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**GEOMETRIC
SOLUTIONS**

Teamcenter integration for Mentor Board Station

Integrating Board Station PCB design into your Teamcenter PLM environment

Benefits

- Manages entire PCB product lifecycle
- Provides a single source of product and process data
- Facilitates collaboration and concurrent engineering initiatives
- Aligns ECAD design with product requirements

Business challenges

- Integrating ECAD process into product development process
- Managing ECAD data in the context of the overall product configuration
- Coordinating ECAD/MCAD collaboration
- Establishing communications within and across a multi-site supply chain
- Ensuring that ECAD design implementation meets customer requirements

Summary

Teamcenter® software's integration for Mentor Board Station PCB design enables companies to accelerate time-to-market and reduce development cost by allowing users to capture their schematic, PCB, bill of material (BOM), fabrication and assembly data in Teamcenter – the world's most widely used solution for product lifecycle management (PLM).

Managing the electronics product lifecycle

The Teamcenter integration for Mentor Board Station enables users to capture PCB design data (schematic, physical layout, BOM, fabrication, assembly and visualization data) created under Board Station and store/manage this information under Teamcenter – Siemens PLM Software's digital PLM backbone. Teamcenter's Board Station integration

provides a comprehensive solution for the entire electronics products lifecycle that extends from initial inception through creation, analysis, manufacturing, service and end-of life disposition.

The Teamcenter integration enables the user to log-in to Teamcenter and open, save, check-in and check-out design data. The integration assures design teams their ECAD data is accurately captured and consistently managed in the Teamcenter environment so it can be kept insync with other product definition data.

Providing a single source of product and process knowledge

Teamcenter's Board Station integration enables users to access, manage and archive PCB design data. The optional PCB parts library integration enables users to export, import and manage their ECAD parts library data in a single secure location.

Managed in Teamcenter the ECAD parts library data is easily synchronized with Mentor's Library Manager module. On an enterprise level, the integration allows widely dispersed PCB design teams to manage released design data, collaborate and execute design changes across the entire product lifecycle, thereby minimizing change-related rework.

At the user level, the Teamcenter integration supports the ability to open and save native design files, and access approved parts, as well as to collaborate with mechanical engineers, generate visualization files, share fabrication and assembly data with suppliers and create

Teamcenter integration for Mentor Board Station

Features

- Create, save, access and manage Board Station objects (such as parts, schematic, layout and BOM) as items in Teamcenter
- Create new product revisions or version updates for work in process
- Leverage Teamcenter menus embedded in the Mentor Board Station user interface
- Establish security and data access control policies in Teamcenter
- Manage designer's selection and use of approved parts
- Establish relationships between Teamcenter objects and engineering BOMs
- Share ECAD/MCAD design data across engineering domains through open interchange formats
- View, annotate and mark-up ECAD data in a collaborative environment
- Associate and trace product requirements to PCB designs

BOMs containing both mechanical and electrical parts. To reduce interpretation errors, BOM data can be displayed as "packed" or "unpacked" while Teamcenter's compare capabilities can be used to quickly identify any differences between BOM revisions.

When ECAD design and part library management procedures are brought under Teamcenter control, they can be incorporated into structured workflows and effective change management processes. By managing part data in Teamcenter, product manufacturers can reduce part duplication, prevent use of obsolete or unapproved parts, assign compliance data and focus procurement from approved vendors.

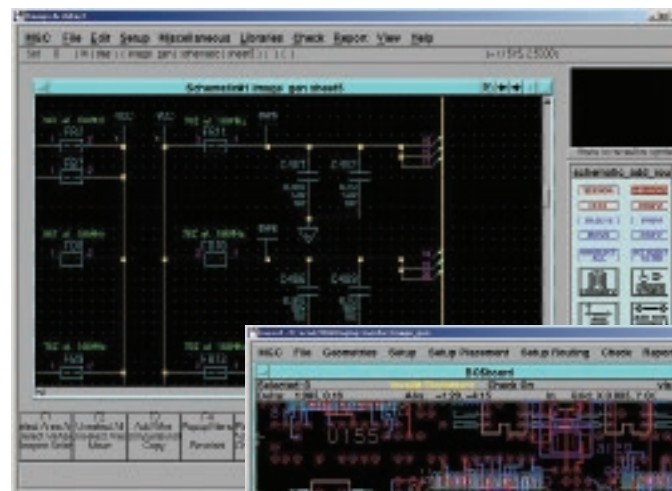
Facilitating collaboration and concurrent engineering

To facilitate the flow of accurate design data across multiple domains, the Teamcenter integration enables collaborative design by leveraging IDF and IDX (EDMD) design data exchange

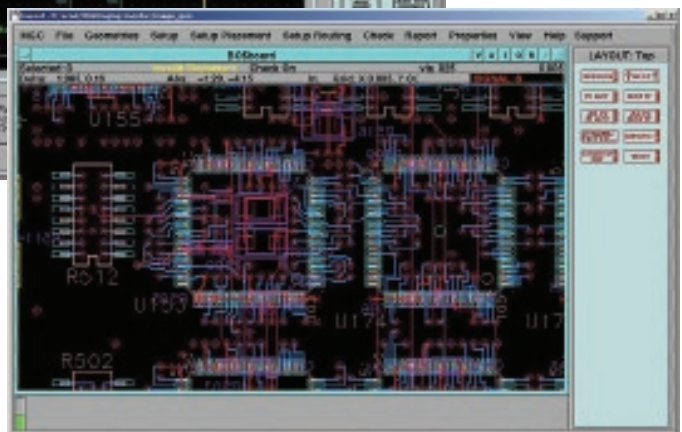
formats. The formats enable the sharing of information relating to board outlines, component placements, keep-out areas and other placement restrictions. Managed in Teamcenter the IDX format supports the ability to pass incremental design data, as well as allow both the ECAD and MCAD designers to accept or reject changes, and incorporate change notes or comments into the information being shared.

Electrical engineers can pass this information as 2.5D/3D elements to mechanical engineers to simulate and analyze various conditions, including interferences, thermal, vibration, shock, dust and humidity. Sharing data for this type of cross-domain analysis helps improve quality and increase product reliability.

To quickly diagnose and understand potential manufacturing errors, users can optionally employ design-for-assembly analysis tools and powerful



Teamcenter menu is embedded in the schematic and layout tools so designers never have to leave their native environment.



ECAD viewer technology. These capabilities allow users to investigate and identify potential issues early in the design process, thereby eliminating unnecessary scrap and rework.

The ECAD viewer's graphical navigation features enable design teams and suppliers to interactively view, cross-probe and annotate schematic and PCB layout data without the use of an expensive authoring tool. Many frequently used annotations are automatically translated and displayed using the language specified by the user's system.

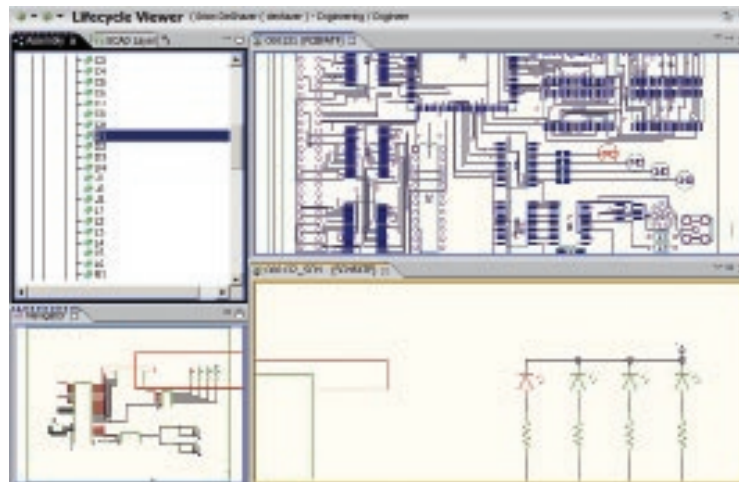
Complete requirements management and traceability

The Teamcenter integration for Board Station enables users to optionally leverage Teamcenter's powerful requirements management capabilities. PCB hardware and software functions can be associated with specific design requirements, providing complete requirements traceability throughout the entire PCB lifecycle.

Supported objects

The integration with Mentor Board Station captures:

- Circuit card assembly (CCA) information
- Components on a CCA
- Schematic design data
- Layout design data
- Secondary data (fabrication and assembly)
- ECAD/MCAD and analysis interchange files
- Layout files in native tool format
- Schematic files in native tool format
- Neutral format files for PCB and schematic visualization



Electrical engineers, PCB designers and suppliers can view and cross-probe between schematic and physical layout to zero in on objects of interest.

Supported functions

- Open, save, check-in and check-out objects to/from Teamcenter
- Extract components and attribute information
- Generate bill of material
- Place Board Station objects under enterprise-wide revision control
- Manage Board Station objects in structured workflows
- Options
 - Facilitate enterprise-wide ECAD library management
 - Manage Board Station objects in change processes
 - Link Board Station objects to product/project requirements
 - Leverage ECAD viewer and markup capabilities with suppliers
 - Cross-probe between schematic and PCB layout
 - Analyze layouts against assembly rules

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