FACTORYVIEW – SEEING THE FACTORY DIGITALLY AND IN REAL TIME

Manufacturing industry application

Aggregation and provision of real-time information in the building and at the workstation with the 3D indoor viewer

PROJECT DESCRIPTION

In the project, a factory was geometrically digitalized and real-time information aggregated and made available for various users. To this end, the first step was to use a mobile 3D laser scanner to scan in the dimensions of the test environment, the Experimental and Digital Factory at TU Chemnitz (approx. 30 min. for 500 m²). The second step was to post-process the data, which was then used to generate a 3D and photographic model of the factory and make it available as a web application for the user (approx. 2 days). In the third step, "points of interest" (POI) were created in this model (e.g. a machine or transport system), which were then linked to further information systems (such as SPS with web interface or MES) via web access (approx. 30 min. per POI). Employees can also be localized at the POI by means of so-called beacons (RFID transmitters).

SOLUTION

The result is a mobile assistance and information system for various tasks, employees and stakeholders. The solution makes it possible to move through the factory, inspect workstations or measure objects on the PC. Interesting features include the navigation function, which makes it possible to show an external service employee the way to the machine, for example. Employees from production, planning and control can receive information on the current processing status or condition of the machine via their tablet.

INDUSTRIE 4.0 – FEATURES

Mobile assistance system for role/context-specific information provision (integration of multiple information systems).

STANDARDIZATION APPROACHES

The following standards are used: 3D scan and 3D modeling (CAD); RFID; client/server/web technologies (HTTPS).