reports are viewable via web browser for maximum accessibility. Report types include: Barcode Trace, Component Trace, Placement Trace, and Panel Trace.

PanaCIM Enterprise Edition

TRACEABILITY

Barcode Trace

Input panel serial numbers and retrieve a material trace "bill of materials" for each panel, including the material data (Part Number, Lot/Date code, Vendor code, User Data) from panel assembly.

Component Trace

Input component material data (Part Number, Lot/Date code, Vendor code, User Data) and retrieve a list of panels built with the specified material. This report can be helpful in identifying panels that may need to be quarantined or recalled due to defective material.

Placement Trace

Input material data (Part Number, Lot/Date code, Vendor code, User Data) and retrieve a list of panels built and the placement reference designator positions with the specified material—helpful in identifying panels that may need to be quarantined or recalled due to defective material.

Panel Trace

Generate a report of panels that passed through a specified line over a specified time period.

Panel-Level Traceability

Fixed or handheld barcode readers record the ID of each panel as it enters your equipment. Data available for reporting includes the timestamp, panel serial number, panel model number, Product Name, and Equipment Zone Name. Supported panel barcode types include 1D and 2D barcodes, and RF tags, dependent on equipment/hardware.

Component-to-Panel-Level Traceability

This level is provided when integrated with the Material Verification module which records the times during which particular materials are installed on each piece of production equipment. That info, with the panel traceability, allows identification of each panel serial number produced with specific material including part number, lot/date code, vendor code, initial quantity, and user-defined data.

Placement-to-Panel-Level Traceability

This level also requires the Material Verification module on modular mounting equipment. Material Verification's recorded info combined with panel traceability and additional info from the placement equipment, allows placements to be identified by reference designator on each panel serial number produced with specific material including part number, lot/date code, vendor code, initial quantity, and other user-defined data.

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PRODUCT CHANGEOVER AND CONTROL

PanaCIM® Enterprise Edition's **Product Changeover and Control** module incorporates configurable levels of automatic line changeover management while integrating with other PanaCIM modules including Traceability and Material Verification.

Each work zone can have two levels of changeover control: Automatic Detection and Automatic Changeover.

This module identifies the next panel entering the production line and compares it with the work currently being processed within the controlled work zone. Panel identification is performed through an automated input device, i.e., barcode scanner. If a difference is determined between the panels, the upstream panels are held until the work zone is able to complete a product changeover. Once the changeover is complete, the upstream product is released into the normal flow of the work zone and new product production begins.

Product Changeover and Control also:

- Provides true "Lot Size of One" capability
- Identifies product/model
- Automates product recipe/program selection and downloads as required
- Processes top- and bottom-side within a single work zone
- Automates equipment configuration such as conveyor adjustment and material verification/validation
- Tracks products (panels/boards) through the work zone(s)
- Allows enabling and disabling of the system (bypass Auto Changeover feature)
- Controls equipment execution such as automated start and stop as required

Changeover actions that can be performed while a product is being built in the work zone will be performed to keep changeover times down and maximize productivity. The level of this module's control for the work zone determines which changeover actions the module performs.

PanaCIM Enterprise Edition

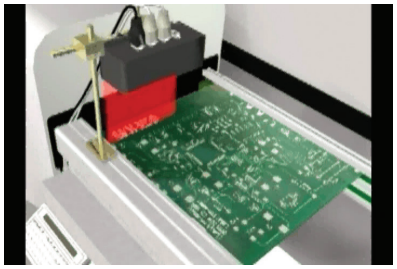
PRODUCT CHANGEOVER AND CONTROL

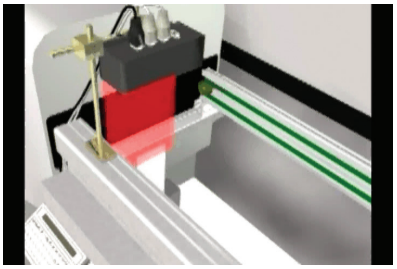
Four changeover checks are made in all control levels to ensure smooth changeover runs:

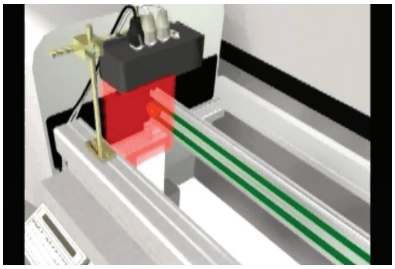
1. Correct program selected
2. Panel conveying systems at correct dimensions
3. Feeder setup validation (when the Material Verification module is also used)
4. Manual changes performed

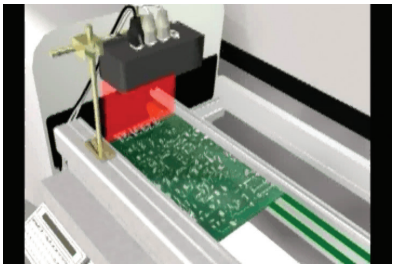
Based on the features available in each segment and the configured control level, these checks are performed manually or automatically. Product Changeover and Control also allows these checks to be performed in any order to provide flexible operator interaction with the system.

Product Changeover and Control's integration with PanaCIM Enterprise Edition's Material Verification and Traceability modules provides equipment setup information and validation for changeovers and material tracking to a specific product's panel and/or board.









When a new product is identified, automatic activities such as conveyor width adjustment and program download take place. Then any manual changes can be performed and the new product is released into production.

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PRODUCTION PLANNING

The **Production Planning** module helps make decisions on the acquisition, utilization and allocation of production resources to satisfy your customer's requirements efficiently.

Production Planning offers:

- Job Quoting—Accurately estimate production time and required resources to produce a product for quotation/bid purposes.
- Floor Configuration—Reorganize existing equipment in order to meet a production time goal and a particular product or products.
- Line Enhancement—Perform a cost/benefit analysis on adding equipment to an existing line.

The module's capacity analysis function assists in determining which existing production lines can best produce a particular product or group of products.

This is designed to help circuit assembly professionals respond to challenging production planning questions—from determining which existing production line will most efficiently build a known product to investigating what line configuration is suitable for a new product, or group of products, whose details are unknown.

In order to answer questions about unknowns, the capacity analysis uses a number of simulation algorithms for the three main components of production: parts, products and production lines.

Production Planning is built on the same optimization engine used in production software so you can be certain that the results are as good as the information provided. If actual data is used, the results will be identical to the results obtained by using your equipment's actual production software. Using the capacity analysis off-line frees up your equipment to maximize productivity.

It installs and runs completely separate from the production software. Production software data can still be used as long as the installation is available on the same network for the user to browse.

PanaCIM Enterprise Edition

PRODUCTION PLANNING

Production Planning's features include:

- Importing and managing shapes, parts, products and production lines
- Simulating parts, products and production lines
- Estimating production time
- Comparing production time
- Comparing line configuration

Simulating parts

When simulating parts the user can indicate or define specific shapes and the minimum quantity of different parts for each shape. Shape definitions can include size range as well as specific attributes (such as polarized, leaded or tray fed). Each attribute is optional in the definition. The simulation uses minimum quantities to take into account existing parts that already exceed a particular quantity. Also, shape types may overlap with each other and/or specific user-selected shapes.

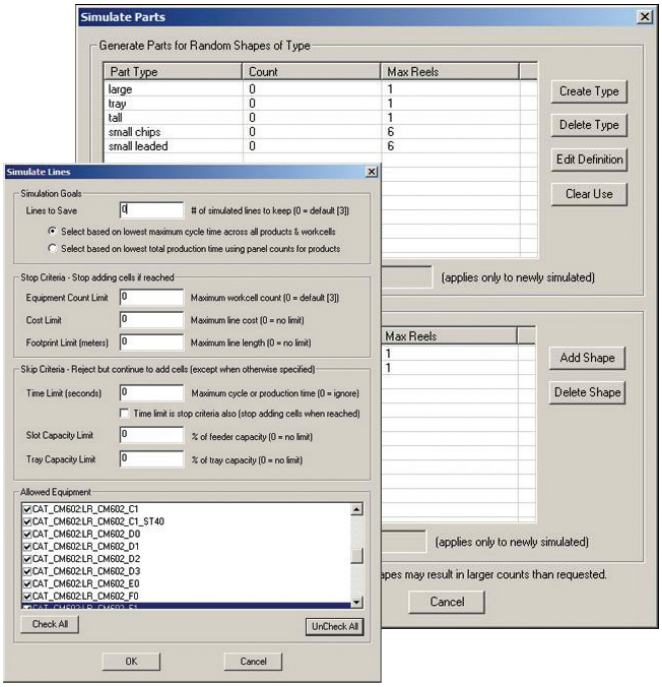
Simulating products

To simulate a product, users simply indicate the product properties, such as size, pattern count, arrangement and part spacing. Then for a part type or specific part, specify the exact number of placements per pattern or the placement ratios (such as 100x chips for every 1x tray) as well as the maximum number of placements per pattern. In either case you can adjust how varied the parts should be.

Simulating lines

For line simulation users indicate which available equipment to use and how many lines to keep. The criteria to define a 'better' line–either the peak cycle time among the given products and the cells in the line or the total cycle time based on the quantities specified for each product–can be specified as well.

Specify limits on the generated lines based on the number of machines in the line or based on the cost or size of the line (both cost and size are user defined). Reject lines based on cycle time achieved, slot capacity used or tray capacity used.



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ENTERPRISE LINK

The **Enterprise Link** allows you to connect valuable data available from your PanaCIM® Enterprise Edition MES with the other business systems in use at your factory. Export production data in a standardized format and in real time.

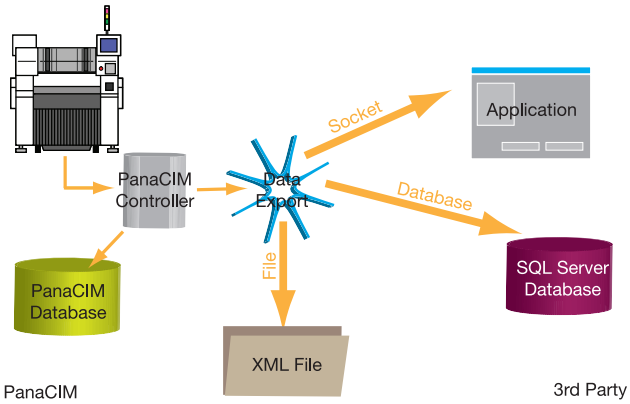
By seamlessly sharing data between these systems, the efficiency and productivity of your overall operation can be enhanced.

Enterprise Link can bridge manufacturing operations and the control level (i.e. MES) with 3rd party business planning systems such as MRP/ERP systems (SAP, Oracle, etc.).

The module exports in specific formats via several different real time interfaces including XML file, socket, and database.

Examples of information that can be shared include:

- Traceability data to automatically update higher level traceability systems
- Component inventory or consumption data to update MRP with more accurate information
- Component loading information for tracking and inventory
- Production count and completion information to update planning and scheduling systems
- Material detail information downloads to PanaCIM for simplifying floor level scans



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PANACIM MAINTENANCE

The Challenge of Maintenance

Making informed decisions when to maintain assets often requires complex analysis of dynamic equipment records, production schedules, resource availability, and spare part predictability to achieve time-, production-, and cost-effective results.

These issues compound with the inevitable and constant changes due to supply chain mishaps and production urgencies that raise risk of unscheduled, inefficient, and KPI-killing down time. Regardless, asset maintenance is mandatory for a factory to achieve the highest levels of productivity and yield.

The Solution for Maintenance

PanaCIM Maintenance helps solve these challenges by controlling the full life cycle of any asset. As a Maintenance Management System (MMS), it manages maintenance activities like planning, scheduling, and tracking to certify the process by incorporating vital elements such as production scheduling, resource and spare part planning, standard procedures, alerts, and more.

PanaCIM Maintenance Concept

Automatically Schedule Asset Maintenance Using Predictive and Reactive User Inputs

Record Actions Performed

- Spare Parts
- Resource
- Skill Level
- Schedules
- Procedures
- Alerts
- Completeness
- Certification
- And more

Variable-based Maintenance Scheduling

Based on Time

Based on Usage

Based on Urgency

Differentiating Factors

- Panasonic has over 50 years of exceeding customer needs with proven industry excellence in Surface Mount Technology and over 100,000 solutions installed
- Complete MES software solutions for digital manufacturing—developed in the US, deployed globally
- Built on a solid, innovative history of connecting things for nearly 100 years... We are Industry 4.0 ready
- Utilizes the latest technologies to operate in any browser and on any client platform—simple installation and seamless upgrades without factory downtime
- Automates the often error-prone documents and tasks like maintenance scheduling, work instructions, conformance management, spare part and labor planning, etc.

Recipient of Numerous Industry Awards

Circuits Assembly
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Production Software

Global SMT & Pkg
Technology Award
Best Product Americas

PanaCIM Enterprise Edition

PANACIM MAINTENANCE

Streamline Processes

- **Predefined Imports**
  Manuals, checklists, certifications, and templates are available for Panasonic hardware platforms to ease deployment
- **Paperless Documentation**
  Digitize OEM documents and audio/video files, and then provide controlled access to support ISO compliance—automatically link documents to a template or Maintenance Order for fast retrieval
- **Certification Tracking**
  Define OEM or site process requirements to certify assets are production ready and meet repeatability standards—full reporting of completion and recurring scheduled certifications
- **Work Standards**
  Define work flow processes for any maintenance or repair task, record estimated and actual completion time, and report on completion rates

Reduce Costs

- **Integrated Platform**
  Framework is ideal to integrate with other platforms such as PanaCIM, automated maintenance units, machinery, power tools, etc.
- **Spare Parts Management**
  Monitor, evaluate, track, and control spare part inventory for optimal support of technicians while maintaining ideal stock levels to reduce inventory investment
- **Augmented Reality**
  Incorporate a Panasonic Toughpad® for augmented reality to help reduce training costs and streamline issue location and identification

Increase Uptime

- **Asset Life Cycle Management**
  Manage and monitor the cost, performance, and status of assets during their entire life cycle to ensure process compliance
- **Customizable Labor Tracking**
  Monitor KPIs (response time, diagnostic time, repair time, certification time, etc.) to determine maintenance team's performance and effectiveness
- **Issue & Downtime Reporting**
  Myriad reporting for Engineers and Management from single- to multi-location enterprises

Improve Efficiencies

- **Wireless Handheld Barcode Scanner**
  Tablet camera provides barcode support for filtering and locating assets including an audit function to confirm asset location
- **Comprehensive Knowledge Base**
  Customizable, expandable Knowledge Base includes all assets and usage data within a facility or group of facilities to provide customer-based needs
- **Automated Audit Process**
  Completed Maintenance Orders are delivered to an auditor for acceptance review and final close out
- **User Management and Access**
  Control user- and group-level permissions to manage data access and certify user training requirement compliance

Panasonic

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total solutions for any mix any volume®

Panasonic

PanaCIM
Enterprise Edition

NEW

PANACIM
WORK-IN-PROCESS SOLUTION

PanaCIM Work-in-Process is a complete, enterprise-level software solution especially suited to tracking and controlling electronics production from receiving to shipping and every process in between.

A scalable and effective Manufacturing Execution System (MES) software package, PanaCIM Work-in-Process is a highly configurable, intuitive framework that seamlessly integrates different factory automation systems into a single entity for traceability of any product, any process, regardless of manufacturing mix or volume.

Another Panasonic solution to ensure manufacturers can focus on their core competencies, while Panasonic supports the enterprise.

Differentiating Features:

- Panasonic has over 50 years of exceeding customer needs with proven industry excellence in SMT and over 100,000 solutions installed
- A deeper, more inclusive, factory-wide MES software solution for Smart Factories—developed in the US, deployed and supported globally
- Built on a solid, innovative history of connecting "things" for nearly 100 years... We are Industry 4.0 ready

total solutions for
any mix
any volume®

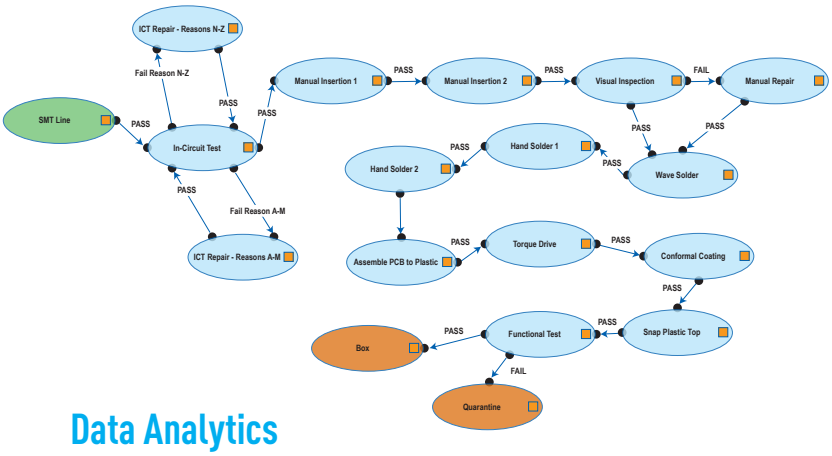
INNOVATIVE AND EFFECTIVE DESIGN

Intuitive Graphical Configuration

- Create processes without limit
- Installs easily with minimal hardware requirements
- Create new versions with verification before rollout

Process Control

- Drag and drop to create new process plans
- Know which process your product has been through and enforce where it is going to ensure product quality
- Integrate sensors and automation to create conditional control over your product—even manual processes
- Custom conditions provide non-linear process plan capability



Data Analytics

- Collect as much standard/user defined data as desired i.e. Cycle Time, Quality, OEE, as well as custom data points
- Track quality data throughout operation
- Report traceability data throughout an entire process

PanaCIM Received Numerous Industry Awards

Circuits Assembly
NPI Award
Production Software

Global SMT & Pkg
Technology Award
Best Product Americas

Paperless Work Instructions

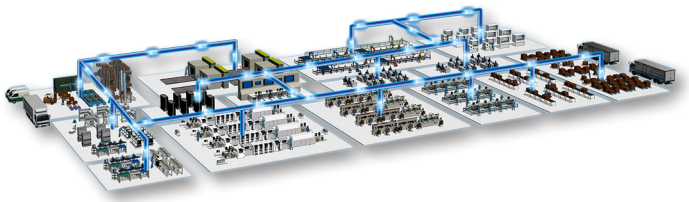
- Create contextual step-by-step paperless work instructions to be displayed at point of use
- Control versions and rollout so all work instructions are updated simultaneously
- Import previously created instructions to save time

Production Inventory Management

- Define traceability levels at the individual part level
- Customize inventory locations for any factory floor
- Fast, efficient mobile experience for inventory staff

Easy Integration

- Integrate equipment and sensors to software for data collection, automation, and process control
- Fully compatible with Panasonic PanaCIM Enterprise Edition 10 and PanaCIM Maintenance



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