

Top Ten Reasons for RVT's Vision Guided Robotics

1. Reduce & Reallocate Labor:

Use vision to guide robots to automate what historically required human interaction.

2. Reduce & Eliminate Precision

Dunnage: Saves millions of dollars annually.

3. Enhance Quality:

Eliminates human error by allowing visual and mechanical inspection techniques.

4. Reduce Downtime:

Increases equipment utilization, detects necessary path changes, and prevents unnecessary downtime.

5. Flexibility & Elimination of

Hard Fixturing: Various part styles can be handled by the same system cell using vision identification.

6. Ergonomics:

Automates the human process of material handling and increases employee safety.

7. Adaptability:

Offers a flexible and easy system for handling new parts.

8. Works with any Robot:

eVF software works with many different industrial robots.

9. Off-the-Shelf Components:

Uses common components and standard integration to make systems easy to install and repair. Simplicity and Standardization.

10. The Future:

RVT's VGR grows and evolves as you do.



eVisionFactory™ (eVF™) Version 6.5!



eVF 6.5 makes robots smart, so that they can “see, think and do” to their surroundings and make necessary adjustments independently on their own, on-the-fly -- without human involvement. eVF 6.5 offers unparalleled Simplicity, Standardization, Commonality, and Flexibility. eVF software works with many different industrial robots. e.g., ABB, FANUC, MOTOMAN, KUKA, KAWASAKI and NACHI.



Features

- Windows 7 and Windows XP compatible
- Available in PC or Smart Camera format
- Supports both Analog and GigE cameras
 - Resolution from 1 Meg pixel and above
- Scalable from 2D to 3D
- Utilizes latest imaging libraries
- Single camera and multiple camera capable
- Simple to use graphical user interface
- Installed in 100s of applications world wide

Quick Facts

eVisionFactory (eVF) is a vision guidance software platform for creating Vision Guided Robotics (VGR) solutions. With eVF, users create scalable, robust robot systems from one reliable software platform, enabling engineers, system integrators, and process design engineers to build vision guidance with relative ease.

With a global customer list that includes Ford, Toyota, Honda, Johnson & Johnson, and Boeing, RVT's software is being utilized every day with hundreds of vision systems installed and eighteen years of continuous design innovation.

eVF's Revolutionary Automated Setup & Testing

eVF enables the industry's fastest training, installation, testing, and calibration cycles. (Patent Protected)

AutoCal™ (eVF exclusive patent feature)

The “AutoCal” click automatically calibrates the camera to the robot coordinate system in less than 5 minutes.

AutoTrain™ (eVF exclusive patent feature)

The “AutoTrain” click feature is a fully automated one button vision system training feature. The vision system automatically moves the robot and camera through multiple image positions as it measures features to automatically build a mathematical model of the part which allows for rapid response to part model or engineering changes without the need for CAD data.

AccuTest™ (eVF exclusive patent feature)

The “AccuTest” click is a fully automated one button vision solution testing feature. The vision system automatically moves the robot and camera through multiple positions, simulating allowable part movement, confirming all programmed features are found. This feature validates the vision solution accuracy, lighting and robustness prior to commissioning at the end user's facility. Upon completion of testing the system automatically computes accuracy data up to 6σ and up to 6 degrees of freedom.

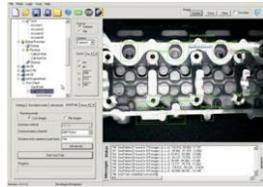
Automatic Configuration Technologies

eVisionFactory™ includes standard automatic training and testing technologies for developing and maintaining systems with ease. Developers and engineers can expedite the previously labor intensive task of setup and testing the accuracy VGR systems. Automatic configuration technologies are available for all VGR applications and are instrumental to their speed, scalability, supportability and reliability.

AutoCal™ cuts the time necessary for calibrating cameras to robots from hours to just minutes. Automatic calibration is not just for development, but for maintenance as well and can be run in tight or dangerous areas inaccessible to humans.

AutoTrain™ uses part images to automatically measure new parts entered into the eVF system. This automatic configuration service also saves time by eliminating the need for CAD models or manual measurement.

AccuTest™ rapidly validates the accuracy and reliability of a system before it is deployed in the field. The system can best testing in simulation as well as with a robot.



About Us

Robotic VISION Technologies (RVT) is a recognized leader in the field of intelligent machine vision and robot vision software.

RVT's software and technologies enable vision recognition and robot guidance processes in manufacturing, logistics, material handling, automation, situational awareness, security and reconnaissance, just to name a few.

eVisionFactory Version 6.5 features both the Henry Ford Technology Award-winning Single Camera 3D (SC3D), and the ground breaking Random Bin Picking (RBP) Vision Guided Robotic (VGR) technologies.

eVisionEngine is a vision guidance library offering an expanse of commercial uses to wide range of customers in the robotics' industry.

eVF 6.5 Technologies

eVF 6.5 utilizes the same user interface for all of the following unique scalable technologies:

SC3D: Single-Camera 3D information in full 6 degrees of freedom for rigid parts (x, y, z, Rx, Ry, Rz). Resilient to noise and imperfect object appearance. Efficient use of space on end-of-arm tooling units.

SC3D includes SC2.5D Single-Camera information in 4 degrees of freedom (x, y, z, Rz) and **SC2D** Single or Multi-Camera 2D information in 3 degrees of freedom (x, y, Rz)

SR3D: Surround Camera 3D imaging combines information from multiple cameras viewing large parts from different viewpoints (e.g. car bodies), and viewing different areas of the part from different viewpoints

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 6 degrees of freedom

RBP™: Random Bin Picking: Handling of parts from fully random bins opens a new frontier for robotic automation. Special Features of RBP:

- Robust Object Recognition uses advanced geometric pattern matching to identify parts
- Intelligent Candidate Selection selects best candidates based on part position, overlap, and interference
- Dynamic Path Planning to plan a collision free path to pick parts
- Dynamic Grasp Planning to grip parts
- Featureless Parts



BAE SYSTEMS

Chairman's Award



Henry Ford
Technology Award

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