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Siemens PLM Software

Teamcenter integration for Cadence Allegro products

Integrating Allegro PCB design into your Teamcenter PLM environment

Benefits
- Manages entire PCB product lifecycle
- Provides a single source of product and process data
- Facilitates today's collaboration and concurrent engineering initiatives
- Leverages requirements management

Business challenges
- Product development organizations use multiple ECAD and MCAD design systems
- Product teams need to access and share all of the diverse information that they create
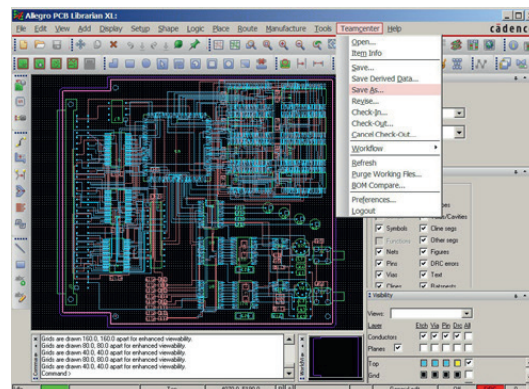
Summary
Teamcenter® software's integration for Cadence Allegro PCB design enables companies to accelerate time-to-market and reduce development cost by allowing users to capture their schematic, PCB, bill of material (BOM), fabrication and assembly data in Teamcenter – the world's most widely used product lifecycle management (PLM) solution.

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

Managing the electronics product lifecycle
The Teamcenter integration for Cadence Allegro PCB Design enables users to capture PCB design data (schematic, physical layout, BOM, fabrication, assembly and visualization data) created under Allegro and store/manage this information within Teamcenter – Siemens PLM Software's digital PLM backbone. Teamcenter's Allegro 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.

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Teamcenter integration for Cadence Allegro products

Business challenges
continued
- Design teams are located in multiple sites or dispersed across a multivendor supply chain

- Product change and approval processes take too long

Features
- Create, edit and store Cadence Allegro objects (schematic, components, PCB, BOM, etc.) as items in Teamcenter

- Leverage Teamcenter menus embedded in the Cadence Allegro user interface to facilitate ease of use

- Manage designer's selection and use of approved components

- 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

- Create new product revisions or version updates for work in progress

- View, annotate and mark up design data in a collaborative environment

- Establish security and data access control

Providing a single source of product and process knowledge

Teamcenter's Allegro integration enables users to access, manage and archive PCB design data in a single secure location. The integration lets users open and save native design files, access approved components, populate electrical component BOMs and share fabrication and assembly data – as well as create and manage derived files directly in Teamcenter.

Teamcenter menus, embedded in the Allegro user interface, allow the user to automatically login into Teamcenter and open, save, check-in and check-out design data. Adhering to the Teamcenter mechatronics data model, design teams are assured their ECAD data is accurately captured and consistently managed in the Teamcenter environment.

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.

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.

Users can quickly understand and diagnose potential design errors within one or more design domains by leveraging the integration's neutral viewer technology. This capability allows team members to view and mark up design issues.
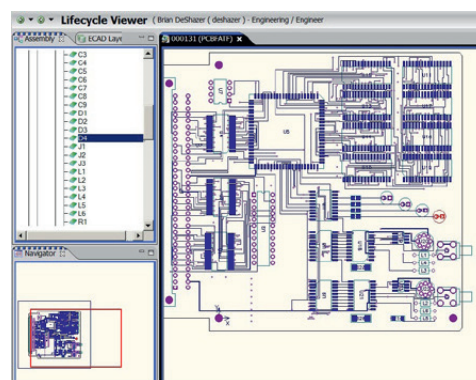
Design teams and suppliers can easily visualize and mark-up design issues.
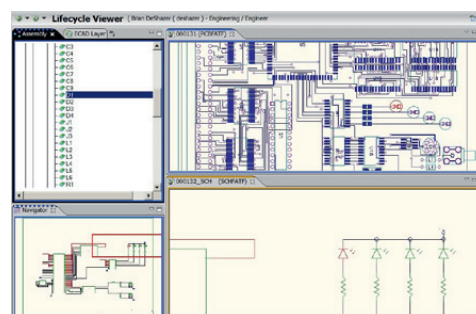
Electrical engineers and PCB designer can cross-probe between schematic and physical layout to zero in on objects of interest.

Users can take advantage of Teamcenter's ability to add 2.5D/3D elements to a physical layout to facilitate packaging analysis. This enables designers to analyze a package for appropriate thermal and mechanical interferences, as well as for other behaviors that need to be assessed to ensure product quality and reliability.

Complete requirements management and traceability

Teamcenter's Allegro 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

The integration with Cadence Allegro captures:

- Circuit card assembly (CCA) information
- Components on a CCA
- Schematics
- Allegro design data
- Secondary data (fabrication and assembly)
- MCAD and analysis interchange files
- Allegro layout file(s) in native tool format
- Schematic file(s) in native tool format
- Neutral format files for PCB and schematic visualization

Supported functions

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

Options

- Facilitate enterprise-wide ECAD library management
- Manage Allegro objects in formal change processes
- Link Allegro 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
- Facilitate enterprise-wide ECAD library management