

Cebit Innovation Award for wireless networking of display screens

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Computer scientists from Saarbrücken developed software which enables combining several screens into a virtual display, even if they have different display diagonals and different resolution. Credit: Andre Mailänder

Alexander Löffler, computer scientist from Saarbrücken, was honored with the Cebit Innovation Award. He developed software through which several displays can be wirelessly connected as a screen wall, despite different screen sizes and resolutions. This is programmed with image

content via internet connection. Löffler is a PhD student at Saarland University and doing research in Professor Philipp Slusallek's team at the German Research Center for Artificial Intelligence.

His project, called "[Display](#) as a Service," can be viewed at the computer fair [Cebit](#) (hall 9, booth E50).

The software "Display as a Service" manages to display a movie on an unlimited number of screens so that it seems to be played on a big screen. "For this the monitors do not have to be connected by cables, nor do they need to have equal display diagonal, resolution and other technical parameters as is the case with common video walls," explains Alexander Löffler.

He developed the method together with [computer scientists](#) from the German Research Center for [Artificial Intelligence](#) (DFKI). The reverse case of programming screens would be possible as well. "Picture-input from various sources, like several laptops in a conference room, can be presented simultaneously on a virtual screen wall given by the software," says Löffler.

This is possible through a transmission via internet connection. What formerly found its way from the respective application via a cable and a special screen interface onto the screen is now stored in a [virtual image](#) memory (framebuffer) and provided on the internet as an available service.

The individual images are also visible through their own internet address. The software uses that to represent only the respective visible part of the picture on every screen of a video wall. "For that it registers in advance every display with its absolute spatial position and orientation within the room. With the help of that information it can also calculate the borders of the screens and represent the favored image without distortion on the

composed screen wall," explains Löffler.

The software also synchronizes the representation of the picture beyond all the displays. Of course, all that is possible wirelessly through a WLAN internet connection.

Moreover, the researchers from Saarbrücken are already working together with screen manufacturers. Modern devices meet the technical requirements for Löffler's solution. "In the future it could be possible that neighboring football fans would build their own public viewing big screen for the football World Cup with their private monitors," says Löffler, whose doctoral thesis is also supported by the Intel Visual Computing Institute in Saarbrücken.

Philipp Slusallek, professor of computer graphics at Saarland University and scientific director at DFKI, is supervising the thesis. He knows exactly where the research project has its roots: "Two years ago, 40 of the best computer graphics researchers sat together at a conference and were annoyed by how long it took for the next talk to be seen. There we had the idea for 'Display as a service.' It's great that the solution is that successful."

More information: www.daas.tv/

Provided by Saarland University

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