Robot Vision Software

evf™ 5.0
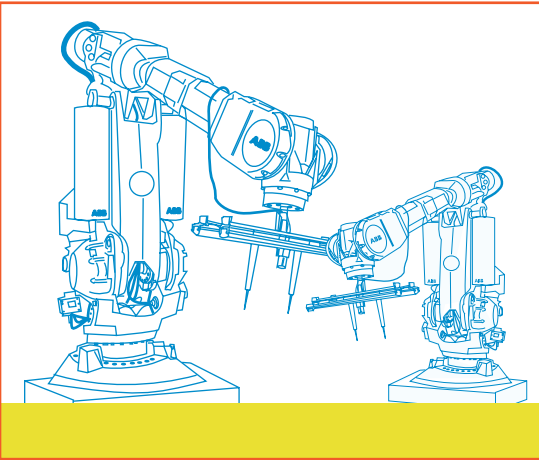
NEW
VERSION

Reaching new levels of factory automation with innovative advances in Vision Technology and Robot Teamwork.

VisiTeam™
Robots working together dynamically

NEW VisiTeam™ Architecture

- Innovative vision data sharing design
- Enables collaborative automation by a team of robots
- Multiple parts per image identification
- Independent vision and robot path training provides cell setup flexibility as steps can be done by separate groups and at separate times
- The new architecture supports single or multiple camera system configuration

NEW Vision Technologies

Visual Real Time Part Tracking (RTPT™)

Real time part movement tracking eliminates need for stop stations resulting in massive time savings and higher throughput.

eVF RTPT features:
- High speed imaging using GigaEthernet camera technology
- Eliminates need for mechanical encoder and related slippage and synchronization issues
- Provides high-speed, accurate and direct part position feedback

Random Bin Picking (RBP™)

Handling of parts from fully random bins opens a new frontier for robotic automation.

eVF RBP features:
- *Robust Object Recognition* uses advanced geometric pattern matching to identify potential parts
- *Intelligent Candidate Selection* selects best candidates based on part position, overlap, interference and match confidence
- *Dynamic Path Planning* to plan a collision free path to pick parts
- *Dynamic Grasp Planning* to grasp parts in a stable and safe manner

Features. Functions. Technologies.

Robot Vision Technologies

Simple 2D to complex 3D

Xi2D™
> Single or Multi camera 2D information in 3 degrees of freedom (x, y, Rz)

IDM2.5D™
> Single Camera information in 4 degrees of freedom (x, y, z, Rz)

SC3D™
> Single camera 3D information in full six degrees of freedom for rigid parts (x, y, z, Rx, Ry, Rz)
> Resilient to noise and imperfect object appearance through advanced feature qualification technology
> Efficient use of space on end-of-arm-tooling units
> Extremely fast training and calibration cycles

DD3D™
> Direct depth 3D imaging with multiple cameras looking at the same feature from stereo configuration.

SR3D™
> Surround 3D imaging combines information from multiple cameras viewing large parts from different viewpoints (e.g. car bodies)
> 3D position of parts in full six degrees of freedom

SL3D™
> Uses structured light (e.g. laser) stripes to scan part surface
> Provides the 3D position of rigid parts with smooth, featureless surfaces, in full six degrees of freedom.

Advanced RBP technology enables part picking from jumbled bins and automation of many previously manual operations
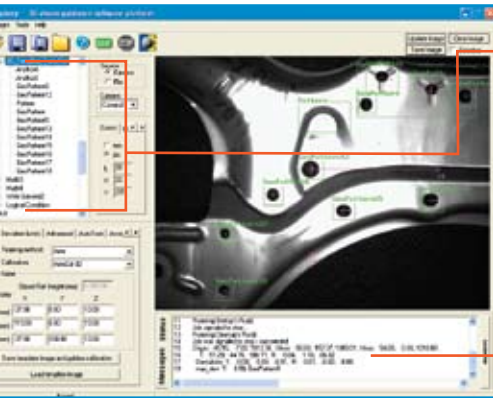
Systems in Use & Development

> Assembled Cylinder Heads
> Rough Cast Transmission Cases
> Pharmaceutical Bottles
> Beer Cases
> Pop Cartons and Cases
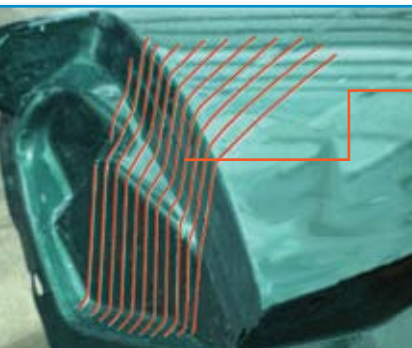> Magazines
> and many more. . .

evf eVisionFactory 5.0

Combined Development & Runtime Interface

Designed for manageability and support

- graphical view of all system components
- job status updates
- time stamped error messages with help links
- Reporter™ for image logging

Projections of Structured Light add target features for smooth un-featured parts

Automated Setup & Testing Functions

Simplifies Installation

AutoCal3D™
Consistent 3D camera calibration in just 5 minutes
Runs robots through up to 50 vantage points and captures snapshots of a stationary calibration template to self-calculate calibration
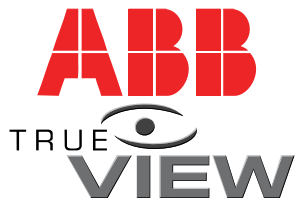
Accutest™
Automatically evaluates performance for guidance systems; simulates 2D, 2.5D and 3D part movement and lighting changes
Measures the performance accuracy of systems
Enables pre-production problem solving
Saves significant cost and downtime

AutoTrain™
Automatically measures parts for new systems
Eliminates CAD models and manual measurements

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ABB

TRUE
VIEW

See. Think. Do.

Braintech
Robot Vision Experts

604-988-6440
brhi.info@braintech.com
www.braintech.com