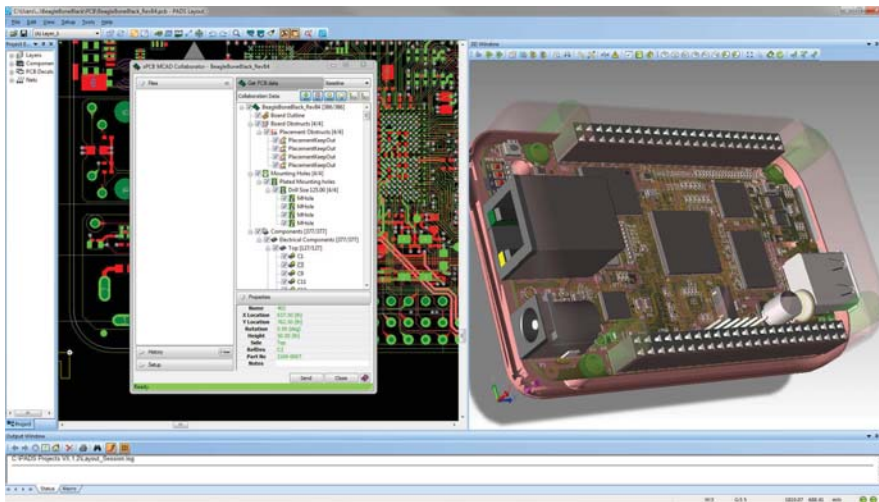




## MCAD Collaborator Option for PADS Standard Plus and PADS Professional



Adding ECAD-MCAD collaboration to PADS Standard Plus or PADS Professional breaks down the communication barriers between the electrical and mechanical domains.

### OVERVIEW

Communicate design intent between electrical and mechanical CAD systems using the PADS® MCAD Collaborator option, available with PADS Standard Plus and PADS Professional. With this option, you can preview and consider design proposals, then accept, reject, and counter-propose design proposals between disciplines at any time throughout the design process. Designers stay in their comfort zone because ECAD and MCAD design remains in its respective tool, making collaboration effective and convenient.

With PADS MCAD Collaborator you can easily collaborate within your own environment, consistently and iteratively, with an intuitive 3D visualization of both the PCB and enclosure. Fast and effective communication between you and your mechanical counterpart means you get your products to market faster, while keeping development costs low.

### MAJOR BENEFITS:

- Supports all major MCAD vendors
- Shortens design cycle with real-time communication
- Reduces costly prototypes, improves product quality, reliability, and performance
- Replaces paper and verbal communications, for speedy and error-free design changes
- Provides a graphical platform for collaborative “discussions,” ensuring you meet both ECAD and MCAD design requirements
- Supports “what-if” scenarios in a graphical representation

**“Best-in-class companies are 23% more likely to use integrated MCAD/ECAD tools”.**

Source: Why Printed Circuit Boards Design Matters, 2010 Aberdeen Group

## ECAD/MCAD COLLABORATION FROM YOUR OWN ENVIRONMENT

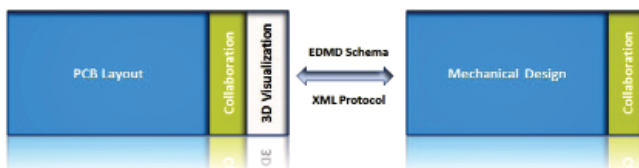
The PADS MCAD collaboration option utilizes the ProSTEP iViP format to enable effective real-time collaboration. Developed in a joint effort with the industry's leading ECAD and MCAD tools, including PTC® Creo®, Siemens® NX, and Dassault Systèmes' SolidWorks® and CATIA®, this schema enables accurate and timely bi-directional communication of incremental design change data between ECAD and MCAD domains.

Easy-to-use controls guide you through the steps of design change proposal, rejection, acceptance, and ultimate agreement and design synchronization. Unlike IDF, which overloads communication by transferring more design data than necessary, PADS MCAD Collaborator uses IDX data exchange files to transmit only the data needed to propose changes to the MCAD team.

The reverse is true when the mechanical team wants to communicate changes to you. Either you or the MCAD team can easily propose changes. Once a mutual agreement is reached, any required changes are updated automatically in the database for synchronization.

By transmitting only relevant data for change proposals, you preserve your intellectual property. This is particularly important in cases where you and your mechanical counterpart are not part of the same company. There is no need to learn tools particular to the other discipline because both you and the mechanical designer can view the proposed changes in your own design environment during the collaboration process. You can also include notes or comments for each data element, and for the collaboration data file itself, in order to provide feedback or other relevant information to each other.

Collaboration is possible in real-time or in batch mode via a shared directory, email, or a Dropbox location, for collaboration across different time zones.



*PADS ECAD-MCAD collaboration provides a two-way path for all data between design environments to allow designers to view and make changes in their own environment.*

## A TYPICAL USE CASE (ECAD INITIATED)

- The following bullets describe a typical use case of a change proposal made between ECAD and MCAD using the PADS MCAD Collaborator option.
- The ECAD engineer proposes a new component location to MCAD in a collaboration session.
- The MCAD engineer evaluates the change in his/her own design system and determines the new location will be problematic, so s/he rejects the proposed change and proposes an alternative location that won't adversely affect the mechanical enclosure design.
- You review the suggestion in PADS MCAD Collaborator and find it satisfactory. You apply the change in PCB layout and send an acceptance notice back to MCAD.
- Both you and the mechanical engineer automatically update your design databases with the same change to keep them synchronized. The transaction is logged and tracked by the PADS MCAD Collaborator.

## 3D VIEWING OF COLLABORATION DATA

As the collaboration preview between you and the MCAD team takes place in the 3D viewer, you can browse and import exact 3D models. This provides a true rotational 3D view of the design that can be inspected visually for interferences between ECAD and MCAD items.

For example, receiving an MCAD proposal and previewing a mounting hole that's been placed in an unacceptable location for your team will justify the rejection of that hole. Rejections can be accompanied by a collaboration note that tells the MCAD engineer why the hole was rejected. This enables the MCAD engineer to decide if a design change is warranted.

## INTELLIGENT 3D MODELS FOR PADS PROFESSIONAL

If you're using PADS Professional, get the 'Advanced 3D' option. In addition to the capabilities of the PADS MCAD Collaborator, the Advanced 3D option provides access to more than 4.4 million manufacturing part numbers from 237 vendors with 26 package types covering 48 types of electric functionality.

Unlike 3D models that can be imported from vendor web sites, Mentor Graphics' 3D models are intelligent,

including attributes such as pin-1 identification, precise pin positions, geometry and contact areas, up to 22 physical properties for each part definition, and much more. With this 3D model library, you can search for models based on parametric queries, align models to footprints automatically, and take advantage of the models' embedded intelligence to use them in other types of analysis as well.

## SUMMARY

To prevent physical violations from occurring when a PCB is placed within an enclosure or system, electrical and mechanical designs must take component and

mechanical clearances into account. The MCAD collaboration option for PADS Standard Plus considers mechanical requirements during layout and efficiently communicates them between the electrical and mechanical flows. The Advanced 3D option for PADS Professional extends your 3D capabilities with millions of intelligent 3D models that make it easy to find the models you want and align those models to footprints.

With PADS, you can be sure your designs are correctly aligned for manufacturing, thereby helping to avoid re-spins and the discovery of conflicts and interferences during assembly and installation that cost time and money.

For the latest product information, call us or visit: [www.pads.com](http://www.pads.com)

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