

Welcome!

Electrical and automation engineers have been long left behind in the digital model evolution. As if their projects should not rely on a set of tangible commercial components, cables and ducts. As if these materials should not be located consistently with the drawing logic and the physical environment of the enclosure or machine.

*The technological gains offered by **elecworks** for SolidWorks are spectacular. It is a fact that its editor, Trace Software has taken advantage of its experience. For over 22 years trace Software has been a leader in creating software for electrical CAD.*

The SolidWorks marketplace offers high demand from companies designing equipment and custom machines. Trace Software has concluded a tight development partnership with DS SolidWorks to achieve an intelligent integration of materials and wiring in the 3D model.

*Another powerful position for **elecworks** is the relationship between Trace Software and TraceParts, a worldwide specialist of component libraries for CAD users. Quick access to 3D models of distribution, automation and control materials is provided as key functionality within the solution.*

With these two partnerships, Trace Software has succeeded in merging the mechanical and the electrical schematics' worlds together in a common project. Thus allowing the industrials market to do the same...

Best of all is the opportunity for the « electrical » community to join our 3D newspaper readers!

So, welcome and happy interactive reading!

Denis LOURME
CAO.fr portal Director

 **trace software**

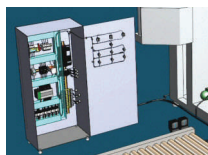
elecworks™ for solidWorks



... taking electrical CAD into the third dimension!

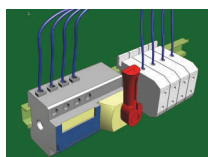
Trace Software International **elecworks electrical CAD system lets electricians, control engineers and mechanical engineers collaborate together on their projects. This new generation of design software interfaces in real-time with the 3D SolidWorks digital model to allow quick and consistent placement of components in the panel or machine, to wire and automatically route them all and to integrate the data in SolidWorks Enterprise PDM, ...**

Cooperation with the world of mechanical is even more evident with **elecworks seamless access to 3D electrical model components provided within the portal of **TracePartsOnline.net!****



2D/3D : the current flows

elecworks pour SolidWorks : presentation
3D model: machine project – panel and wiring



eCP : live components

3D model: «electrically» smart components
elecworks Core : primarily designed for electrical CAD



Interview with Pedro Puig Deu

Four questions to Pedro Puig Deu, Managing Director of Trace Software International

Due to the 3D philosophy of our newspaper, we devote a significant portion of our presentation to the tight integration between **elecworks** and SolidWorks. But do not forget that **elecworks** is also a powerful schematic software. We present some of its strong points on page 3.

Why a 3D layout?

Help the final client visualize the project both on the mechanical side than on the electrical side, isn't the only

advantage of three-dimensional representation.

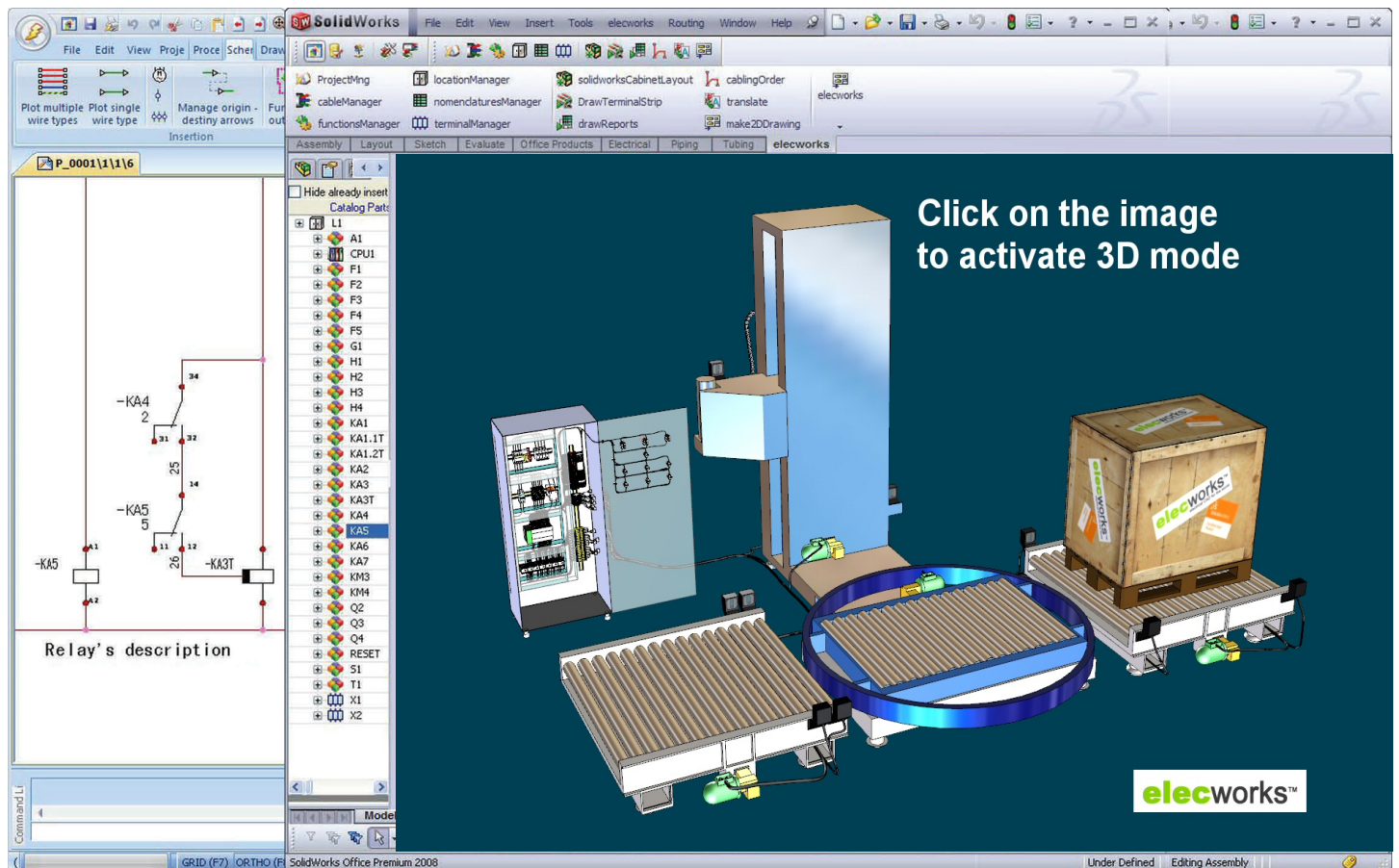
While designing, it helps to anticipate congestion and collision. It also allows the exact calculation of wire lengths, removes the risk of errors and simplifies manual wiring operation.

Designed to go faster

The 3D layout saves time in designing and manufacturing. But it is necessary that its implementation be fast and effective, and not a tedious or an addi-

tional burden for the electrical engineering office.

From the automated routing of cables and wires to the assisted placement of materials in the panel (2D or 3D), and to naturally online access to component libraries from most manufacturers, **elecworks** was designed so that the third dimension is not a gadget but rapidly becomes an additional tool for productivity and quality.



With this view set you are directly at the heart of **elecworks** for SolidWorks with a full interaction between the diagram, the wiring diagram (not shown here) and the 3D layout.



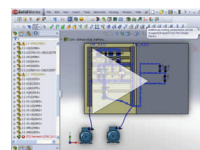
To complete our quick overview of functions associated with integration to SolidWorks, let's look at two important **elecworks** features: 3D wiring and PDM integration.

Automatic routing

Using electrical component intelligence (see next page), **elecworks** automatically routes wires and cables between components based on the data scheme or the diagram. It offers the shorter path while taking into

account possible constraints that you specify such as the percentage of duct filling and cable segregation.

Find out by clicking on this image a video showing automatic routing feature.



elecworks PDM

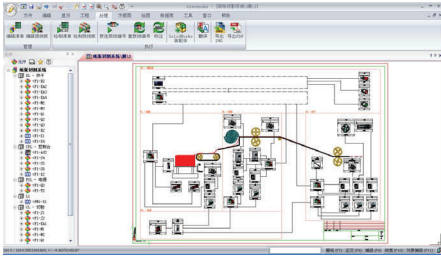
SolidWorks users know that SolidWorks Enterprise PDM can safely manage data and technical docu-

ments ensuring continuous revision control. The **elecworks** PDM link allows users to integrate into this system the electrical project documents with different customizable processes and different degrees of task automation. A plus for the management of important projects by a team located in different departments or locations.

Visit www.elecworks.com to discover other videos, and more information.

elecworks

Primarily designed for electrical CAD.



The wiring diagram can briefly describe the installation and will be reflected in the detailed program.

elecworks Core is the schematic core of **elecworks**. It offers all the features needed to design an electrical installation: diagram drawings, wiring diagram, terminal and controller management, bills of materials, etc...

A wiring diagram always in phase

The description of an installation through a wiring diagram is a time-saving feature when defining equipment and cables, but also when estimating project costs. With **elecworks**, all diagram information is reflected in the detailed diagram but also on connection labels, which list information about the devices' connections.

In addition to an easy to use Windows standard interface and native DWG format for the graphic part, you need to go further into the heart of the software to understand its many benefits.

Digital model

elecworks indeed introduces a cherished concept by mechanical engineers : the digital model. All information about the installation are indeed stored in a database (SQL server). This allows the user to act either on different "views" of this model: wiring diagram, detailed drawing, equipment management or input-output table while holding the coherence of these views and to have instant BOM kept up to date!

Talking about the digital model automatically leads to collaborative work. This technological choice allows a team to work on the same large project. This kind of team goes well beyond the electrical design office!

Online components



The 2D/3D panel layout requires having drawings and realistic models of components. This is required for checking material congestion as well as the position and function of different connection points. For this function Trace Software has partnered with sister company **TraceParts**.

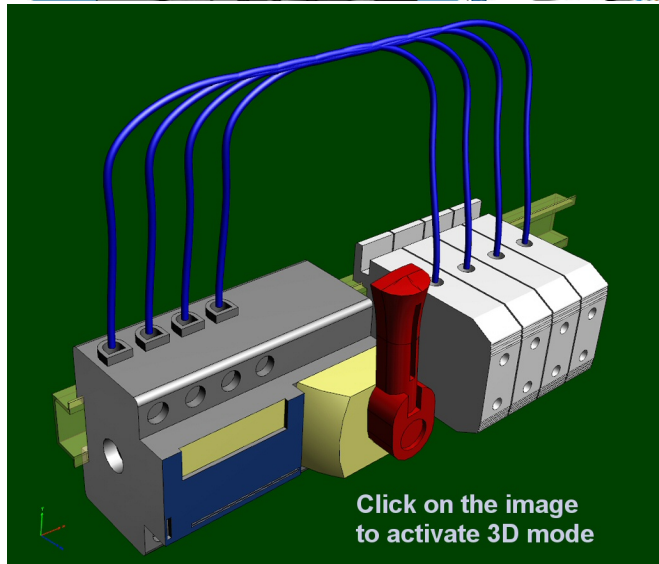
TraceParts is the leading specialist of 3D digital content for design and engineering. Manufacturers' catalogs who provide electrical components and automation materials are used to make a

realistic controls equipment layout inside a panel or other specific environment.

eCP Portal

To ensure consistency of connections and to speed up the placement, an "elecworks" intelligence was added on many of these components (see our 3D model below). Through the **eCP Portal (elecworks Content Portal)**, Trace Software also allows its user community to enrich **elecworks** database by issuing, amending and sharing their data.

Mechanical engineers will recognize the following component selection interface from **TracePartsOnline.net**. The uniqueness lies in the choice of level of detail. The "elecworks" level can give more intelligence to the component to download .



3D and smart components

In 3D mode, the views « connection points » and « positioning face » show why the placement of **elecworks** components is so easy and how the diagram logic is preserved .



TraceParts : find out more also in 3D

The e-news **(3D)²** has already used one of its issues to document **TraceParts**, both in terms of services to component manufacturers and for catalog users. Click on the image to download this newspaper which also in-

cludes a 3D model of the A380 fuselage!

Do not forget that you can also go on the portal **TracePartsOnline.net** which, since the publication of our newspaper made it itself... younger!

Pedro Puig Deu, Managing Director of Trace Software International



(3D)² : Why did you design elecworks for SolidWorks around a new generation schematic product and not from a software of your traditional offer?

Pedro Puig Deu : A new approach was needed, without limitation, that releases the potential of our developers on the collaborative approach that we wanted to establish between mechanical and automation. Our goal was to achieve a powerful tool that thoroughly benefits from the integration with industry-leading 3D mechanical CAD, SolidWorks. Of course we have benefitted from our experience over 20 years in the schematic and automation as well as feedback from our large worldwide customer base. We also considered the needs of our most demanding and most innovative users. Focused on the present and future needs of this

sector, they have created a tool more intuitive and easier to use in the current meaning of these terms. They have also built a platform that allows us to integrate standard technologies (DWG, DXF, SQL...) together with those more related to the daily use of the internet.

(3D)² : In January, you presented the latest version of elecworks for SolidWorks at the annual SolidWorks World 2011. What were the reactions of users and the partner network in the event heavily attended by “mechanical designers”?

P.PD : At the start of the presentation, users liked the interactivity allowed by our new approach and quickly realized the benefits: reduction on labor returns and reduction on checking as the automation engineers have a constant access to the work of mechanical engineers. And this in real-time, without the traditional import/export of files or phone calls between teams. The collaborative work option proposed by **elecworks** was an excellent surprise.

We will also note the enthusiastic welcome from resellers. When customers wanted to acquire an electrical or automation solution, they had no choice but to ignore their request or refer them to other editors, sometimes even competitors. Now they can make the connection between the different engineering teams and ensure them the quality and level of integration recognized by DS SolidWorks with the ‘Certified Gold Product’ label. **elecworks** is actually the only solution that benefits from this prestigious recognition in its field.

(3D)² : What level of control of SolidWorks will need to acquire the electrical and automation engineers who are not used to 3D design?

P.PD : Because it was our first objective, the user interface is one of the strengths of this software. Very intuitive, it appears quite familiar to users of modern CAD tools. Fast and easy to use, **elecworks** requires only a few hours of training and education. Users are guided so that learning 3D is not a requirement, the menus render placements simple and natural. The options are always dependent on the context of creation and lead to the optimal choice. On this subject, demonstrations really surprised and reassured the new customers.

(3D)² : You rely on users to enhance the elecworks eCP (elecworks Content Portal) portal? Can you tell us more about this strategy?

P.PD : Here too, we observed the changes brought about by new technologies and in a wider sense into work habits. We all benefit from collaboration opportunities provided by tools like Google, Wikipedia or social networks. Why not make such means available to our customers and suppliers? We also benefit in our group from the TraceParts expertise. A component database enriched by the users themselves will benefit the entire community.

But this is not the only point where the convergence of technologies is needed. A special tool for electrical installation must be able to integrate intelligently with other parts of the engineering office (mechanical, fluid, pneumatic...) and with other departments of the company (purchasing, logistics...) using all modern communication techniques. We believe that the market will benefit from our initiatives here.

Trace Software, it is also ...

Trace Elec Distribution for a complete management of electrical facilities whether the diagrams be of distribution type, synoptic, low voltage or high voltage.

Trace Elec Cabling Systems for the management, the routing and the optimization of industrial installation cables.

Elec Calc : the calculation software for low voltage industrial electrical installations, based on international and French (C15-500 guide) standards.

Solar Calc : the complete software for calculation, sizing and control of photovoltaic installations connected to the public grid according to the French guide C15-712-1.



www.trace-software.com
www.elecworks.com

(3D)² is a charge-free publication of CAO.fr (www.cao.fr), a  French-language portal dedicated to CAD/CAM, PLM and rapid prototyping. Other issues of (3D)² are available at www.cao.fr/3dcarre, in French language.

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