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Introduction to Pro/Concept 2.0

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PTC Product Focus

Introducing Intercomm – The ECAD Collaboration Standard

PTC's most recent acquisition is Ohio Design Automation the creator of Intercomm. The acquisition itself is a key component of PTC's ongoing initiative to combine both the MCAD and ECAD (Electronic Computer Aided Design) design processes into a single product lifecycle management system.

Intercomm™ is an effective Electronic Design Communications product that uses the Internet to address the problem of sharing complex design data in a simple way. Anyone in an organization can browse the information contained in schematic CAE or PCB CAD databases, query intelligent design data, cross highlight between databases, and communicate changes, comments or red-line data back to the EDA (Electronic Design Automation) user electronically. It even offers you a way write notes in different languages just in case you're collaborating on a global scale.

PTC will preserve InterComm as the open standard for electronic design visualization, verification and collaboration, providing neutral access to all major EDA software solutions.



The .EDA File Format

Intercomm' neutral .EDA file format is a single binary file that replaces directory and file complexity of the native EDA data containers for enabling enterprise-wide distribution outside of the EDA tool environment. This offers a file that is smaller than the original EDA data container and very fast load into *InterComm*.

In addition the .EDA neutral database provides password protection against unauthorized use and date expiration for planned obsolescence are attractive benefits of using Intercomm' file sharing format. Source and owner information can be stored for traceability along with an Interactive Disclaimer dialog box for enforcement and clarification of the intended use.

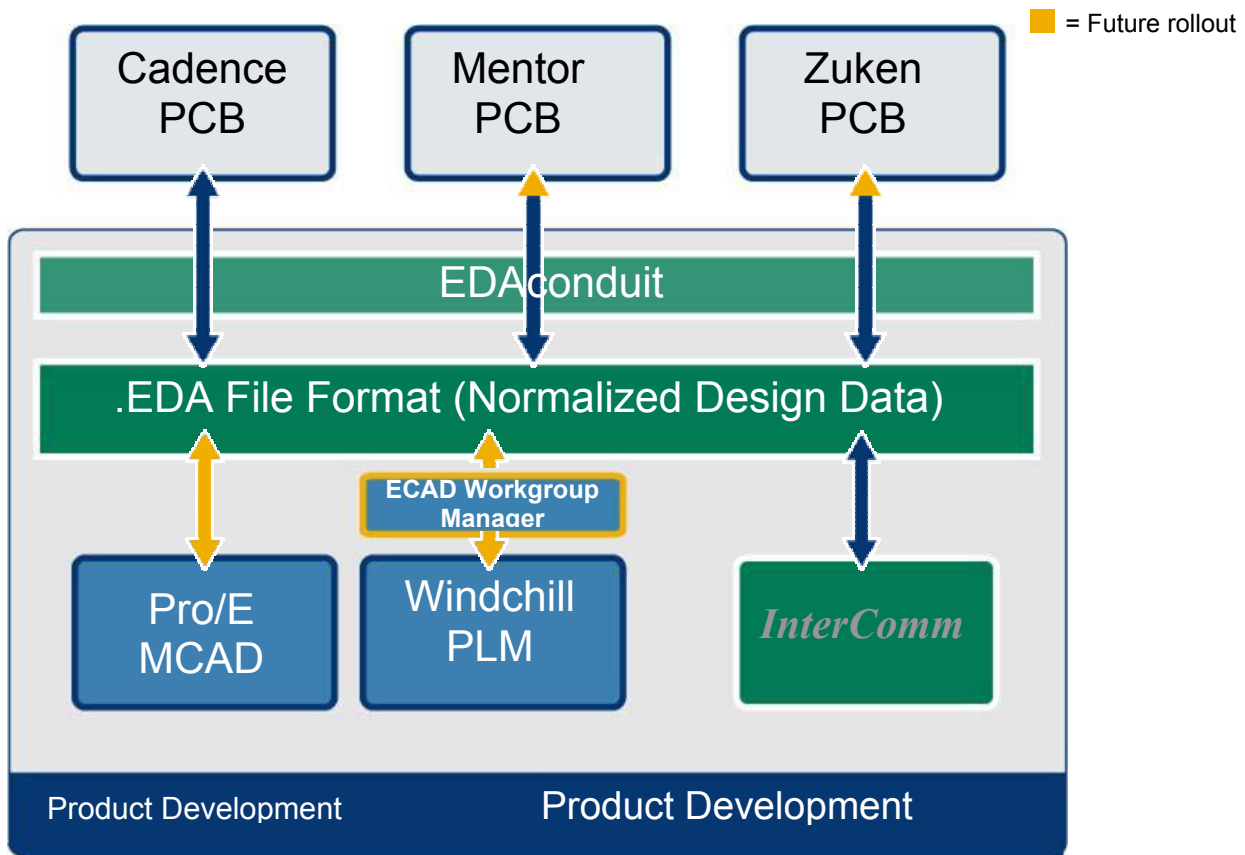
The .EDA file in summary offers a normalized data distribution format for all EDA databases, and minimized storage requirements during collaboration. Other key values include full protection against unauthorized use of data through password protection and a database which has been optimized for fast processing by InterComm which allows transferring ECAD data via internet less cumbersome.

EDAConduit

Another important tool set aligned directly with Intercomm is EDAConduit. It eliminates manual steps for outputting the neutral .EDA format by providing a fully automated bi-directional link between native ECAD systems and *InterComm*. In addition a Batch (command line) generation of .EDA files out of the native Schematic capture and PCB layout tools may also be performed. Back-annotation of *InterComm* markups back into the native Schematic capture or PCB layout environment gives CAD operators easy data verification within a familiar environment. Cross highlighting of equivalent design data between *InterComm* and the native Schematic capture and PCB layout tools may also be performed.

EDAConduit automates the enterprise-wide deployment of EDA design data (simpler, faster, and smaller) providing a communication vehicle so PCB designers can collaborate with *InterComm* users through their native EDA tools. Hardware engineers can access PCB CAD information relative to their EDA tool and EDA authors and non-authors can collaborate effectively with respect to design data throughout the product design cycle.

Neutral .EDA & EDAConduit Process Flow Chart



Typical Collaborative Processes Today

Current electronic design collaborative processes existing in today's high tech industry range from very sophisticated to very unsophisticated. Design collaboration and verification without Intercomm in place could include using the native ECAD tool environment, paper plots, .PDF plots and EDA vendor viewers etc. Following are some rebuttals to these examples:

- Using the Native tool for design review can be very expensive and a large learning curve for most companies. Intercomm will provide direct access to the native database with the concern of sending the original large data container between internal team members.
- ECAD full-featured systems cost – \$50k to \$100K + \$8.5k/yr to 25K/yr maintenance cost plus very extensive training – since no PCM engineers have the workstation or are trained properly, engineers wishing to review their designs on ECAD must sit with the board designer, which greatly reduces efficiency in ECAD. Additionally careless mistakes can be made to the core by an untrained ECAD tool user just trying to view critical data.
- Paper plots – so difficult & time consuming to use that most engineers can only give the design a cursory review and mistakes are missed and missed again.

- Current EDA Vendor ECAD Viewers – most are very cumbersome to use; only 1 or two PCM engineers know how, and they are not very practiced. Only 1 license currently available for PCM; extensive training required

Intercomm' Cross Departmental Benefits at a Glance:

Management:

InterComm will increase enterprise-wide efficiency by facilitating the communication of meaningful design data. Management can monitor progress and make key decisions at any time during the project to allocate resources to improve/meet project schedules.

Design Engineers:

InterComm can save engineering time during review of layout (placement, critical routes, and full layout). It simplifies the interaction with the PCB layout group and allows a much more thorough review of a work-in-process design.

Hardware Engineers:

InterComm reduces time-to-volume manufacturing by making intelligent data available sooner. Products can be designed more efficiently, tested more easily, and released to manufacturing faster, resulting in faster time-to-market.

Test Engineers:

InterComm will reduce debug and repair time by providing technicians with instant access to design information. We can find test points faster, review designs and debug issues without compromise.

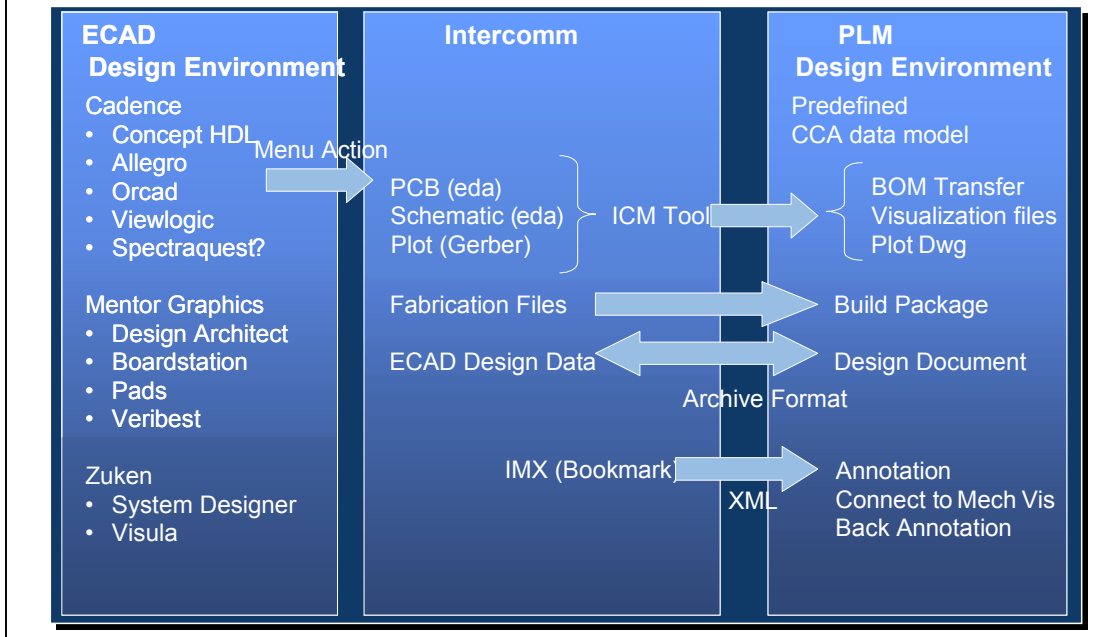
Manufacturing Engineers:

InterComm allows us to complete our manufacturing planning sooner. We can also input manufacturability concerns and issues that directly affect yields.

PLM Integrations

InterComm is integrated with many of the most popular commercial PLM systems. This integration delivers a controlled environment for distributing and accessing EDA design data between globally dispersed teams. The defined process flow is as follows:

EDA High Level Interface Architecture



By integrating *InterComm* with PLM environments, a company is able to manage its EDA design data in an extended enterprise that enables you to work concurrently with your entire design chain. Once this integrated solution is in place, your company can benefit from a series of ambitious business initiatives, including: work-in-process design review, time and cost eliminations from your electronic product design, cross-discipline collaborative product development, and controlled change management.

API Toolkit

InterComm's also comes with an API toolkit allow allowing customers to data-mine both the parametric and graphical design data of the fully intelligent database captured in *InterComm*. Some example API programs and reports are: Compare design BOM with an external BOM report, Generate custom Net Length report, Generate custom Netlist report, generate testability reports, find components by Ref Des, create user-definable design rule checks, add user-defined property, communicate a design summary, highlight pins, components and nets Etc. The API is C++ based

API Toolkit Functional Values Include:

- Included with *InterComm*.
- Unrestricted data mining for all design objects including their attributes and properties.
- Standardized API calls regardless of the native EDA tools.
- Accessible via all major programming languages such as C, C++, Java, Visual Basic, etc.
- Can be used from within *InterComm* – custom interactive commands and reports.

- Can be used from within *InterComm* – programming links to other processes.
- Can be used from outside of *InterComm* with graphics – a slave process.
- Can be used from outside of *InterComm* without graphics – pure data mining.
- Fully documented and with an interactive debugging tool.

Intercomm Key Points

Intercomm is a mature, field-proven technology for enterprise-wide sharing, reviewing, annotating, and verifying of electronic design intent.

InterComm Main Features:

- *In use by over 400 companies in more than 20 countries.*
- *Reduces design time by up to 1/3*
- *Browse, query, markup and share printed circuit board (PCB) design data*
- *Access electronic design automation (EDA) data from Cadence Design Systems, Mentor Graphics, Zuken and others*
- *Query intelligent ECAD design pin, net and component data to verify design intent*
- *Highlight, measure and identify design issues without the EDA tools*
- *Cross-highlight between the schematic, layout and bill-of-materials*
- *Redline mark-up in any language worldwide and communicate with internal design, engineering, test and manufacturing teams*
- *API enables custom applications to improve the internal process*

Customer Acknowledged *InterComm* Advantages:

- *Increased design team communication time by 55%*
- *Eliminated one design spin per board, savings can be weeks or months*
- *Reduced overall design cycle time by 30 - 35%*
- *Reduced tooling costs by 25%*
- *Improved design and manufacturing team capacity by 22%*
- *Improved internal and supply chain communication with dispersed engineering, test and manufacturing teams*
- *Realized a 65% productivity gain in board test alone*
- *Improved design integrity (right the first time) with fewer design spins*
- *Test and repair anomalies found in-process rather than later in the process*
- *Reduced design review time from days to less than a day*

Partner Quote:

“Many people within an enterprise, not just the core design engineering team, need to view, make changes, and put back in process electronic designs. By gaining instant access to EDA outputs from toolkits provided by vendors such as Mentor Graphics and Cadence Design

Systems, users across multiple levels of an organization can engage earlier and keep designs on track,” states Vito Foderaro, Vice President, High Tech/Aerospace and Defense. “Instead of relying on printed outputs and sneaker nets, users can quickly identify gaps between the schematic and layout, saving organizations valuable time and money through reduced scrap, rework, debug and repair time.”

Sign up for an online demonstration of Intercomm -

http://www.ptc.com/appserver/it/icm/cda/template_lib/events/series.jsp?&im_dbkey=22398&icg_dbkey=141

Intercomm' informational site -

http://www.ptc.com/appserver/it/icm/cda/template_lib/product/icm01_product_v.jsp?&im_dbkey=21540&icg_dbkey=201

External FAQ on PTC's Acquisition of OHIO Design Automation, Inc. -

http://www.ptc.com/go/ohiodesign/external_faq.htm

Intercomm is for use on Windows NT/2000 & SUN Solaris platforms.

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Tips of the Week

Creating Snapshots of Dynamic Assemblies in Drawings

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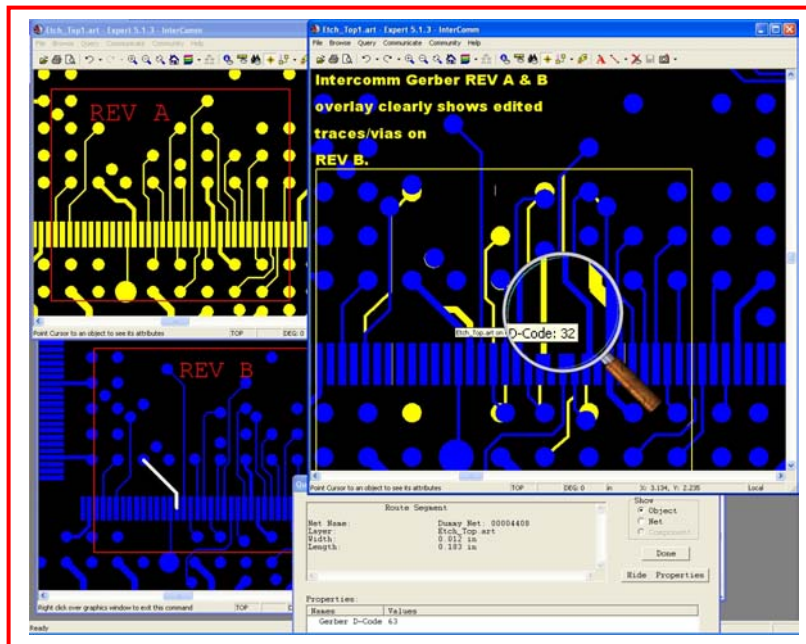
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Tips of the Week

Intercomm – Legacy Gerber Control Through Comparison

In certain instances Contract Manufacturers (CM) can be foe instead of friend during electronic product lifecycle management without even realizing it. Since time is always a major factor during production a CM might take the liberty to edit a printed circuit boards (PCB) Gerber image data it has on hand to save the time it takes and go back to the source asking for the changes to be made. This may be good for production cycle time but an archival nightmare for the originator of the product data; whom in the future may send what they think are master Gerber's out to production again, or to another CM only to find out too late, their master Gerber are revisions behind; ultimately wasting time, money and materials.

Intercomm easily aids users by performing a Gerber to Gerber overlay comparison. This, as you can see below, quickly identifies changes between revisions.



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Announcements

PTC Tips & Techniques Newsletter Archives

Miss an issue! Can't find that awesome technique you read about? Fear not, you can click on the link below and go through our Customer PTC E-Newsletter archives.

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It's better than finding the Covenant of the Ark!

PTC Tips & Techniques Webcasts: Work Smarter. Not Harder.

Click below to see regularly scheduled Tips & Techniques technical Webcasts that are designed to provide you with the most popular time-saving tricks that Pro/ENGINEER users of all skill levels will find useful. Get more out of your maintenance dollars!

[Tips & Techniques: Work Smarter Not Harder!](#)

Hands-On Workshops

Experience and receive the next generation of CAD - Pro/ENGINEER Wildfire. During these workshops you can try it yourself to experience this breakthrough in simple, powerful, and connected in CAD software.

http://www.ptc.com/appserver/it/icm/cda/template_lib/events/online.jsp?im_dbkey=17625&im_language=en

Special Hardware offers for customers updating to Pro/ENGINEER Wildfire

http://www.ptc.com/partners/hardware/current/wildfire_tlo.htm

<http://www.3dlabs.com/PTC/>

PTC Sponsored Events

Click below to see PTC sponsored events:

<http://www.ptc.com/company/news/events/index.htm>

Thinking About Pro/ENGINEER Wildfire? Check this out.



<http://www.ptc.com/go/engineering/index.htm>

E-PROFILES IS HERE!!

We have been eagerly anticipating the debut of the new electronic version of Profiles Magazine and now it is here! This new web site will supplement the print edition of the magazine and will provide new useful features not feasible with paper media. e-Profiles will provide you with 24x7, worldwide access to key information previously available exclusively in the print version. "Tips & Tricks," a popular feature pioneered by Pro/USER, has also moved to the web and will be expanded as the site matures. Future plans include several foreign-language editions of Profiles for our many international readers. Currently, Profiles is printed in English and Japanese.

Please take a few minutes to check out this new web site. We don't think you will be disappointed.

<http://profilesmagazine.com/>

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Upcoming Events & Training Class Schedules

Upcoming, 2004 Your local Pro/Engineer User Groups
<http://www.ptcuser.org/rugs/>

June 5 - 8, 2005 Orlando, FL
PTC/USER International Conference
<http://www.ptcuser.org/>

Please visit the [PTC Education Services](#) website for the latest training information including course descriptions, schedules, locations, and pricing.

- Attend a course at any PTC Center and receive a **free** copy of Pro/ENGINEER Wildfire Student Edition!

<http://www.ptc.com/services/edserv/index.htm>

PTC

Note: This PTC E-Newsletter will continue to be used for the following:

- 1) Inform you on events related to PTC products (user groups, conferences, training schedules, etc.)
- 2) Educate you on solutions that are available at PTC
- 3) Tips & Techniques using PTC Products

Note: These messages are compiled in the local PTC office and will be distributed via e-mail.

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