VisionTools
Bildanalyse Systeme GmbH

SIMPLE FOR ALL CASES

VisionTools V60 - powerful image analysis software for automation processes

V60

The powerful and reliable image analysis software. Developed from over 35 years of experience in industrial use. Simple for all cases.

Machine vision makes automated processes more controllable and thus safer. Whether it's part inspection in production or position orientation in assembly, whether it's guiding a robot for loading/unloading load carriers or checking the presence of pharmaceutical products in blister packs. Also reading data matrix codes in material flow and logistics processes or comparative measurements of vendor parts in incoming goods inspection - the reliable use of V60 in several thousand industrial installations and the continuous further development speaks for itself.

VisionTools V60 is a powerful and reliable image analysis software that has been specially developed for industrial automation processes. Integrated into an image processing system consisting of an industrial computer, cameras and lighting, complete solutions including sequence control and communication to higher-level control systems are realised. With the standard image processing software V60, simple tasks can be solved as well as complex large-scale projects with many cameras, 3D scanners and even robot-guided inspections.

Flexibility

A project is realised in V60 completely without a programming language. The sequence control of a project is created by parameterising and freely combining field-proven basic modules from an extensive library of proprietary 2D and 3D evaluation methods and objects.

This gives V60 maximum flexibility for the optimal design of individual solutions for demanding image processing projects.

Hardware support

Numerous common camera models and interfaces to higher-level machine controls are supported. Connection to individual machine data acquisition systems for statistics and data backup systems is also possible.

Applications

- Robotics - Position recognition 2D/3D
- Adhesive seam inspection in- or post process
- Completeness and assembly control
- Form inspection - Surface inspection
- Reading of codes and plain text
- Type differentiation

Areas of application

- Automotive and mechanical engineering
- Electrical equipment industry
- Packaging industry
- Food industry
- Pharmaceutical industry
- Plastics industry

System requirements

- **Processor:** Pentium4 - 64 Bit
- **RAM:** 4 GB
- **Hard disk space:** 40GB hard disk space for programme installation and data recording
- **Screen resolution:** 1024x768 or higher
- **Operating system:** Windows 10, Windows 10 IoT Enterprise (64 Bit only)
- **Interface:** USB port or SD/microSD/CompactFlash card reader for connecting the supplied protection adapter (dongle) for querying the V60 licence

Project examples:

Position determination of stacked pistons

V60 determines the **position of stacked pistons on pallets** by **evaluating 3D camera images**. The position coordinates of each individual piston (X,Y,Z,rZ) are transferred by V60 to the robot for removal.
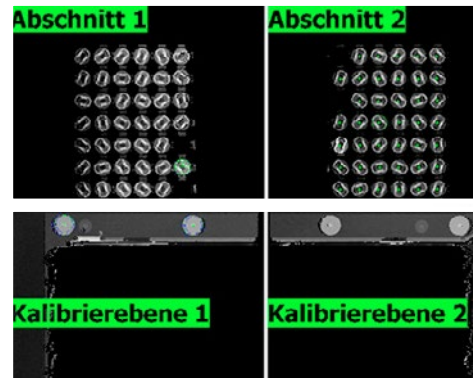
Angle determination for matching tyres

To compensate the so-called concentricity tolerances of a tire, the tire is moved to the rim by exactly the angle until the deviations of concentricity are balanced in horizontal and vertical directions.

Task: Possibility to teach-in various type features for different tire and rim-types and sizes.
Match marks and coloured rim dots on tires need to be detected to determine the angle at which the tire must be matched.

Camera system: Capturing single images of the colours red, green and blue with a 2D colour camera into different memory pages.

Solution: By combining the individual colour channels, certain colours can be highlighted or specifically suppressed - the optimal conditions for a reliable process to determine rim and tire dots. The teach-in of new variants can be done with user guidance through dialogue with just a few clicks.


Inspection of adhesive and sealant application

Adhesives and sealants are used in numerous industrial applications. Defective seals and sealing seams can impair functionality, safety or the visual impression and can no longer be corrected after assembly.

With **in-process** or **in-line adhesive seam inspection**, a sensor unit is mounted directly on the application tool. A robot guides the application tool with sensor over the respective workpiece or vice versa (workpiece along the gluing nozzle). In both cases, the glue bead is inspected directly during glue application.

Evaluation of the images and communication to higher-level controls is carried out via V60. All settings can be made with the intuitive user dialogue.

Images and inspection results are clearly displayed, defective sections are visualised in a component overview. By clicking on individual results, the corresponding images of the bonding area are displayed.
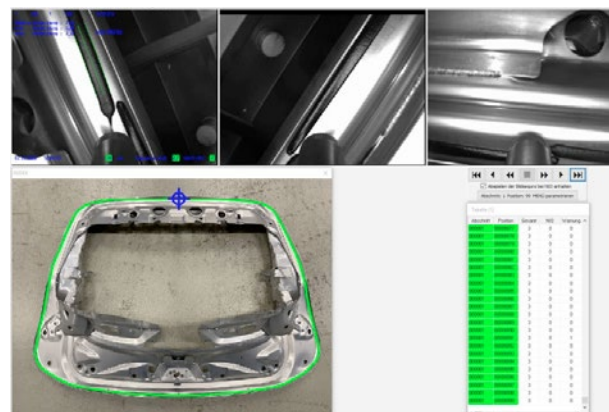
Interface variety

V60 supports a wide variety of interfaces to higher-level machine controls such as
PLC (Profinet), many common robot systems (e.g. Kuka, Universal Robots)
up to evaluation based on artificial intelligence (REST API).

- Profinet, Profibus, Interbus
- TCP/IP Client-Server
- OPC-UA / OPC-Classic
- IP S7 Link
- RFC 1006
- TwinCat ADS
- Parallel IO
- REST-API

PROFI®NET **PROFI®BUS**

OPC UA

TwinCAT® **UNIVERSAL ROBOTS**

V60 - features

- Project realisation **without programming language** through interactive assembly of objects
  for automated image analysis including sequence control

- **Wide range of applications:** standard modules from small parts measurement to
  complete motor control and robotics

- Uasable with common 2D and 3D camera systems - GigE / USB / Analogue (with frame grabber)

- Powerful and robust **2D-** und **3D image analysis tools**

- Wide range of functions with **extensive object library**

- Clear, modular structuring of the entire project

- **User administration with password protection** and different user levels

- Display of up to 999 **image memory pages**

- Creation and **management of image collections** according to any criteria

- Extensive application visualisation with overlay graphics, texts, diagrams, tables

- **Menus** and **input masks** can be designed **user-defined** and **project-specific** for
  dialogue with the end user

- **Interface and variable monitor**

- **Plug-in interface** e.g. user management with Euchner key

- Extensive **online help** on object use and a **basic tutorial** on project creation

- **Languages:** German and English, expandable by any number of languages through library

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