SIEMENS

Teamcenter integration for Altium Designer

## Integrating Designer PCB design into your Teamcenter PLM environment

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

Summary

Teamcenter® software's integration for Altium's Designer PCB design system enables users to capture and manage their 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) system.

Managing the electronics product lifecycle

Teamcenter integration for Altium Designer 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 PCB design, collaboration and manufacturing data in Teamcenter – Siemens PLM Software's digital PLM platform.
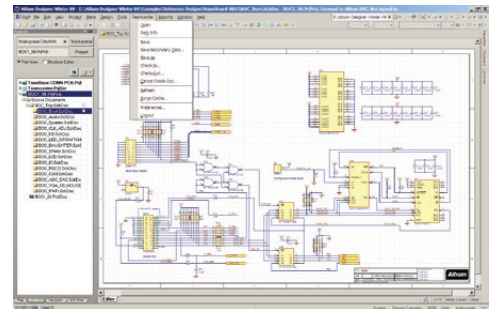
Teamcenter menu is embedded in the schematic and layout tools so designers never have to leave their native environment.

www.siemens.com/teamcenter
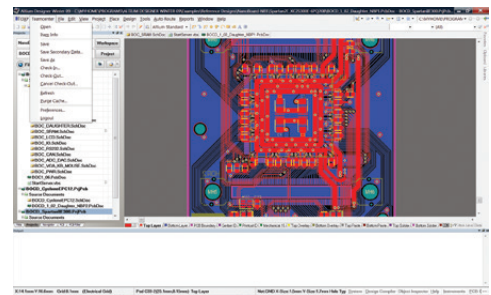
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Business challenges
- Integrating ECAD processinto product development process

- Managing ECAD data in the context of the overall product configuration

- Verifying environmental compliance

- Coordinating ECAD/MCAD collaboration

- Establishing communication within and across a multisite supply chain

- Ensuring that ECAD design implementation meets customer requirements

Features
- Store, access and manage Designer objects (such as 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

- Establish relationships between Teamcenter objects and engineering BOMs

- Share PCB design data across engineering domains through open interchange formats

- Associate and trace product requirements to PCB designs

Teamcenter menus, which are embedded in the user interface of Designer, allow the user to login to Teamcenter and open, save, check-in and check-out design data.

Providing a single source of product and process knowledge
Teamcenter Designer integration enables users to 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.

At the user level, the Teamcenter integration supports the ability to open and save native design files, 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 compare capabilities can be used to quickly identify any differences between BOM revisions.

When ECAD design procedures are brought under Teamcenter control, they can be incorporated into structured workflows and effective change management processes. By managing data in Teamcenter, product manufacturers can quickly identify, access and manage the creation, modification and release of their most critical ECAD data.

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 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 and annotate PCB layout data without the use of an expensive authoring tool. Many frequently used annotations are translated and displayed using the local language specified by the user's system.
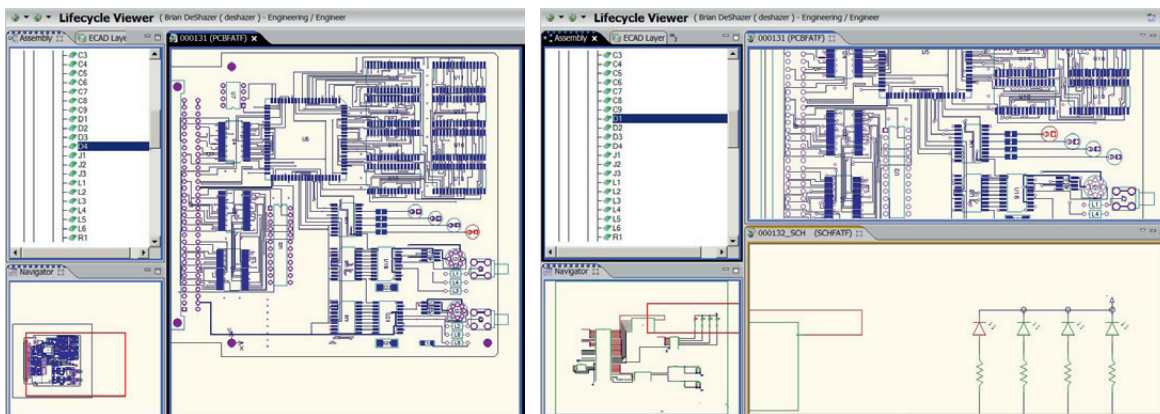
Design teams and suppliers can easily visualize and mark-up design issues.

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

Complete requirements management and traceability

Teamcenter integration for Altium Designer enables users to leverage Teamcenter 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 integration with Altium Designer supports:
- Circuit card assembly (CCA) information
- Components on a CCA (BOM)
- Schematic design data
- Layout 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 Designer objects under enterprise-wide revision control
- Manage Designer objects in structured workflows
- Options
  - Facilitate enterprise-wide ECAD library management

  - Manage Designer objects in change processes

  - Link Designer objects to product/project requirements

  - Leverage ECAD viewer and markup capabilities with suppliers

  - Analyze layouts against assembly rules