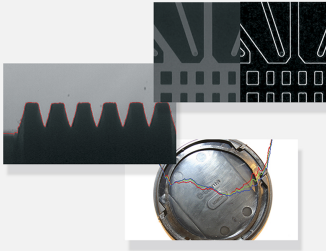


EasyImage

Image processing library



At a Glance

- Set of optimized fundamental image processing and analysis functions
- Convolution and morphology
- Geometric transformations
- Histogram computation and analysis
- Noise estimation and reduction
- NEW: HDR (High Dynamic Range) image fusion

Benefits

Open eVision Studio: Evaluation, prototyping and development tool

Open eVision Studio is the evaluation, prototyping and development tool of Open eVision. Its intuitive graphical user interface allows you to call and immediately see the result of any of eVision's functions. A scripting function generates the corresponding code, which can then be copied and pasted into your application.

Open eVision Studio is free (when using Open eVision 2.0 and above) and can be downloaded to evaluate the performance of Open eVision.

EasyImage Description

- EasyImage includes operations usually performed as pre-processing steps to improve the image quality and obtain a good contrast between the background and the objects to be inspected.
- EasyImage supports gray-level and color images. Selected morphology functions are also optimized for binary (1-bit per pixel) and bi-level images.
- EasyImage includes numerous image processing functions, such as enhancement and restoration by linear or non-linear filtering, arithmetic and logic operations, geometric transformations for image registration, histogram analysis for thresholding, projection, ...

Flexible Masks

- Flexible Masks provide a powerful way of restricting the processing to freely selected parts of the image.
- They are supported by selected image analysis functions.

EasyImage includes the following functions:

- Gain / Offset change: Normalization, Uniformization, Lookup table mapping
- Thresholding: Automatic thresholding, Min residue, max entropy, isodata, Manual thresholding; Single threshold (absolute and relative), Double threshold, Histogram-based threshold
- Arithmetic operations: Addition, Subtraction, Multiplication, Division, Copy, Invert, Module, Shift
- HDR (High Dynamic Range) image fusion
- Logical and bitwise operations: AND, OR, XOR, NOT
- Pixel comparison, Minimum, maximum
- Histogram equalization
- Linear filtering: Edge detection (Laplacian, Gradient, Prewitt, Sobel, Roberts filters), Sharpening, Smoothing (Gaussian and uniform filters). Custom kernel filtering: Kernel creation and management functions.
- Non-linear filtering: Morphological operators (Erosion, Dilation, Opening, Closing, Thinning, Thickening, Top-hat filter, Hit-and-miss transform, Morphological distance), Median filter
- Geometric transformations: Image registration (alignment), Horizontal and vertical mirroring, Translation, scaling and rotation with optional interpolation, LUT-based (un)warping
- Vector operations, Projection, Profile sampling (line segment, path, contour) and analysis
- Statistics: Measurement of Area, Binary moments, Weighted moments, Gravity center, Pixel count and pixel statistics, Minimum and maximum gray-level value, Average, variance and standard deviation
- Histogram computation and analysis
- Image focusing
- Noise estimation and reduction: Spatial noise reduction (Convolution, Median filters), Temporal noise reduction (Recursive average, Moving average, Average), Noise estimation (Root-mean-square noise, Signal-to-noise ratio)
- Elimination of the interlaced images artifacts by rebuilding or re-aligning fields
- Feature point detectors: Harris corner detector, Canny edge detector
- Other operations: Overlay, Scalar gradient

Choose the most suitable Licensing System

- Open eVision Dongle-based Licenses: Dongle-based Licenses offer the flexibility to be transferred from a PC to another. To purchase a Dongle-based License, select one of the Euresys dongles (USB or Parallel) plus the license(s) to be stored on this dongle. Licenses are delivered as activation codes, which are stored on the dongles.
- Open eVision Software-based Licenses: Software-based licenses do not require any dongle, they are linked to the PC on which they have been activated. Licenses are delivered as activation codes and can be managed online.

Applications

MACHINE VISION FOR THE GENERAL MANUFACTURING INDUSTRIES

Image enhancement

EasyImage is used to enhance the quality of printed characters or codes before recognition.

Presence / Absence check

EasyImage gray-scale analysis functions are used for simple presence/absence checks

Surface analysis

EasyImage is used to reveal the surface defects, and the blob analysis functions of EasyObject is able to segment and measure them.

LIFE SCIENCES & MEDICAL

Noise reduction for Xray imaging

EasyImage contains spatial and temporal noise reduction functions.

Specifications

Software

Host PC Operating System	• Open eVision is a set of 32-bit and 64-bit libraries that require a processor compatible with the SSE2 instruction set. • Open eVision can be used on the following operating systems: – Windows 10, 8 and 7 (32- and 64-bits) – Windows Vista 32-bits Service Pack 1 – Windows XP 32-bits Service Pack 3 – Windows Server 2008 32-bits – Windows Server 2008 R2 64-bits – Windows Server 2003 32-bit Service Pack 1 – Windows Embedded Standard 2009 32-bits • The Open eVision installer does not allow installation on virtual machines. • Minimum requirements: – Display size: 800 x 600. 1280 x 1024 recommended. – Color depth: 16 bits. 32 bits recommended. – Between 20 MB and 300 MB free hard disk space for libraries, depending on selected options. – Between 60 MB and 400 MB free hard disk space for development tools, depending on selected options.
--------------------------	--

APIs	Supported Integrated Development Environments and Programming Languages: • Microsoft Visual Studio 6.0 SP6 (C++, Basic) • Microsoft Visual Studio .NET 2003 SP1 (C++) • Microsoft Visual Studio 2005 SP1 (C++, C#, VB .NET, C++/CLI) • Microsoft Visual Studio 2008 SP1 (C++, C#, VB .NET, C++/CLI) • Microsoft Visual Studio 2010 (C++, C#, VB .NET, C++/CLI) • Microsoft Visual Studio 2012 (C++, C#, VB .NET, C++/CLI) • Microsoft Visual Studio 2013 (C++, C#, VB .NET, C++/CLI) • Borland C++ Builder 6.0 update 4 (C++) • CodeGear C++ Builder 2009 (C++) • CodeGear Delphi 2009 (Object Pascal) • Embarcadero RAD Studio XE4 (C++, Object Pascal) • Embarcadero RAD Studio XE5 (C++, Object Pascal)
------	---

Ordering Information

Product code - Description	• 4001 - EasyImage for USB dongle • 4051 - EasyImage for PAR dongle • 4101 - EasyImage for board licensing • 4151 - Open EasyImage for USB dongle • 4201 - Open EasyImage for PAR dongle • 4251 - Open EasyImage for soft-based licensing
----------------------------	---



AMERICA

Euresys Inc.

27126-B Paseo Espada - Suite 704
San Juan Capistrano, CA 92675 - United States
Phone: +1 949 743 0612
Email: sales.americas@euresys.com

EMEA

Euresys SA

Liège Science Park - Avenue du Pré-Aily, 14
4031 Angleur - Belgium
Phone: +32 4 367 72 88
Email: sales.europe@euresys.com

ASIA

Euresys Pte. Ltd.

750A Chai Chee Road - #07-15 Viva Business Park
Singapore 469001 - Singapore
Phone: +65 6445 4800
Email: sales.asia@euresys.com

CHINA

Euresys Shanghai Liaison Office

17F, Unit AB, N. 588 Yan An Dong Road - Huangpu District
CN-200001 Shanghai - China
Euresys上海联络处
上海黄浦区 延安东路588号17楼AB座
200001
Phone: +86 13817814488
Email: sales.china@euresys.com

JAPAN

Euresys Japan K.K.

Expert Office Shinyokohama - Dai 2 Ueno Building, Shinyokohama 3-7-18
Kouhoku-Ku, Yokohama-Shi 222-0033 - Japan
〒222-0033
神奈川県横浜市港北区新横浜3-7-18 第2上野ビル エキスパートオフィス新横浜
Phone: +81 45 594 7259
Email: sales.japan@euresys.com

More at www.euresys.com

