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Cardboard Engineering 4.0 in the virtual space saves 30 % in everyday planning – R3DT delivers new VR software

- Work virtually faster, cheaper and more sustainable than with cardboard or wood
- Modelling workplaces, simulating workflows and analysing processes in a team
- R3DT releases Version 1.6 of the Virtual Reality software Cross Connected®

The "Cardboard Engineering" method is used worldwide in manufacturing companies and in mechanical and plant engineering, for example to plan new industrial workplaces ergonomically and efficiently, and to design future production lines and the respective assembly processes in a cost- and time-optimized manner. Up to now, the terms "cardboard" and "mockup" have mainly stood for cardboard models or wooden constructions. The ingenious method therefore also stands for time-intensive staff deployment and high space requirements for the one-time assembly of the models, which then have to be disposed of. Here are additional savings potentials of up to 30 percent of the planning costs. With the use of the Virtual Reality (VR) tool from R3DT, these savings can be realized immediately: The virtual Cardboard Engineering 4.0 enables a faster, cheaper and more sustainable use of the method in everyday planning at any time and any place. This means that all those involved - planners, design engineers, workers, fitters, customers, supervisors and service providers - can confidently put cardboard and wood aside and put on VR glasses to jointly advance the projects as error-free as possible.

The virtual reality provider R3DT from Karlsruhe, Germany makes all this possible with its Cross Connected® software version 1.6. The existing more than 40 customers of the VDC member have been testing the new version since the beginning of the year. Now also new interested parties who want to adapt their planning methodology to the technological progress can start using Virtual Reality within a few days. To use the VR software, which is delivered online by R3DT, all you need is a standard VR-capable PC and a standard VR headset such as Oculus Rift or HTC Vive.

“Within 5 minutes anyone can use it.” (Customer quote)

In addition, there is the hand tracking technology of Leap Motion, on which R3DT is the only VR provider in the engineering field to rely completely. This is a unique selling proposition of the Germany-based company, for whom ease of use is the significant component in the wider distribution of VR applications: As a result, R3DT enables users to work in VR glasses with their bare hands instead of with cumbersome controllers.

Therefore, new users do not need any training and „can use it within 5 minutes", according to feedback from users at Alcon, Bosch, Continental, Daimler, Festo, Eberspächer, Trumpf, ZF Friedrichshafen and many more.

New features in version 1.6 of the VR software Cross Connected® from R3DT

With the new version, R3DT enables its customers Cardboard Engineering 4.0: In particular, physical interactions between components are now possible, i.e. the direct assembly of individual parts of all kinds as in real life. The big difference to cardboard boxes: Users do not use dummies in the virtual world, but work with original individual parts and existing assemblies that are already present in the VR world anyway or can be copied or reloaded easily at the push of a button, e.g. from third-party online libraries. The physical properties truly enable component collision, accessibility and buildability checks with your bare hands.

Ergonomics studies are possible even before the construction phase

Already in 2019, R3DT presented its ergonomics check module as a world innovation. The „ergo check", which is fully integrated into the software, enables even faster iteration loops in Cardboard Engineering 4.0 for the optimal setup of new systems. Using the virtual cardboard, objective ergonomic studies can now be carried out even before the construction phase and can be documented with screenshots.

In addition to many improvements, the VR tool now offers new functions such as flexible reference planes in virtual space, the duplication of components and the display of shadows. Existing functions such as measuring tape, sectional planes and coloring have been further improved.

Last but not least, the automated CAD interface offers even easier and faster loading of existing 3D models of different origin. A detailed user manual "How to work with Cross Connected®" supports those responsible for setting up and using the VR tool in everyday engineering work and facilitates the introduction to new VR users.

About R3DT - "Meet Your Reality" for industrial engineers

R3DT offers the most user-friendly virtual reality tool for industrial engineering: So anyone can generate virtual twins from 3D CAD models anytime and anywhere and make them a 1:1 experience. The intuitive operation by means of unique hand interaction (powered by Leap Motion) enables critical design reviews with colleagues, supervisors and customers earlier and more often during the planning process. The founding team of R3DT GmbH around mechanical engineer Andreas Rüdenauer, software developer Julien Kipp and business economist Achim Schneider started as a spin-off from the Karlsruhe Institute of Technology (KIT). The VR software was developed in 2016/17 in the CyberLab, the IT accelerator of the state of Baden-Württemberg. Today, the start-up is located in the Technologiefabrik of the IHK Karlsruhe and employs more than 10 people, including students.

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