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AutomAPPPS — Reactive

Software for reactive programming of robots and processes. Programs are generated in real-time, reacting to information from preceding quality-control, measurement or reconstruction processes

100% inspection, programmed off-fine with AutomAPPPS (Image courtesy of ATENSOR Engineering and Technology Systems GmbH)

Reactive automated marking of detected defects (example)

Advantages:

Automation of novel applications

- E.g. „Touch-Up“ and „Spot-repair“
- Enables robots to react to results of preceding processes

Automation of lot-size 1

Programs each job individually

Minimal reaction time

- Fully automated programming
- Up to 500 times faster than manually
- Parallelizable

Real-Time capable

Available calculation time definable

Cost efficient Line-Tracking

- No additional hardware required
- Automatic consideration of the motion of the work-piece

Reduction of cycle-time

- Coordination of robots in the same workspace
- Automatic optimization

Compensates large pose-deviations

Adaptation by fast on-line planning

Documentation

Configurable support for data logging

Approach:

1. Interface to preceding processes
2. Reactive planning
3. Automation of process planning
4. Embedded process simulation as criterion for optimization
5. Automated collision avoidance
6. Automated code generation

Supported processes

1. Marking
2. Coating
3. Polishing/grinding
4. Deburring
5. Additive processes

System requirements:

1. CAD data of work-piece
2. CAD data of work-cell
3. Information from preceding process
4. Operating system: Microsoft Windows (7,8,10), Linux

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