

**Short cycle time  
Top robustness  
Fast realization**

## AutomAPPS bin picking

**Software for the automatic grasp-planning and trajectory planning for bin-picking or vision-based pick-and-place applications**

- Planning software plus easy to use, powerful development environment for rapid and robust bin-picking
- Rapid planning of grasps, several alternatives at the same time
- Fast, optimal and collision-free robot motions
- Automatic generation of robot programs
- For all common robot manufacturers
- Supports virtually all sensors
- For all processes



„bin-picking“ example solution for guaranteed short cycle times (image courtesy of bsAutomatisierung GmbH).

## Advantages:

### Faster ready for the market, earlier revenues

- Faster development of new "bin-picking" / pick&place solutions and applications
- Less risk and re-work by technology proven umpteen times
- Earlier SoP

### Cost savings

- Complete and optimal support of bin-picking / pick-and-place / tasks
- Reduced development and engineering efforts
- Minimized time for Setup and Ramp-up
- Reduced "cost of ownership" and service

### Optimized cycle times

- Shorter, optimized, collision-free planned motions
- Consideration of speed-bounds and acceleration bounds of robot joints and of cable restrictions
- Very short planning time
- Multiple alternatives planned at the same time
- Supporting dynamic environmental changes over time (option)

### Flexibility

- Virtually for all applications and robots
- Supports various sensors for different applications
- Interface to various image processing (packages)

### Reliability

- SW umpteen times deployed and proven in production
- Handling deviations through planning
- Deviation handling by re-planning
- SW cover all steps
- WYSIWYG: The task is planned, simulated and tested before the work cell is realized. Test runs of jobs and optimization from remote supported.

### Easy to use

- Tailored to bin-picking tasks.

## Scope of delivery

### On-line planner

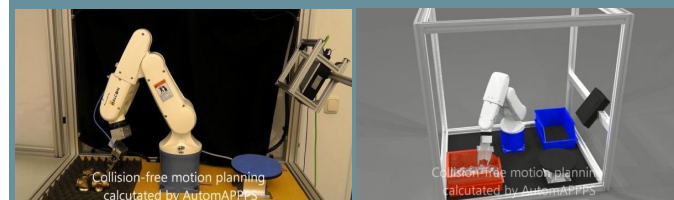
- Kino dynamic motion planning module
- Grasp planning function
- Interface for the exchange of information about the work cell, workpiece, positions and task.

### Development environment - setup tool:

- Easy to use configuration tool for: sensory pick-and-place or bin-picking
- Fast modelling of the environment and of grasping points. Simulation / animation of the entire application.
- Remote optimization functionality

### Optional:

- Convergent-IT customers offer integrated packages with sensors and image processing
- Provision of complete system or components via partners possible



Examples of vision-based pick-and-place and inspection tasks. Left: Realization

## Requirements:

- PC with Windows (7,8,10) or Linux OS
- 3D data of part (CAD or scan: JT, STL, IGES, STEP,...)

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