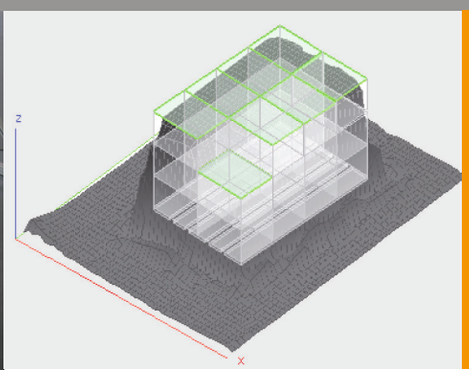
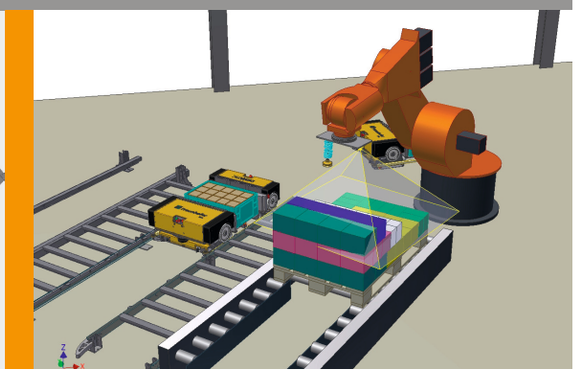
Fraunhofer
IML

FRAUNHOFER INSTITUTE FOR MATERIAL FLOW AND LOGISTICS IML





Fraunhofer Institute for Material Flow and Logistics IML

Joseph-von-Fraunhofer-Straße 2–4
44227 Dortmund

Contact Person

Dipl.-Logist. Christian Prasse
Phone: +49 231 9743 269
christian.prasse@iml.fraunhofer.de

Dr. Frank Weichert
Phone: +49 231 7556 122
frank.weichert@tu-dortmund.de

www.konturcheck.de
www.iml.fraunhofer.de

flw Lehrstuhl für Förder- und Lagerwesen

LS7 AiF

3D CONTOUR CHECK

Efficient position detection for loading devices with the use of a Photonic Mixing Device-camera with depth information

The project supported by the Federation of Industrial Research Associations «Otto von Guericke» e.V. (AiF) is aiming at the development of methods and algorithms for the verification of loading conditions of a euro pallet. The packing positions known from the automatic palletizing are matched with a bas-relief which is captured by a PMD-camera.

In comparison to current systems higher efficiency can be achieved with lower costs for the used hard- and software because existing positioning data on a RFID-transponder can be used which are generated during the automatic palletizing. Thus, the search area is considerably limited with respect to form and position of the package and it creates the possibility to accomplish a balance of the target position and the current position.

On the one hand, the innovative contribution of the research project is the use of a novel PMD-technology and therefore necessary basic research in this field. On the other hand, it is about an algorithmic process, that is newly developed and prototypically (with respect to the software technology) realized, for the load detection with this technology. In addition, this process helps to streamline the evaluation unit by using the previously generated information about the position, size and orientation of the package.

The advantages from the user's point of view: It can be carried out both, a verification of the loading condition and the subsequently automatic depalletising by use of an industrial robot based on the evaluation.
The project is a co-operation between the Fraunhofer IML, the Chair of Transportation and Warehousing of the Faculty of Mechanical Engineering and the Chair for Graphical Systems of the Faculty of Computer Science, both of the TU Dortmund University.