FACTORY MAP WITH LAYOUT RECORDING 4.0

*Application for the manufacturing industry -
Factory planning with digital layout recording*

SUMMARY

Factory planning and layout can be simplified with Industry 4.0, which means cost savings particularly for brownfield factories. The recording and analysis processes are simplified and shortened by means of indoor aerial drones, sensors and analytics.

CURRENT SITUATION

An informative layout is the basis for all factory planning projects. Workshop layouts are detailed, digital representations of manufacturing facilities. They encompass the type, shape and position of all areas and operating equipment within a plant. At the present time, layout recordings of this kind are made only manually, which is an extremely labor-intensive and time-consuming way of performing this data recording and analysis. In some cases, creating the layout accounts for up to 50% of the project workload.
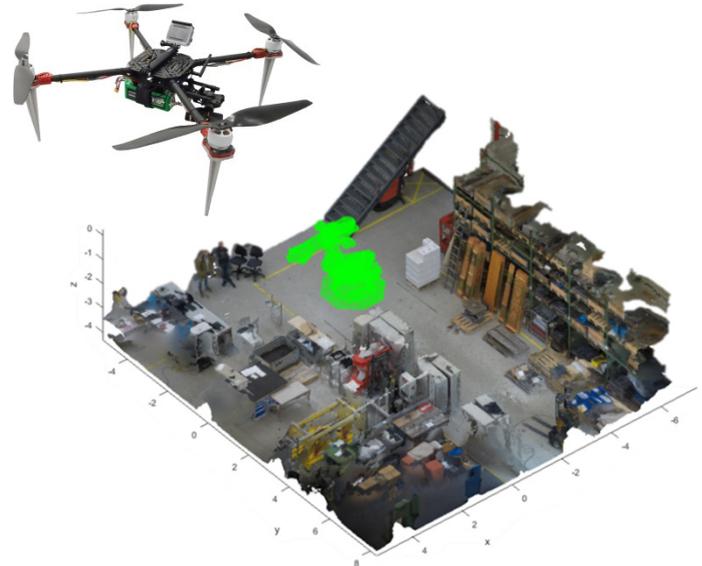
PROJECT DESCRIPTION

The project is investigating how to develop the indoor data recording of industrial installations in plant buildings using a camera system. Having established that this process works in a reproducible manner, the project is now focusing on the preparation of the scanned data and the generation of usable point clouds in CAD programs. The next step is to research and develop algorithms for the automated evaluation and interpretation of the point clouds. A key component here is the independent recognition of individual areas or even entire operating facilities from the point cloud.

REFERENCES

www.youtube.com/watch?v=xfvpjlUNKKA

PARTNERS

SOLUTION

The focus is on technologies for fast and easy data recording and analysis:
- Simplified data recording using drones which fly autonomously to a certain extent, in order to acquire a maximum amount of 2D and 3D data in a short time
- Automated data assembly generates a true-to-scale representation of the factory
- Structures (facilities and machines) are automatically detected, measured and incorporated into the layout

CONTACT

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INDUSTRY 4.0 FEATURES

Industry 4.0 in the area of factory planning, based on partially autonomous data recording with indoor aerial drones and automated data analysis with subsequent processing.

STANDARDIZATION APPROACHES

Interoperability with production systems and exchange of information with semantic models is desirable. However, this has not yet been standardized at the present time.