

From CIM to MES

Increase Your Factory's Efficiency

Christian Teasdel, Aegis

Electronics assemblers are continuously seeking new ways to improve their manufacturing speed and quality to differentiate themselves from competitors. Computer Integrated Manufacturing (CIM) software makes manufacturers more efficient while increasing quality and lowering overhead. The applicability of CIM software within the electronics assembly is very broad. It impacts virtually every function of the factory and beyond.

One particular software tool, which is offered by MYDATA's MPM software suite, is MYCAM. MYCAM promises to boost your productivity by converting CAD design information into rich process routing, visual assembly documentation, reports and optimized machine programs. MYCAM was developed from and in cooperation with Aegis Industrial Software Corporation's well-known and widely used CircuitCAM.

Main CIM System Components (Call Out Box)

- CAD Conversion
- Process Development / Machine Programming / Routing
- BOM and AVL/AML Management
- Revision Control
- Management Automation
- Manufacturing Execution

Software is responsible for accurately and quickly converting design and bill of materials (BOM) information into process, assembly, machine, and quality information, and getting this resultant information to the factory floor. CIM can be thought of as a way to digitally leverage maximum value from a factory's existing human and capital assets.

MYCAM Software offers a system approach to manufacturing, with greater use of computer networks and databases to control the way information is dispersed onto the manufacturing shop floor. It is a Windows based software tool used by manufacturing engineers to automatically create machine programs and documentation for every SMT and auto-insertion assembly machine in your plant. Below are some of the features and benefits you can expect:

- Merges CAD and BOM data to develop a total product definition from the closest data to the design itself.

- Creates complete machine assembly programs capable of controlling all options on your assembly machines-offline while the machine is operating.
- Reduces program and machine setup time by more than 95% while improving throughput by 10% to 40%
- Creates setup documentation and inspection visual aids for all assembly machines
- Automatically balances workload for hand assembly lines and creates insertion and inspection drawings and kitting reports
- Graphical user interface is easy to learn and simple to use



To increase your factory's efficiency, and reduce the time-consuming process of New Product Introduction (NPI) and Total Product Introduction (TPI), it is necessary to use software that can identify and use whatever information you have in whatever format you receive from the design engineers or your customers. MYCAM converts all types of CAD and bill of materials (BOM) information into ready-to-run machine programs. Import options include virtually all native CAD file types, Gerber data and even scanned bare-board-images. After being imported, the graphical rendering of the CAD image is checked for errors and can be edited. Editing may include the highlighted region used in documentation, pins, body graphics and even custom text fields or photographic images of the component. References are individually adjusted for size, angle and font, or automatically arranged for maximum readability with "auto-place" technology.

Why CIM?

CIM software is quite valuable, although it does not actually add direct value to the product being produced, like assembly or process machines. The value of CIM lies in how it radically impacts both the volume and quality of all production in the factory. It directly improves profitability by freeing time for both machines and personnel that would otherwise be wasted in a traditional factory. The increased speed of NPI, process engineering, and engineering change implementation frees manufacturing and process engineering time, which can then be used to process more assemblies without increasing personnel.

CIM software also indirectly impacts profitability by increasing product quality, which in turn leads to more business. Larger systems capable of presenting process data to customers over the Internet improve customer retention and satisfaction.

These sophisticated systems also simplify and expedite ISO audits by making the entire quality documentation set, revision control history, and on-line quality manual and approval records available to auditors through a single browser.

There are countless reasons why a particular assembler chooses to deploy CIM software. Some customers focus on converting their CAD and BOM data into machine programs more efficiently. Others mainly seek improvements in their assembly and inspection documentation. Still others want quality data collection and analysis, or paperless plant-floor documentation. In the most advanced installations, assemblers are seeking all of these functions as well as multi-factory integration, electronic approval management, and customer and supplier integration into their CIM network.

Regardless of the particular requirements a factory defines for its CIM system, one theme is common across all applications: in the never-ending pursuit of greater efficiency and customer satisfaction, factories must have efficient access to manufacturing information, eliminate processing bottlenecks, get new products to the floor more quickly, and respond to engineering changes rapidly. Increasingly, the manner in which a company handles its information sets one assembler apart from its competition.

As your operation grows, you can optimize your entire line even further! Aegis's leading edge technology can transform your operations by implementing Manufacturing Execution Systems for total factory traceability and to prepare your factory for RoHS Compliance. Fortunately, your MYDATA machinery is particularly intelligent and therefore acts as a superior data provider to the Aegis MES system.



The major elements of the Aegis MES solution

- Paperless document viewing
- Offline and online materials setup guidance and verification
- Machine data acquisition, monitoring, and analysis
- Product tracking and route control
- Quality data collection, repair and reporting
- Quality, Performance, Efficiency, and Status Dashboard
- Line flow control
- Test and test data acquisition
- Repair loop management
- Pan-process SPC, alarming, reporting, and analysis
- System build, final integration
- Packout
- Total traceability the materials, product, process, and test

Any MYDATA user wishing to know more about Aegis NPI or MES should contact their local MYDATA representative. For further information about Aegis Industrial Software and its proven solutions, please visit: www.ais-corp.com. Christian Teasdel Applications Specialist cteasdel@aiscorp.com