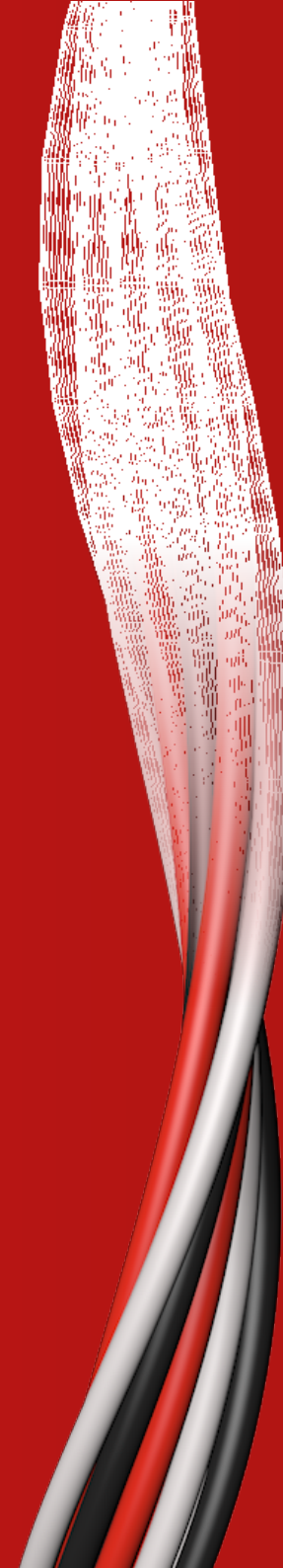# CADONIX

CLOUD-
BASED ECAD
SOFTWARE:
**A GUIDE TO THE
BENEFITS AND
BEST PRACTICES**

LEVERAGING TECHNOLOGY TO WORK SMARTER, NOT HARDER

Product design is becoming more complex as customers demand connected features. As more electronics and software are being incorporated into designs, documentation, verification of electrical behavior, collaboration — all of it and more has to happen at early stages to prevent any duplication of efforts and expensive design changes.

DESPITE INCREASING COMPLEXITY, WHAT HASN'T CHANGED IS TIME TO MARKET.

Spreadsheets and 2D MCADs were fine when electrical designs were simple, but now they're just not feasible in terms of cost and time.

The right cloud-based ECAD software offers an end-to-end solution, streamlining every aspect and detail of your processes. This is about working efficiently and more productively. You're designing for new technologies — using traditional ways of working is a hindrance. By using new technology, you can significantly reduce your time and costs.

You're designing for new technologies — using traditional ways of working is a hindrance. By using new technology, you can significantly reduce your time and costs.

WHAT IF YOU WERE ABLE TO CREATE FASTER, BETTER-QUALITY WIRE-HARNESS DESIGNS WITH ACCURATE MANUFACTURING DATA?

You'd save significant time, reduce errors, and improve the service you offer customers.

1. RIGHT FIRST TIME

Automated design rule checks ensure that your drawing can be built correctly the first time.

2. MCAD INTEGRATION

Export schematic and import 3D geometry, saving hours of manual drawing.

3. INSTANT QUOTING

Automatically and accurately quote BOM and calculate labor for every manufacturing step.
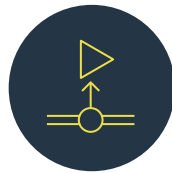
4. BUILD-TO-PRINT

Accurate report generation for OEMs detailing the total cost to build to print, with no BOM creep.

5. AUTOMATIC MANUFACTURING REPORTS

Detailed reports create a seamless interface between engineers and manufacturing technicians.

6. AUTOMATED HARNESS TESTING

Generate test code directly from your drawings, ensuring that your harness builds match your CAD 100%.

7. SERVICE DOCUMENTATION

Automated clear and reliable documentation for use in manufacturing and service.

COLLABORATE IN REAL TIME

WORK FROM ONE DOCUMENT INSTEAD OF MAKING MULTIPLE COPIES

With on-premise software – software installed directly on your computer and hosted on your server – your drawings and data are stuck there. Working on the cloud and with best-in-class software enables you to work collaboratively with your purchase team, suppliers, and wider engineering teams in real time.

CLOUD-BASED TECHNOLOGY LETS THE RELEVANT PEOPLE INSPECT YOUR DRAWINGS WHEREVER THEY ARE.

Updates are made in real-time, which means that team members always have access to the most current version of the design and data. With on-premise software, multiple versions of the same document create confusion. Cloud-based software eliminates that problem. Everyone is on the same page, no matter where in the world they are.

OUTCOMES: COLLABORATING ON THE CLOUD

☁ INCREASE EFFICIENCY – Everyone collaborates on the latest version in real time, streamlining processes

☁ IMPROVE PRODUCTIVITY – Bottlenecks eliminated; teams are able to work faster without having to wait for updated information and decisions

☁ EASY ACCESS – Any relevant person in the value chain can quickly access the documents they need

☁ BOOST CREATIVE PROBLEM SOLVING – Communicate ideas with real-time comments, sparking ideas from other team members

SIMPLIFIED VERSION CONTROL

Cloud-based collaboration tools often offer version control, which allows team members to work on the same document without worrying about conflicting changes. This ensures that everyone is working on the most up-to-date version of the document.

CADONIX

MAKE BETTER DECISIONS

MANAGE YOUR DESIGN PROCESS EASILY WITHIN AN INTEGRATED DESIGN ENVIRONMENT

The ability to use software that integrates with other modules opens up an entire world of efficiencies. It presents the opportunity for end-to-end, streamlined processes. Users can create and manage different variants of a wire harness design, including component selection, wiring diagrams, and BOM. They can collaborate more effectively with other teams and make smarter decisions based on a broader range of information and exchange of ideas.

MANAGE COMPLEXITY BY PROVIDING A CENTRALIZED LOCATION FOR TRACKING AND MANAGING EVERY ASPECT OF THE QUOTING, DESIGN, TESTING, AND MANUFACTURING PROCESS.

Imagine the ability to visualize, simulate, and automate testing of different design options. This can help engineers make more informed decisions about which design options to pursue and which to discard, ultimately resulting in better-designed products.

⤭ BETTER VISIBILITY INTO THE OVERALL DESIGN – make more informed decisions about how to modify the design to avoid conflicts or ensure compatibility with other components.

⤭ FASTER DESIGN ITERATIONS – test different design options and evaluate their impact on the overall system more quickly.

⤭ IMPROVED ANALYSIS AND SIMULATION – analyze and simulate the performance of the wire harness under different conditions and identify potential issues before they arise.

OPTIMIZING THE DESIGN PROCESS REDUCES REVENUE LEAKAGE

Best-in-class wire-harness-design software can save hundreds of hours per year in time. That represents lost revenue when your team could be focussing that time on value-added tasks. The ability to use end-to-end processes enables you not only to work faster, but with more accuracy and insight. Ultimately, that leads to making smarter decisions.

CLOUD-HOSTED, SECURE, AND RELIABLE SERVERS

NO NEED TO INVEST IN HARDWARE OR PAY FOR MAINTENANCE AND UPGRADES

With cloud-hosted servers, you only pay for the resources you use. As your business grows, your cloud grows with you, without the need to purchase additional hardware or worry about managing and maintaining it. In fact, choose the right one and it's a fully managed service. Compare that to hosting your own servers on premise, which requires you to do all the work.

SHIFTING TO THE CLOUD IS A SMART SECURITY MOVE THAT REDUCES THE RISK OF DATA BREACHES.

Cloud-hosted servers perform daily backups for you. They have advanced security measures in place, such as firewalls, encryption, and access controls, to protect your data from unauthorized access or theft. This can help you meet compliance requirements and reduce the risk of data breaches.

Unlike on-premise servers, you can access cloud-hosted services from anywhere in the world. All you need is an internet connection and you can work remotely and collaborate with team members wherever they are. Upgrades are also seamlessly made for you, without downtime being necessary — with the right cloud hosts, you'll always work on the most up-to-date software.

THE IDEAL CLOUD SOLUTION

You find what you think is the perfect cloud-based software. But always check who the cloud host is. Ideally, you want:

- ☁ FULLY MANAGED SERVICE – everything handled for you, including security
- ☁ AWS GLOBAL INFRASTRUCTURE – vast network of data centers, edge locations, and other resources
- ☁ DAILY BACK UPS – ensures you always have the most recent version of your data in the event of a system failure
- ☁ SERVER REDUNDANCIES – in case of a hardware failure, a back-up server can take over
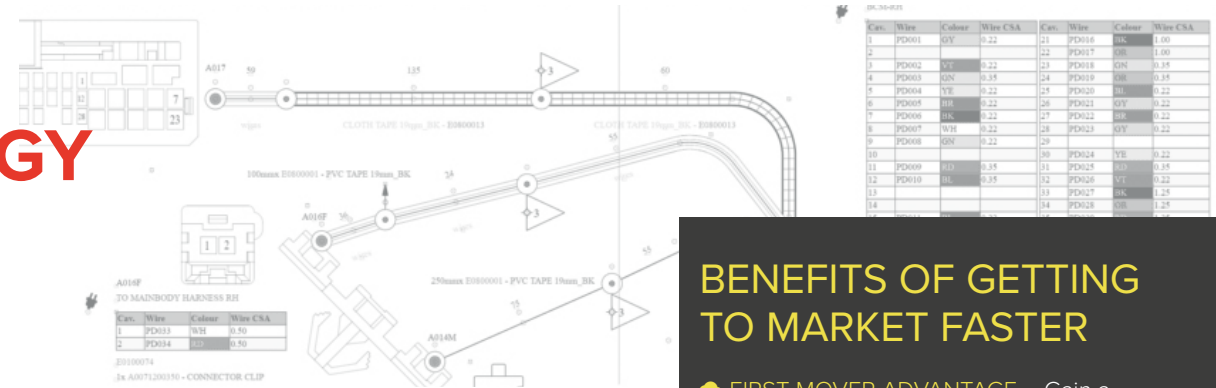- ☁ SCALABLE SERVICE – a cloud that scales up or down as required by your needs

WHAT TO LOOK FOR IN A CLOUD HOST

Reliability is crucial. Example: cloud-based software hosted by Amazon Web Services (AWS) provides physically separate data centers interconnected through high-speed, private fiber-optic networks. This gives you a high degree of redundancy and ensures that your applications can continue running in the event of a localized outage or disruption.

LEVERAGE A FASTER
GO-TO-MARKET STRATEGY

FASTER COLLABORATION WITH MANUFACTURERS CREATES A WIN-WIN SITUATION

Just as you can collaborate with your internal team and supply chain, you can also collaborate with manufacturers. Several things can happen here. Before, you most likely had a lot of back and forth emails or meetings with your manufacturer. Best-in-class wire-harness-design software can automate and generate the documentation, lists and BOM for you. It reduces the need to collaborate by giving manufacturers precise and accurate data right out of the box.

BETTER PROJECT VISIBILITY AND MANAGEMENT REDUCES THE RISK OF DELAYS OR MISSED DEADLINES.

But when collaboration is still necessary, the cloud makes it fast. Design issues can be quickly identified and resolved, without the need for lengthy meetings or even prototypes.

This allows teams to iterate designs more quickly, reducing the overall development time. You can track progress and manufacturers can spot any potential roadblocks.

BENEFITS OF GETTING TO MARKET FASTER

☁ FIRST-MOVER ADVANTAGE – Gain a competitive advantage over other players in the market, translating to increased market share and higher profits

☁ INCREASED REVENUE – Generate revenue sooner by making your application available before your competitors' products

☁ REDUCED DEVELOPMENT COSTS – Identify and correct design flaws or manufacturing issues sooner, preventing costly rework

☁ IMPROVED CUSTOMER SATISFACTION – Establish your brand as a leader in the industry, which can improve customer perceptions and loyalty

WORK TOGETHER MORE EFFICIENTLY ON THE CLOUD

By working on a centralized platform, you can work with your manufacturer more efficiently, with faster feedback loops. Any issues can be resolved quicker. For example, engineers can share designs with manufacturing teams, who can provide feedback on manufacturability or suggest alternative designs, leading to faster product development.

USING DESIGN AND MANUFACTURING DATA TO DRIVE INSIGHTS

INSPECT AND IMPLEMENT CHANGES QUICKLY TO KEEP COMPETITIVE

By capturing information about your wires and circuits with schematic software, you hold valuable data. Simulating your design to see how your circuits interact with each other brings that data to life. Design rule checks can even validate your design against a Component Database. From your browser, you can gain insights into what's happening and where. You can then act accordingly and make any adjustments to optimize your system right then and there.

INSIGHTS ARE MADE POSSIBLE THROUGHOUT THE END-TO-END PROCESS FROM BOTH DESIGN AND MANUFACTURING DATA.

You can make informed decisions every step of the way, including automated manufacturing output and costing. By analyzing data, you can also identify potential bottlenecks, errors, and inefficiencies in your current design, and make changes as needed, eliminating the need for costly rework.

ADAPT FASTER TO CHANGING ENVIRONMENTS

1. As technology advances, new products and features are introduced.

2. Your wire harness may need to change quickly to stay competitive.

3. The data you hold helps you adapt to these changes efficiently.

4. You can reduce the time to market, enabling you to remain competitive.

YOUR DATA HELPS BOOST YOUR HARNESS MANUFACTURER'S EFFICIENCY

You can share your data with relevant parties, such as OEMs and harness manufacturers. This ensures they get accurate, technical data up front. Compare that way of working versus the traditional way of sending an outline design without any terminals, seals and other components. No more wasted efforts. By working efficiently, you enable your manufacturer to be efficient too.