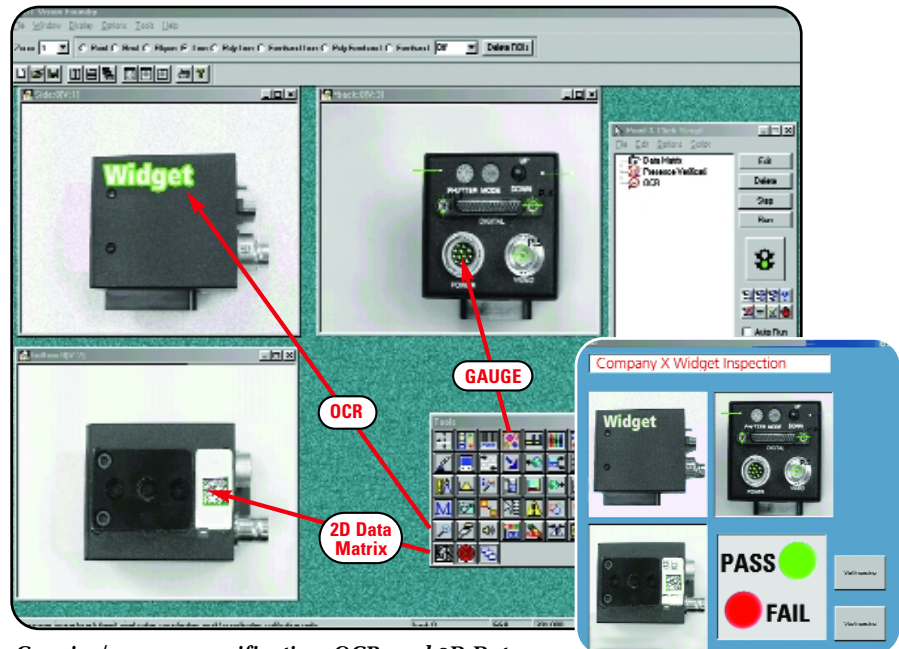


DT Vision Foundry™ Version 3.5

**Flexible Machine Vision Software
for Dynamic Inspection Applications**

Key Features

- Over 35 powerful tools for image pre-processing, measurement, analysis, and data transfer operations.
- Graphical and code level development environments for a variety of user requirements.
- Rapidly write prototypes and perform feasibility tests.
- Create custom vision tools.
- Correlate vision and sensor-based measurements.
- Interface with Visual Basic and Visual C++.
- Sophisticated 2D Data Matrix Tool analyzes 2D bar codes with 360 degrees rotation, blurred images, water damaged images – with processing speed of two to nine milliseconds.
- Enhanced Bar Code Tool reads 1D codes, including postnet.
- Device Manager – facilitates centralized configuration of frame grabbers, digital I/O boards, and serial I/O boards.
- Load and unload scripts and start and stop scripts remotely.
- Advanced algorithm Search Tool.
- Pattern matching, blob analysis, OCR.
- Over 40 gauging functions.



Gauging/presence verification, OCR, and 2D Data Matrix reading are just a sampling of the 37 vision tools that you can use in the Point-and-Click Script.

Easily create your own custom graphical user interface.

DT Vision Foundry is a versatile and extensible Machine Vision software package that anyone can use. It integrates powerful vision tools with multiple programming environments to provide a robust, flexible, easy-to-use visual inspection package.

Designed for use in demanding visual inspection applications, DT Vision Foundry combines both state-of-the-art vision algorithms with graphical and code level development environments, providing everything needed for the fast creation of complete, robust, production-ready inspection programs and customized vision tools.

DT Vision Foundry is the ideal solution for Machine Vision OEMs, integrators, and end-users who require the features of a graphically-based rapid program development system and the flexibility of a code-level development system — all in a single, completely integrated package. DT Vision Foundry supports a wide range of Data Translation PCI frame grabbers, allowing the development of complete, high-performance vision systems.

Flexible and Extensible

Since no two applications are alike, DT Vision Foundry provides the flexibility you need for creating custom machine vision applications and vision tools. Providing a unique, multi-level development architecture, DT Vision Foundry allows you to use the package in the way that best suits your application requirements and your programming expertise.

Machine Vision Solution Center

Visit www.datx.com/machinevision for application examples, tutorials, whitepapers, and links to Data Translation frame grabbers.

Feasibility Studies

Our application team can run tests on your sample part and provide you with a script and detailed report of the results. Send us your part to be inspected today!

DTVision Foundry Tools

- | | | | |
|---------------------------|---------------------------|--------------------------|---------------------------|
| 1 Enhanced Picture | 11 Search | 21 New Polar Unwrap | 31 Sound |
| 2 AVI Player | 12 New Match | 22 Morphology | 32 Status |
| 3 TWAIN | 13 Image Classifier | 23 Threshold | 33 Text |
| 4 File Imager | 14 Contour Classifier | 24 Enhanced Pixel Change | 34 Point and Click Script |
| 5 Export | 15 Line Profile | 25 Color Plane | 35 ROI Manager |
| 6 Import | 16 Histogram | 26 Calibration | 36 Gauging |
| 7 Serial I/O | 17 Enhanced Blob Analysis | 27 Image Manager | 37 Edge Finder |
| 8 Enhanced Digital I/O | 18 Arithmetic | 28 Custom Script | 38 ROI Shape Fitter |
| 9 Enhanced Barcode Reader | 19 Filter | 29 Display | |
| 10 New 2D Data Matrix | 20 Image Modifier | 30 Prompt | |

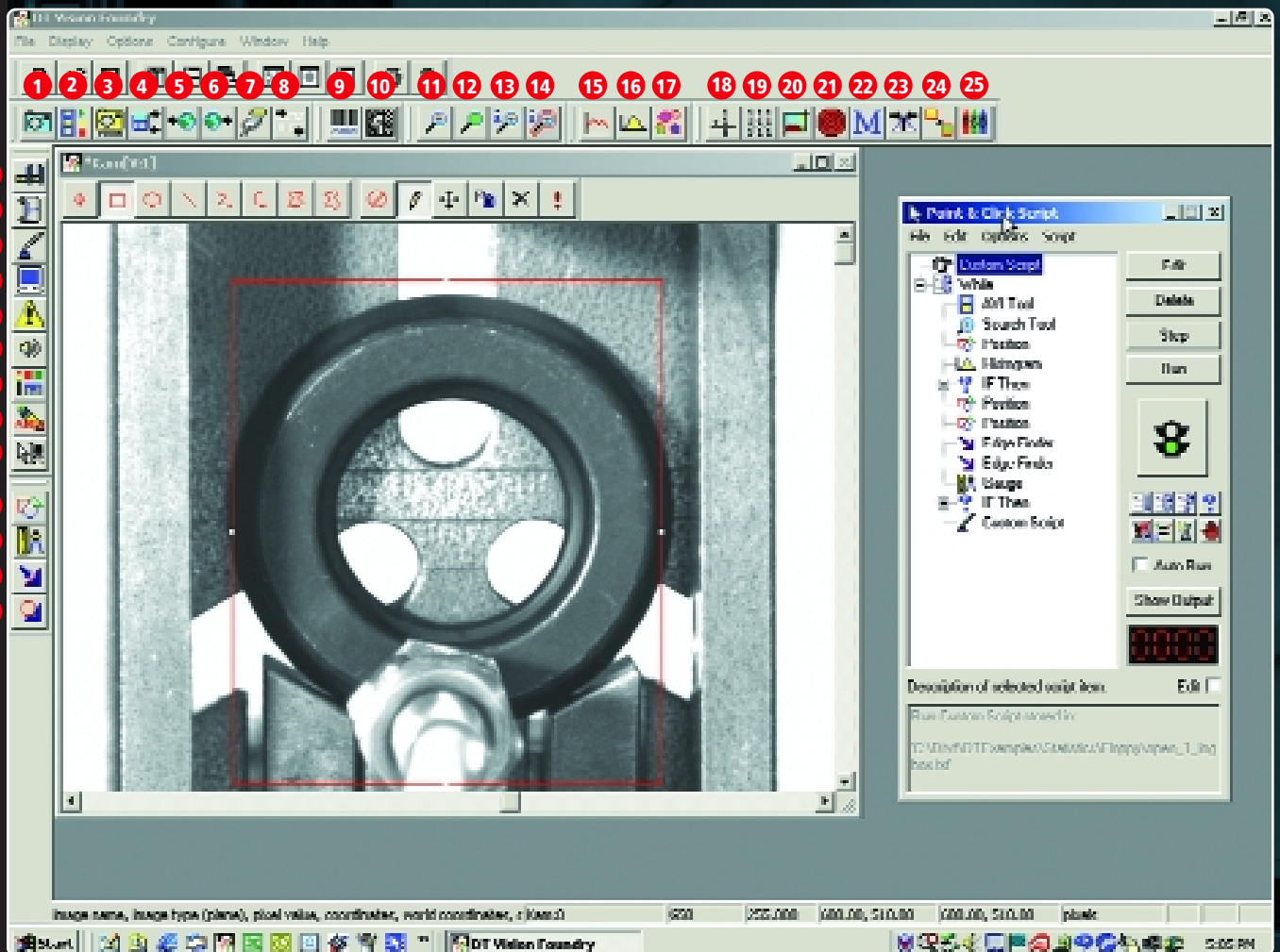
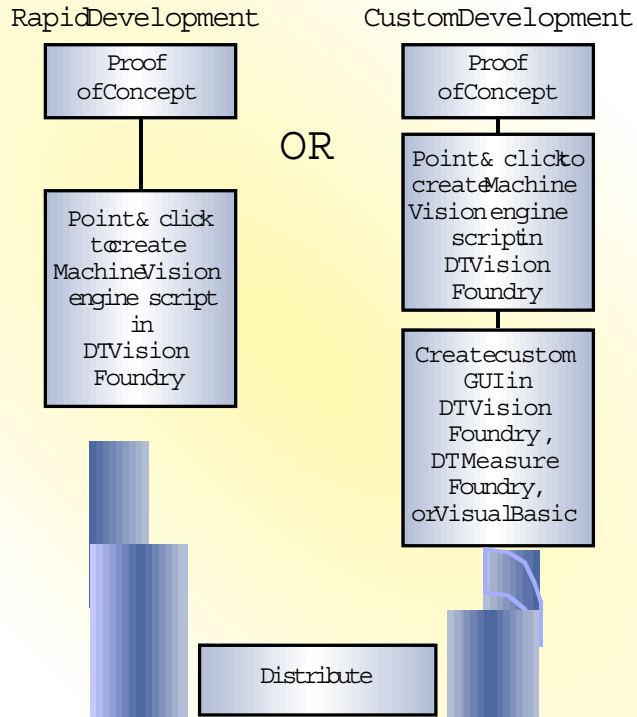


image name, image type (plane), pixel value, coordinates, world coordinates, c | Kam:0

The Right Package for Your Needs

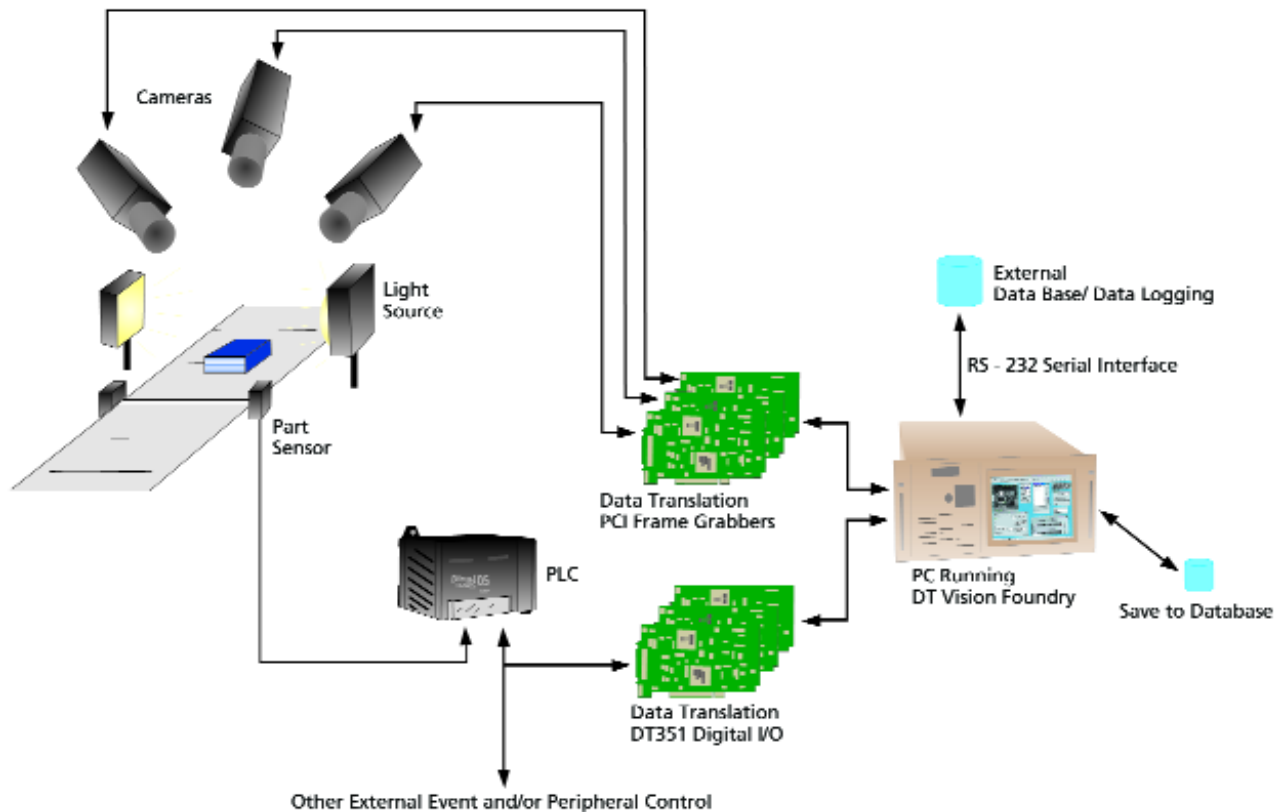
DT Vision FOUNDRY

Due to its unique multi-level architecture, DT Vision Foundry allows you to use the package in the way that best suits your application requirements and your programming expertise.



Rapid Program Development – Use the Point & Click Script Tool and the extensive library of vision and image processing tools provided to quickly build, ready-to-run graphical programs – all without writing code! Then, if you want to go to the next level, you use DT Vision Foundry, DT Measure Foundry, Visual C++ or Visual Basic to create a custom application to run your script.

System Diagram



General Specifications

Image File Formats Supported

Six types: Binary; 8-bit, 16-bit, and 32-bit grayscale; floating-point grayscale; true 24-bit color. All tools support all image types available.

ROI Types Supported

Eight types: Point, rectangle, ellipse, straight line, polyline, freehand line, poly-freehand line, and freehand. An unlimited number of ROIs can be used in an image and "attached" to images for faster processing. ROIs are dynamically allocated and can be repositioned based on coordinate data provided from other tools.

Viewport Support

An unlimited number of viewports (viewing windows) can be opened simultaneously, zoomed and/or scaled.

Program Control

The Point & Click Script Tool provides auto-run/halting mechanisms and failure option control for program execution. Point & Click Scripts can contain nested conditional branching (while, do-while, if-then, for-next, compound if), error branching, and variable assignments. Formulas and variables can also be provided using the Custom Script Tool.

Application Structure

Main application functions can be accessed via Object-Oriented API calls using Microsoft Visual C++.

Tool Structure

All tool functions can be accessed via Object-Oriented API calls using Microsoft Visual C++. Tool GUI interfaces provided using Microsoft's Foundation Classes. (MFC)

Peripheral Interfacing

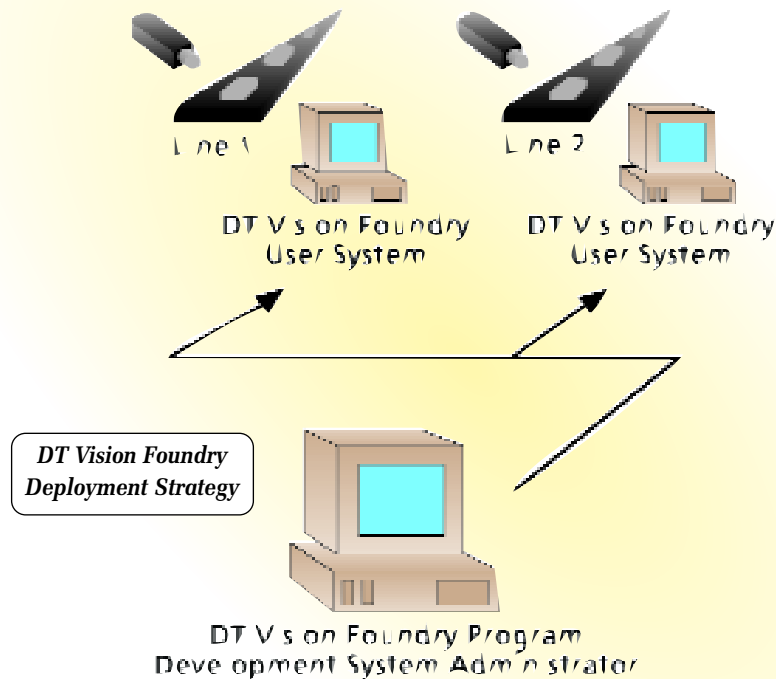
Interfacing to outside peripherals for external Pass/Fail event control or signal reading is accomplished using the Digital I/O Tool with the optional Data Translation DT351 or DT2820 Digital I/O board.

Data Transfer

Resultant test data is exported from each tool using DDE (Dynamic Data Exchange). Data and images can be exported from the system using the Serial I/O Tool or written to a file for database or data logging purposes.

Calibration

DT Vision Foundry supports an unlimited number of calibration "objects", allowing for all cameras to be individually calibrated in multi-camera systems. Supports Full Projective Transformation with sub-pixel accuracy.



Advanced Algorithm Technologies

DT Vision Foundry uses advanced vision algorithms for more accurate and more robust inspection. These advanced technologies allow DT Vision Foundry to be used in environments where ideal conditions, such as part positioning, lighting, part reflectivity, etc., cannot be easily controlled or maintained. This not only reduces programming time and tooling costs, but also helps reduce false failures and incorrect measurements during the inspection process.

Complete Documentation and On-Line Help

DT Vision Foundry comes complete with hard-copy as well as on-line documentation. A detailed User's and API manual set is provided, as well as context-sensitive on-line help and on-line documentation. All application commands and tool library calls are detailed with step-by-step examples, making it easy to learn how to use the many powerful functions and features available in DT Vision Foundry.

Technical Support

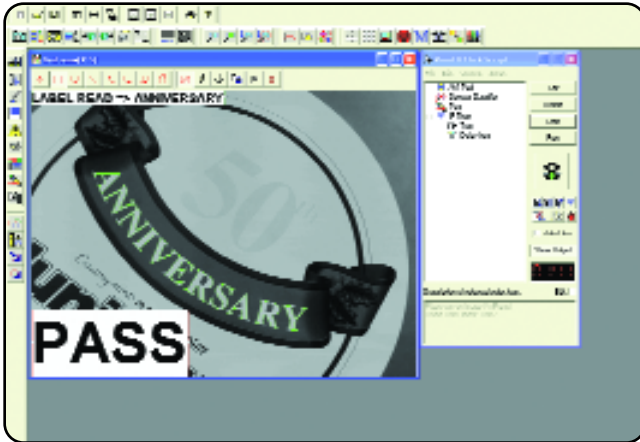
As you develop your application, support is available when you need it. Priority Telephone Support is available from your point of purchase during your 90 day warranty period; you can also request complimentary support via e-mail or fax at any time. Extensive information is also available 24 hours a day on our web site at www.datatranslation.com, including example programs, updates, application notes, a searchable Knowledge Base, and much more. Additional support options are available; contact your Data Translation representative for details.

Application Services

Data Translation's Application Group is also available to support you and your application. Feasibility studies, as well as applications and integration help, are available. Contact your Data Translation representative for details.

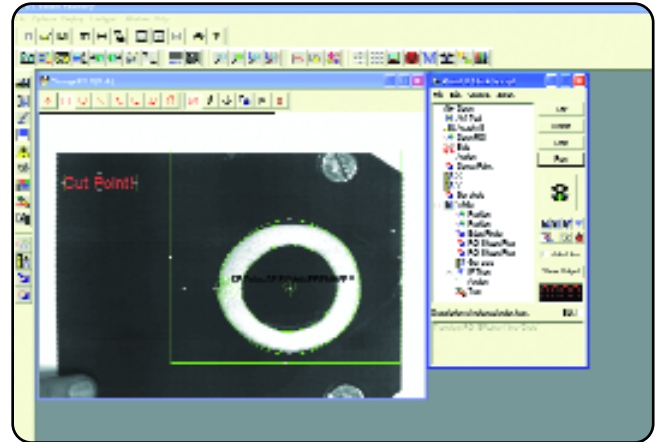
DT Vision Foundry's Powerful Tools Take on Real-World Challenges...

OCR



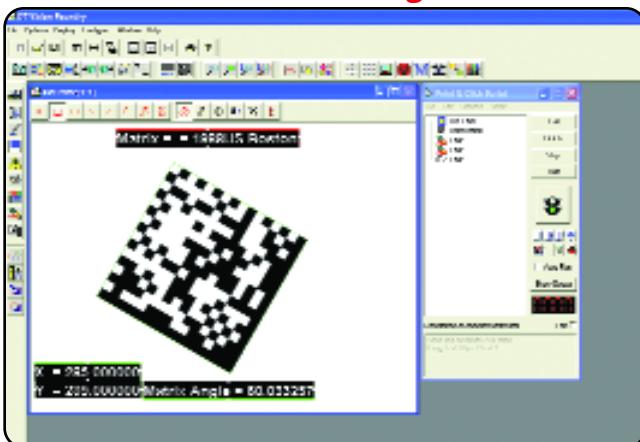
In this example, the Contour Classifier Tool, which provides OCR capability, was used to read letters on a curve while the object being inspected was in motion.

Presence Verification



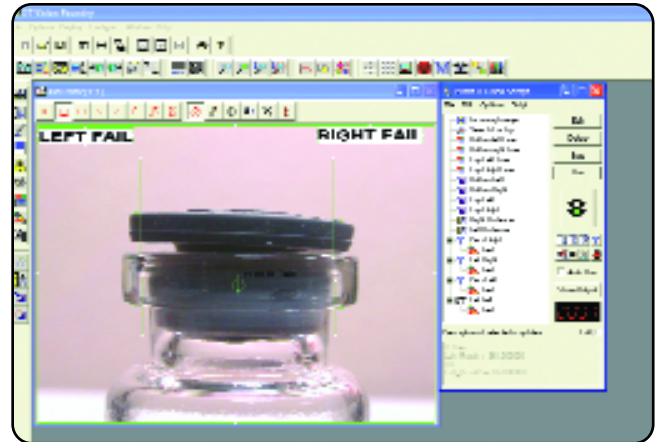
Using a combination of DT Vision Foundry tools, a complex application involving the location of coordinates on a cylindrical object was solved. The manufacturer needed to know at which point on the object to make a cut. The DT Vision Foundry program found the presence of the point and provided the coordinates.

2D Data Matrix Reading



The company in this example needed to read 2D Data Matrix bar codes, possibly damaged, at any angle. The 2D Data Matrix Tool auto-detected the size of the matrix and read it in the rotation of 360 degrees. The Tool reported the angle, the x-centroid and the y-centroid, and easily read damaged codes.

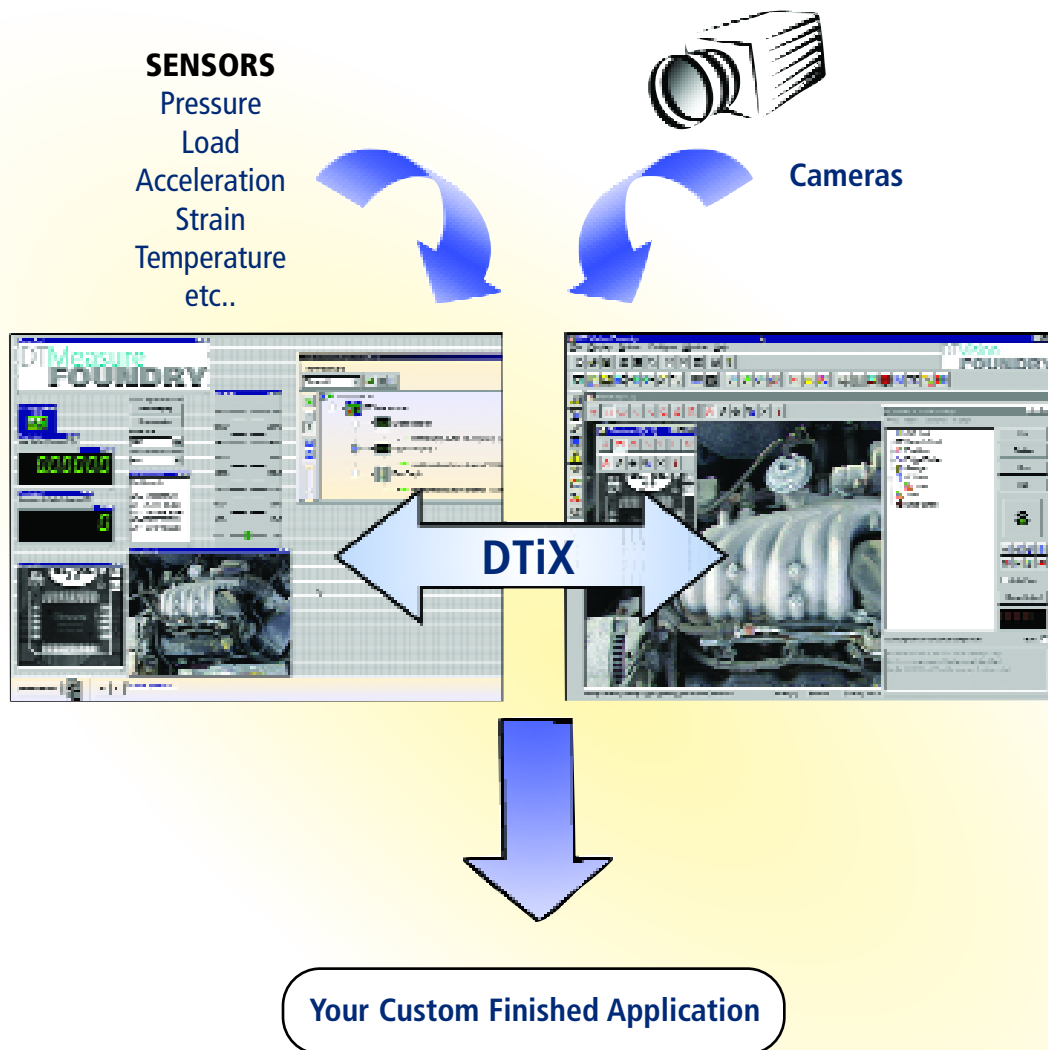
Measurement



In this example, a medical company needed to insure that the stopper in each vial was secure. The problem was solved by measuring the distance from the top of the stopper on both left and right sides to a point on the vial. The Search Tool with sub-pixel analysis capability was used to determine the exact location of the stopper. The DT3612 frame grabber was used for its accuracy and speed – the system was able to handle 15 vials per second.

Correlate Machine Vision and Sensor-based Measurements

If you want to integrate sensor-based measurements into your application, consider DT Measure Foundry, our test and measurement application builder.



DT Measure Foundry and DT Vision Foundry

DT Vision Foundry is able to share variables and images with DT Measure Foundry through DTiX. DTiX is a built-in server/peer-to-peer communication that comes with DT Vision Foundry. DTiX allows these two products to share and communicate information.

System Requirements

Hardware

IBM PC compatible with MMX processor (Pentium III or equivalent recommended)

- 128 Mbytes RAM (256 Mbytes recommended)
- 150 MB of free hard disk space
- SVGA Monitor (800x600 screen resolution or higher recommended)
- PCI interface for Frame Grabber board (optional, used for image capture) or digital I/O
- CD-ROM drive
- Sound Card (optional, used for multimedia on-line help)
- Serial port (for Pass/Fail measurement data and image output)
- Keyboard and mouse

Software

- Windows 2000/XP Operating System.
- Microsoft Visual C++ 6.0 or better (optional, used for creating custom applications and custom tools)

Frame Grabber and Digital I/O (optional)

■ DT3162 – Variable-scan monochrome frame grabber
Data Translation MACH Series PCI Frame Grabbers, including:

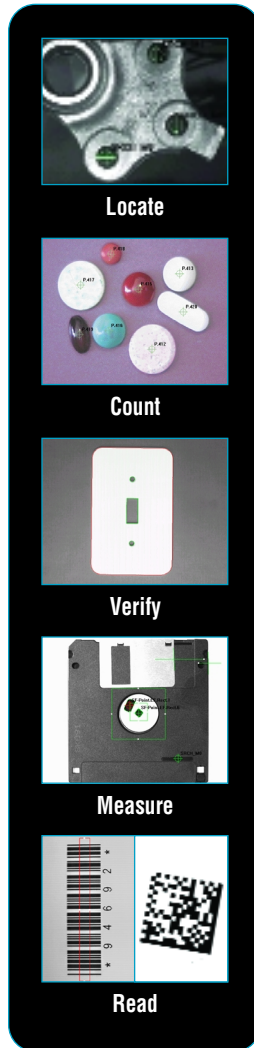
- DT3152 – Variable-Scan monochrome frame grabber
- DT3153 – Composite color/S video frame grabber
- DT3154 – RGB Color frame grabber
- DT3155 – Monochrome frame grabber
- DT3157 – 8-bit to 16-bit single and dual channel RS-422 digital camera interface

Data Translation DT3130 Series PCI Frame Grabbers, including:

- DT3131 – Single frame grabber; 3 inputs (muxed), 1 active; monochrome, composite color/S-video
- DT3132 – Double frame grabber; 6 inputs (muxed), 2 simultaneously active; monochrome, composite color/S-video
- DT3133 – Triple frame grabber; 9 inputs (muxed), 3 simultaneously active; monochrome, composite color/S-video

Data Translation PCI/ISA Digital I/O

- DT351 – 16 channel (8 input, 8 output) isolated digital I/O board for PCI



Pharmaceutical

Consumer Goods

Automotive

Product Packaging

Electronics

Ordering Summary

All Data Translation software products are covered by a 90-day warranty. For pricing information, see current pricelist, visit our website, or contact your local reseller.

- SP1400-CD DT Vision Foundry Development Software
DT Vision Foundry Development Software License (USB HW key)
- SP1402-CD DT Vision Foundry Run-Time

DT Vision Foundry Software Upgrade packages are available. Call for details.

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