OPTO ENGINEERING®

OEVIS®
OPTO ENGINEERING®
VISION SOFTWARE

MADE BY
OPTO ENGINEERING®

Where innovation takes shape.

Choosing Opto Engineering® means relying on a partner who understands vision challenges and is committed to creating long-term value through innovation, quality and know-how.

OEVIS® IS A CUTTING-EDGE NO-CODE SOFTWARE FOR RAPIDLY DEVELOPING MACHINE VISION APPLICATIONS.

It is tailored for system integrators, machine vision specialists and automation engineers who seek a **versatile and user-friendly vision software solution**.

OEVIS®
ALL-IN-ONE VISION SOFTWARE.

KEY ADVANTAGES

EASE OF USE
Intuitive, flowchart-based development with no programming required.

ALL-IN-ONE
Develop and execute with the same license. Effortlessly configure any GenIcam camera.

EASY INTEGRATION
Supports diverse hardware and communication protocols.

COMPREHENSIVE SUPPORT
Access extensive resources, example programs, support and training.

ADVANCED CAPABILITIES
Handle complex inspections with multiple cameras and multi-threading.

GET A 30-DAY FREE TRIAL
CONTACT US

FUNCTIONALITIES

OEVIS® is an all-in-one vision software
available for Windows-based PC systems.

FLOW-BASED PROGRAMMING

Fast-use, intuitive graphical development method with automatic linking of computer vision and logic tools.

MACRO, LOOPS & CONDITIONS

Create complex programs, including loops, conditions and subprograms without writing any code.

DEBUGGING

Run one single tool at a time for troubleshooting or checking whether the program is correct or not.

EASY FACTORY INTEGRATION

Support a variety of communication protocols used in factory automation such as Modbus, Ethernet/IP, OPCUA and many more.
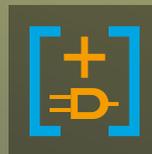
MULTITHREADING ADD-ON

Parallel execution of algorithms and analysis cycles. Synchronous or asynchronous acquisition from multiple cameras and simultaneous image processing.

HMI DESIGN

Easily create beautiful and customized user interfaces within the same application software used to create your vision project.

CUSTOM C# CODE

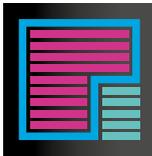Insert C# code inside the job to implement custom operation, logic and data manipulation.

REST API

Seamless communication with web services,remote and local servers. Access to OEVIS configuration data and results through REST API.

WIDE SELECTION OF TOOLS FOR COMPUTER VISION.

IMAGE PROCESSING, SEGMENTATION AND DEFECT DETECTION

OEVIS® features many algorithms for surface and completeness inspection, including blob analysis, erosion, dilation, opening and closing, segmentation tools, standard, relative, dynamic, color thresholding, image unwrapping and many more.

TEMPLATE MATCHING

OEVIS® matching algorithms robustly and accurately identify objects even under challenging conditions such as rotation, local deformation, varying textures, and changes in scale.

CALIBRATION, CORRECTION OF DISTORTION, ROBOT GUIDANCE

OEVIS® high-performance algorithms for distortion correction meet the requirements of telecentric optics, eliminating perspective distortion. Furthermore, OEVIS® integrates precise hand-eye calibration algorithms for vision-guided robotic applications, such as pick-and-place.

1D - 2D EDGE DETECTION AND METROLOGY
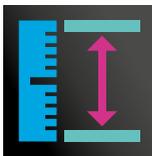
OEVIS® efficiently finds edges using many different algorithms and contour analysis techniques. OEVIS® state-of-the art algorithms measure with subpixel accuracy diameters, lengths, concentricity, radiuses, and angles of complex parts.

BARCODE, QR-CODE AND 2D DATACODE READING

OEVIS® advanced algorithms ensure high-speed and accurate reading of all common barcodes and a wide range of Data codes, including Data Matrix ECC200, QR, PDF417, Aztec and many others.

OPTICAL CHARACTER RECOGNITION/VERIFICATION (OCR/OCV)
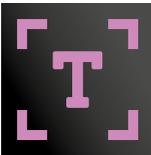
OEVIS® employs high-performance algorithms to localize characters, irrespective of their orientation or font type. Recognition accuracy is further improved with data augmentation functionalities. Moreover, many pre-trained fonts are available.

POLARIZATION ANALYSIS

OEVIS® features many algorithms to analyze images acquired with polarized cameras, including AoLP/DoLP mapping, simulation of polarization states and so on.

DATA CLASSIFICATION & MACHINE LEARNING

OEVIS® features machine learning models (MLP, SVM, KNN) and clustering functions (KMeans, DBSCAN) for complex image analysis tasks such as distinguishing between different textures or cluster objects with irregular shapes.

SIMPLIFIED WORKFLOW

OEVIS® is conveniently organized into four sections that guide you in the development of your vision application.

1. SYSTEM

Connect & configure third-party automation hardware via multiple supported communication protocols. Manage multiple users access with specific permissions.

Wide range of supported standards, communication protocols and hardware:

- Profinet[1]
- Ethercat[1]
- Ethernet/IP[1]
- Modbus TCP[1]
- ADAM Advantech I/O[2]
- Modbus Client TCP / RTU[2]
- Modbus Server TCP / RTU[2]

- OPC UA Client[2]
- Serial RS232 / RS485[2]
- TCP/IP[2]
- Advantech PC
- AdLink PC
- IMAGO Technologies PC
- Neousys PC

[1]Via CIFX Hilscher cards   [2]Native support

2. ACQUIRE

Acquire from multiple cameras.

Preview the live streaming images.

Directly access all the GenICam parameters of each connected device.

Supports any GenICam GenTL camera. **GEN‹i›CAM**

3. JOB

- Create your vision project using various tools.
- Design from scratch a beautiful front end.
- All the windows can be conveniently moved according to the user preferences.

A EXECUTION PANEL

Save, run in a loop or once, stop and debug your project. Select whether to run only the main thread or multiple threads simultaneously.

B JOB TOOL BAR

Tools are the bricks of an OEVIS® project. Each tool is composed by an action that is performed when the tool is run and a list of properties that customize its behavior.

C PROJECT EXPLORER

View Project parts (init, loop and finalize), manage Macros, create Variables and Fifo queues, search tools and create Recipes, where you can save values to be published on the HMI.

D PROPERTY INSPECTOR

Display and set all the tools properties, including name, input & output values.
Parameters followed by the "(A)" symbol automatically link to the first compatible value in the execution flow.

E JOB PANEL & SEARCH BAR

This panel shows the list of selected tools. The connection between tools is shown by half-circles located at the top (inputs) or at the bottom (outputs) of each tool. Different colors identify connections between different tools.

F DEBUG TOOL BOX

Display the event log, keep track of the property value of the selected tools when the program is running and test the connection to a Modbus server.

G EVALUATE

Visually display dimensional values or any other numerical property to quickly verify if it falls within a predefined range.

H VISUALIZER

Preview the results of image analysis and display features or other properties via drag & drop functionality from the property panel. Add multiple views, display data tables and much more.

I HMI DESIGN

Design and customize your application's front end with a built-in advanced graphic editor.
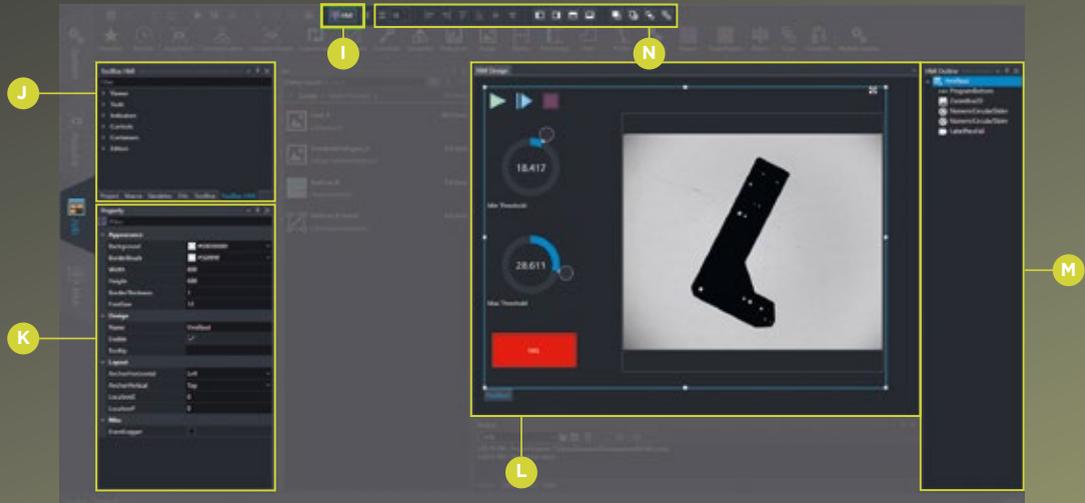
J HMI TOOL BOX

Add a wide variety of items including charts, visual indicators of any type, toggle switches, control buttons, text and your logo. Simply drag & drop them onto the HMI canvas.

K HMI PROPERTY & LINKING

Deeply customize the HMI by editing the layout, appearance and behavior of the controls. To link the property of a tool to an HMI control, simply select the control, highlight the tool that you want to link and drag the tool's property onto the control label.

L HMI DESIGN CANVAS

The design canvas is where all control items are displayed. You can resize, move or transfer into different containers any item by dragging it with the mouse.

M HMI OUTLINE

View all the HMI items that you have added displayed in a tree and organized according to their hierarchy.
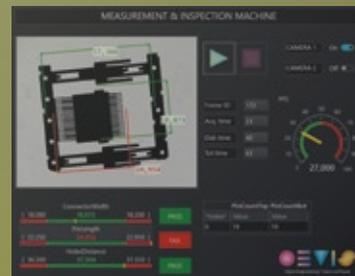
N HMI TOOL BAR

Quickly edit the layout of controls including alignment, spacing, order of appearance and easily dock the selected control to the left/right/top/bottom/side of its parent container.

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4. HMI EXECUTION

Results of the processing are displayed to the end user in beautiful and intuitive front ends.

WHY AN ALL-IN-ONE SOFTWARE?

- **Within the same software you can acquire and process images**, communicate with diverse hardware and design an intuitive front-end for the final user of the vision application

- **Use the same license to develop and execute the inspection** (combines developer with runtime)

- **Without additional licenses you can remotely modify a vision application that is running on the factory floor to:**
  - Add new vision tasks
  - Modify the line speed, change parts size, increase the camera resolution and so on.

Opto Engineering® designs and manufactures optics, cameras, lighting and software providing comprehensive support for advanced solutions and technologies in the field of machine vision.

Our commitment to innovation ensures a wide range of products featuring patented and distinctive technologies. From advanced optics to cutting-edge software solutions, our portfolio is crafted to address the unique needs of various industries.

By leveraging our proprietary technologies, we deliver exceptional value and reliability, supporting our customers to achieve their goals with confidence.

THE PARTNER FOR VISION SYSTEM DEVELOPERS

⬡ THE MACHINE VISION COMPANY®

OPTICS • CAMERAS • LIGHTING • SOFTWARE

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