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# Teamcenter integration for Mentor PADS

## Benefits

- Manages entire PCB product lifecycle
- Provides a single source of product and process data
- Fosters environmental compliance initiatives
- 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
- Verifying of environmental compliance
- Coordinating ECAD/MCAD collaboration
- Establishing communication within and across a multi-site supply chain
- Ensuring that ECAD design implementation meets customer requirements

## Integrating PADS printed circuit board design into your Teamcenter PLM environment

### Summary

Teamcenter® software's integration for Mentor PADS PCB design system enables users to capture and manage their part library, schematic, printed circuit board (PCB) layout, bill of material (BOM), fabrication, assembly and visualization data in Teamcenter – the world's most widely used product lifecycle management (PLM) platform.

### Managing the electronics product lifecycle

Teamcenter's integration for PADS provides a comprehensive solution for the entire electronics product lifecycle that extends from initial inception through creation, analysis, manufacturing, service and end-of-life disposition. The integration enables users to store and manage all of their part library, PCB design, collaboration and manufacturing data in Teamcenter – Siemens PLM Software's digital PLM platform.

Teamcenter menus, which are embedded in the PADS user interface, allow the user to automatically log-in to Teamcenter and open, save, check-in and check-out design data. Design teams are assured their ECAD data is accurately captured, consistently managed within the Teamcenter environment and kept in sync with other product definition data.

### Providing a single source of product and process knowledge

Teamcenter's PADS integration enables users to import, export and manage their ECAD part library data, as well as access, manage and archive PCB design data in a single secure location. 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.

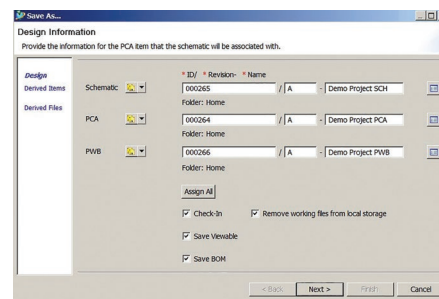
# Teamcenter integration for Mentor PADS

## Features

- Store, access and manage PADS objects (such as parts, schematic, layout, BOM) as items in Teamcenter
- Create new product revisions or version updates for work in progress
- 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 PCB 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

At the user level, the Teamcenter integration supports the ability to open and save native design files, access approved parts, manage vendor part data, collaborate with mechanical engineers, generate visualization files, share fabrication and assembly data with suppliers and create 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 employ optional design-for-assembly analysis tools and powerful 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

Teamcenter's PADS integration enables users to 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

Teamcenter's integration with Mentor PADS supports:

- ECAD parts library
- Circuit card assembly (CCA) information
- Components on a CCA (BOM)
- Layout design data
- Schematic design data
- Secondary data (fabrication and assembly)
- MCAD and analysis interchange files
- Layout files in native tool ASCII file format
- Teamcenter neutral format files for PCB visualization

### Supported functions

- Open, save, check-in and check-out objects to/from Teamcenter
- Extract components and attribute information
- Generate bill of material (BOM)
- Place PADS objects under enterprise-wide revision control
- Manage PADS objects in structured workflows

### Options

- Facilitate enterprise-wide ECAD library management
- Manage PADS objects in change processes
- Link PADS objects to product/project requirements
- Leverage ECAD viewer and markup capabilities with suppliers
- Analyze layouts against assembly rules

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