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MS Wissenschaft 2018: visual control center Better access to production data

How can companies master the mountains of Industrie 4.0 data? Specialists at the Fraunhofer Institute for Computer Graphics Research IGD are helping make production processes faster and assure quality. People who go on board the MS Wissenschaft (Motor Ship Science) 2018 can get an idea of how IGD researchers display all key information in one place and simplify decision-making processes with their Plant@Hand3D system.

Industrie 4.0 is generating data deluges that are increasingly difficult to handle. But production workers won't even notice once they glance at a multi-touch table that immediately identifies any disruptions to production, with a look at all the manufacturing machines and the entire factory building. All this is made possible by Fraunhofer IGD's Plant@Hand3D system, which addresses a considerable challenge associated with Industrie 4.0. The ongoing fourth industrial revolution in factory buildings relies on large numbers of sensors that monitor production. These sensors make manufacturing plants, equipment and production processes intelligent. For all of this to work, however, it is not enough to merely generate and evaluate sensor data. It must also be possible for plant workers to understand the data quickly before responding appropriately.

All essential information at a glance

It is precisely in this context that Plant@Hand3D proves so beneficial. After all, it has traditionally been necessary to evaluate each individual set of production-planning and production-management data, system by system. Plant@Hand3D changes all that, with all key sets of production data in a single application.

"Our system allows users to intuitively access production data," says Dr. Mario Aehnelt from Fraunhofer IGD. The pivotal feature of Plant@Hand3D is a 3D model of the production plant on an interactive multi-touch table. Production workers use the screen to manage all types of data. Hand and finger gestures allow them to zoom in on a specific machine, or look at an overview of production data from a specific plant.

Decision-making made easy

Plant@Hand3D offers many advantages. Production managers always have a comprehensive overview of production. In addition, they can more efficiently plan and manage

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plant operations. Plant@Hand3D also allows managers to assign tasks to workers more systematically. This IGD solution furthermore immediately detects any lack of materials or interruptions in production processes. Individual production workers also benefit from Plant@Hand3D.

They can use screens in production areas or tablet computers at their workstations to view all the information they need as well as enter or collect production data. Production staff can also integrate their smartwatches into the information chain.

Now on exhibition: This multi-touch table can portray a production plant in 3D and draw attention to a malfunctioning machine. Visitors can interactively redirect the flow of production and access every piece of production data – or select a product and check its manufacturing status. They can also let the system display which manufacturing steps are still required and which machine will execute the next step.



Plant@Hand3D is a stand-alone solution for all key production data. Everybody always sees the big picture and finds it easier to make decisions. © Fraunhofer IGD | Image in color and print quality: www.fraunhofer.de/en/press.html

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