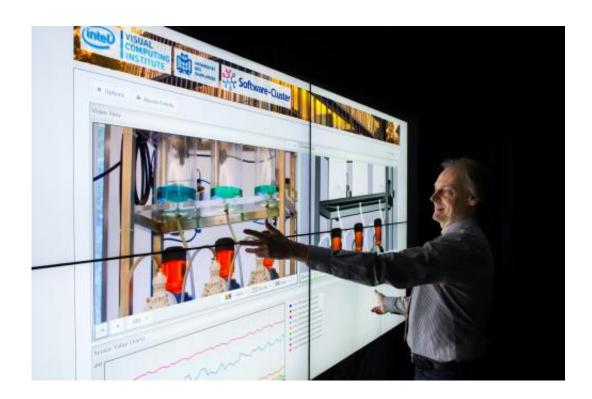# From a distance: New technique for repair work

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Professor Thorsten Herfet developed a platform experts can use to fix problems without being local. Credit: Oliver Dietze

Numerous German companies are operating globally these days: They develop products domestically, but production is done in other countries like China, Brazil or the Czech Republic. If maintenance or repair work is needed, the engineers who had designed the complex production plants frequently have to travel from Germany.

A novel approach by computer scientists in the research group of professor Thorsten Herfet from the Chair of Telecommunications at Saarland University could provide a solution: a platform that brings together the engineer in his office and the production location via live broadcasting on the computer. "We connect sensor and environmental data, video signals and computer graphics within just one application", explains Thorsten Herfet, who is also director of research and operations at the Intel Visual Computing Institute in Saarbrücken. "The system shows the user several views in parallel on the screen. A camera films the machine that needs to be maintained", says Michael Karl, who is the leader of the project. "The video is transferred to the computer in real-time." Additionally, the machine is shown as a 3D model in another window. "Users at both locations can operate the model interactively", continues Karl. "In this way, the engineer is able to show the local staff, for example, which part of the machine needs to be replaced." Furthermore, the platform provides different measured sensor data, such as temperature or pressure. These data may provide hints as to the cause of the problem. All operators are connected with each other via videoconference.

The equipment that is used for this approach is comparatively cheap: a 3D camera, a webcam and a computer. It would be simple to connect the locations via company network. To show the machine as a model, the companies could use the models originally made for the construction of the plant.

For the first time, the researchers from Saarbrücken are making use of several technologies at once in order to solve as many technical problems as possible. Besides the computer scientists from the Chair of Telecommunications and the Intel Visual Computing Institute, other researchers from Saarland University and the Software Cluster are involved in the process.

More information: The researchers will present their system at the computer trade fair Cebit in Hanover from the 10th through the 14th of March (hall 9, booth E13).

Provided by Saarland University

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