

Metus

Metrology software for VISIUS optical CMM



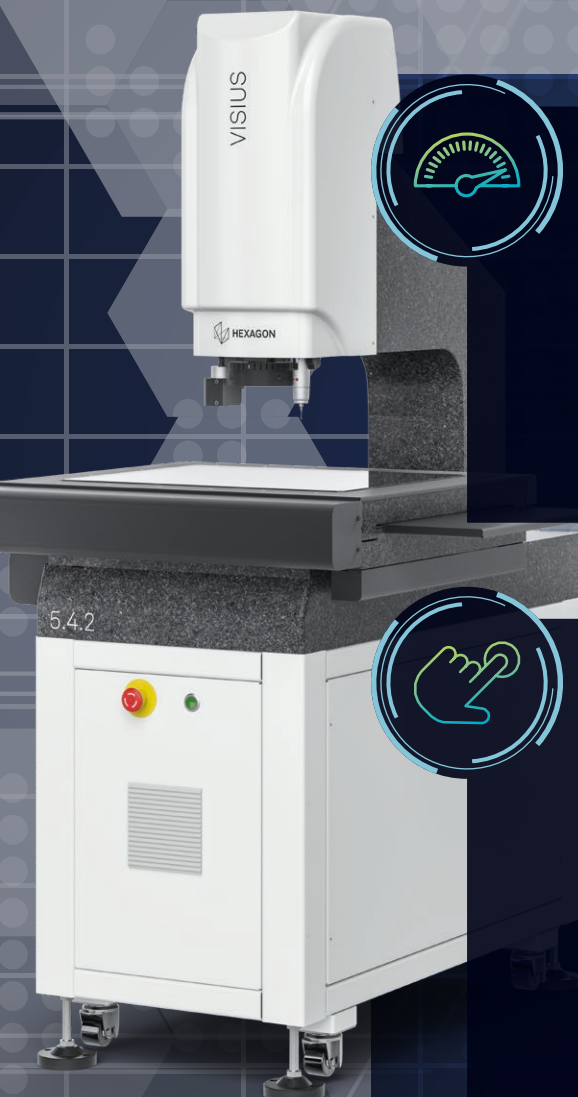


Metus

High speed, high reliability and intuitive operation

Simple, efficient 2D and 2.5D metrology software with convenient tools and streamlined workflows for every aspect of non-contact vision measurement.

Designed for use with Hexagon's VISIUS optical CMM, Metus removes complexity from vision measurement workflows, reducing time and costs associated with quality and process control tasks in industrial applications.



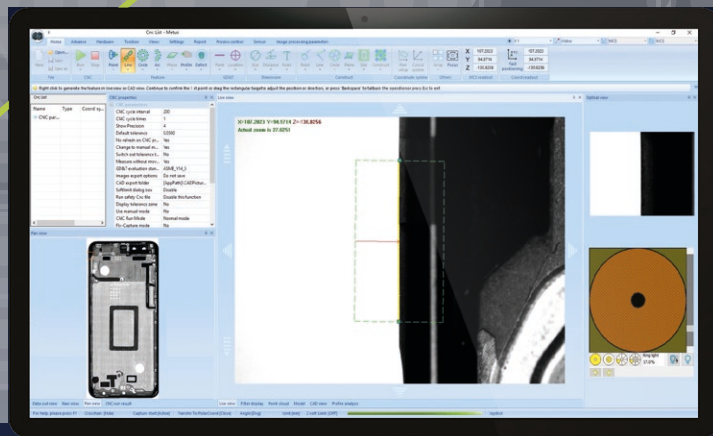
FAST

- Save time and effort with streamlined measurement operations
- Quickly measure distance, angles, and holes. Simplify complex tasks such as creating virtual centerlines, GD&T assessments and XYZ coordinates
- Integrated programming with CAD data.



SIMPLE

- Clear screen layout for direct access to common programming, evaluation and reporting functions
- Intuitive software with a minimal learning curve. Set up measurements with just a few mouse clicks
- Programme measurement routines using a range of time saving tools
- Use camera based navigation to quickly identify points, lines, and circles to measure
- Clear, concise reporting available in a range of convenient, easy to share formats.



RELIABLE

- Precision measurements, compliant with industry standards created for quality control and compliance in manufacturing
- Ensure compliance with design specifications using embedded Geometric Dimensioning and Tolerancing (GD&T).
- Powerful image processing with trusted edge detection algorithms.



EASY TO LEARN, EASY TO USE

- Intuitive user interface with simple icons makes it easy for users to navigate and operate
- Customise workspaces with dockable command panels. Save time by accessing commonly-used functions and controls in a single view
- Flat learning curve and reduced training through optimal user guidance during operation.



SCALABLE & FLEXIBLE

- Seamless integration with Hexagon Visual Detection, Hexagon's AI-based automated surface inspection tool
- Export results data to third party databases such as SQL Server, Oracle and more.





Metus

Key features and benefits

Smart edge detection

- Advanced image processing algorithms with powerful image and element filters
- Reliable detection of geometric elements even with low-contrast edges

Programming with CAD data

- Import DXF, Gerber and other CAD formats, for automatic feature extraction and measurement routine generation. Reduce programming time and eliminate data input errors

Image stitching, Panoramic view

- Stitching of multiple FOVs from the vision sensor into a high-resolution panoramic image of the measuring region
- Accurate sensor positioning and fast feature programming within the stitched panorama

3D graphical form deviation analysis

- Graphical representation of the form deviation of measured elements
- Convenient analysis of the measurement results



Field of view measurement

- Simultaneous measurement of all elements that fit within the vision sensor's field of view
- Acceleration of the inspection process by up to 70%, depending on feature size and density

Real-time colour-coded pass/fail result summary

- Quick identification and remeasuring of out-of-tolerance or failed-to-measure parts
- Cut data analysis time, improve overall inspection efficiency

Programme editing with instant data refresh

- Easy programme editing with batch modification of feature parameters and instant data refresh
- Improvement of programming and retesting efficiency



Supporting key industries with vision-based inspection

- Consumer electronics
- Chips and connectors
- Semiconductor packaging
- Medical devices and prosthetics
- General manufacturing
- Plastics engineering

Measurement features

Easily measure a wide range of simple and complex features:

- Point, Line, Circle, Arc Measurements
- Coordinate Creation, Part Setup, Part Match
- Construct Point, Line Circle, Plane etc.
- Dimension: Distance, Angle, Size, etc.
- True Position, Concentricity, Symmetry, Perpendicularity, Parallelism, Angularity.
- Straightness, Circularity, Flatness, Line Profile

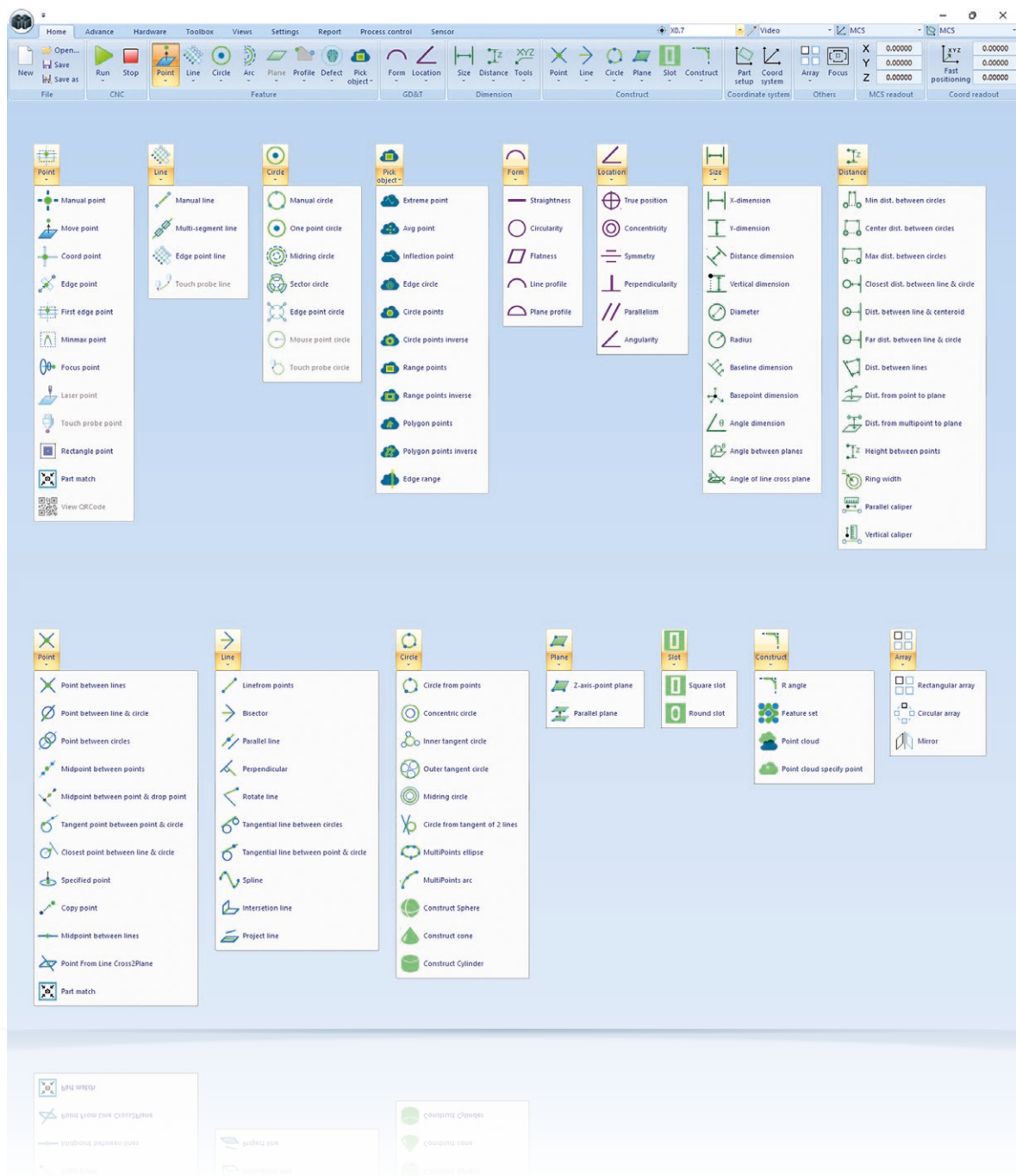
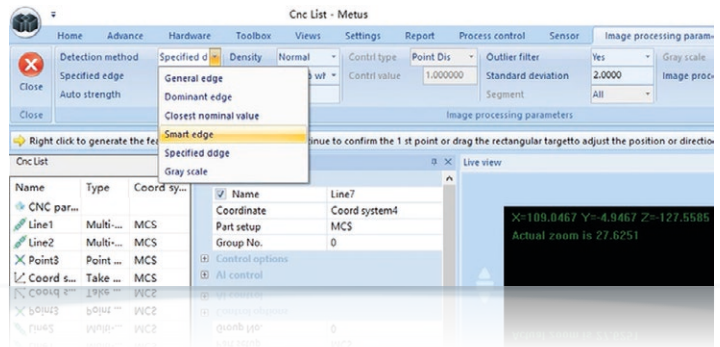


Image processing

Powerful image processing algorithms

Metus can quickly identify lines, circles and R angle within one field of view for highly efficient measurement routine creation.



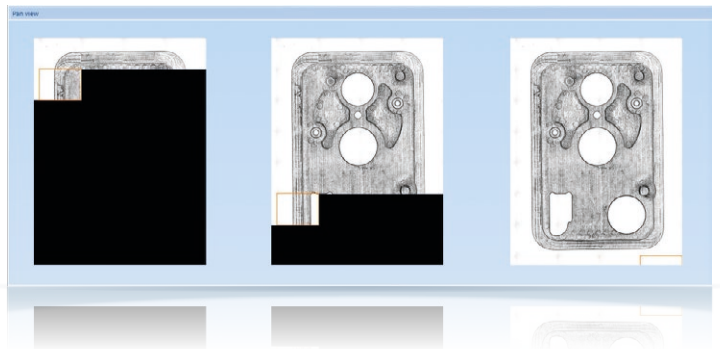
Auto focus

Metus auto focusing function ensures the sensor is able to provide optimal viewing for most accurate measurement.



Image stitching

Combine multiple sub-images of a single part into one panoramic view for faster navigation.



Morphological operations

Dilation, corrosion, contour detection and processing, contour bounding box, contour moment, etc.

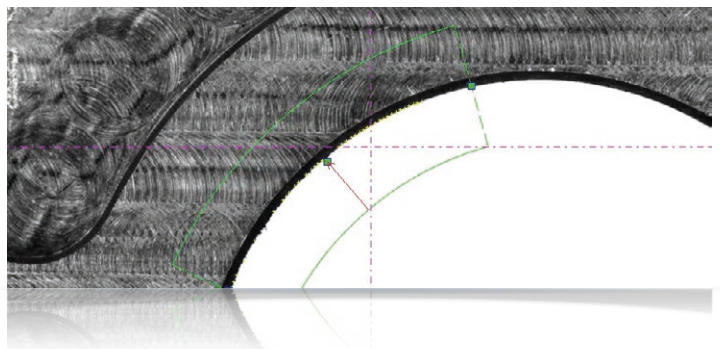
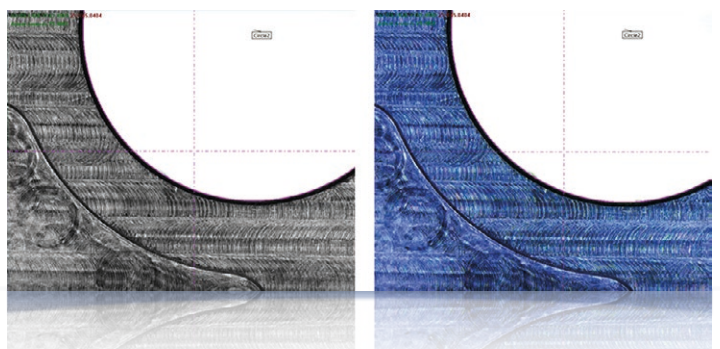


Image enhancement

Segmentation and smoothing processing, edge extraction functions, such as noise adding, image flipping, scaling, color space transformation, Sobel, Laplacian and more.



Programming capabilities

Simple programme editing

Users can easily edit elements and steps in CNC based measurement programmes.

Advanced loop feature

The advanced Loop function streamlines measurement of ring and rectangle array functions. This reduces the programming task when facing a large number of arrays within bigger workpieces.

Repeatable measurement step sequences

Measurement steps can be added to a group which can be recalled as a repeatable sequence. This saves time when measuring a workpieces that contains many similar features.

CAD programming

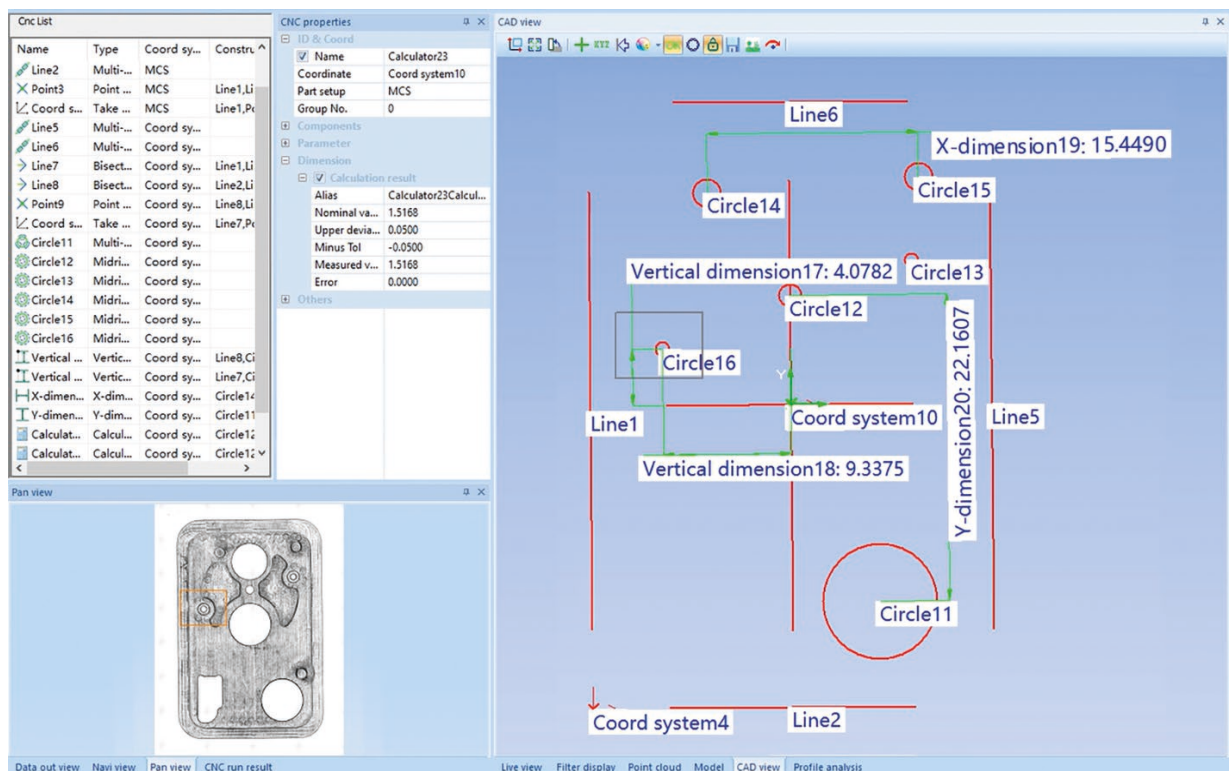
Metus supports offline programming by importing CAD drawings. It automatically recognizes tens of thousands of measurement elements in seconds, and is compatible with DXF, DRL, Gerber and other file formats.

Open CNC program sharing

Measurement programmes created in Metus using CNC (Computer Notational Control) can be shared across multiple Hexagon metrology systems.

Flexible coordinate systems

Metus supports multiple coordinate systems which help to support programming features that require translation and rotation. Any saved coordinate system can be recalled instantly.



Reporting and data management

Reporting features

Metus can calculate visual statistical data such as CA, CP, CPK, and generate measurement reports in real time. Results can be shared and accessed through common file formats.

Customise report content, set cell colors to highlight out-of-tolerance conditions, and export to EXCEL, TXT and CSV. Create a summary for each new report.

Export to third party databases

Metus provides the Inspect interface for uploading measurement data. It is compatible with other mainstream databases on the market such as SQL Server, Oracle and more.

Data formats and uploading methods can be customised; Inspect interface is also compatible with systems such as RFID and PLC, thus offering potential for automation.

Data Out View

	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15
Name	Measurement time	X Distance	Y Distance	Circle1.Radius											
Nominal Value		2.5000	1.5000	1.4500											
Plus Tol	11:21:54	0.0100	0.0100	0.0200											
Minus Tol	11:21:56	-0.0100	-0.0100	-0.0200											
Max Diff Out Tol		0.0400	0.0400	0.0275											
Max Value	1 Cycle No.	2.5200	1.5200	1.4715											
Min Value	00:00:02	2.4800	1.4800	1.4440											
Average Value	00:00:02	2.5000	1.5000	1.4577											
Out Tol		0.0100	0.0100	0.0015											
CA		0.0000	0.0000	0.3870											
CP		0.3760	0.3760	1.0938											
CPK		0.3760	0.3760	0.6705											
PP		0.2258	0.2258	0.6564											
PPK		0.2258	0.2258	0.4024											
1	11:20:24	2.4800	1.4800	1.4440											
2	11:20:44	2.4940	1.4940	1.4536											
3	11:21:11	2.5000	1.5000	1.4577											
4	11:21:30	2.5060	1.5060	1.4619											
5	11:21:56	2.5200	1.5200	1.4715											
6															

Out of tolerance color setting

80% ~

60% - 80%

40% - 60%

20% - 40%

0 - 20%

0 - -20%

-20% - -40%

-40% - -60%

-60% - -80%

-80% ~

Red

Green

Blue

Views

0X0000FFFF

☒ Control tolerance

UpCtrl

0.0050

Lower

-0.0050

Upper

OutUpTol

Lower

OutLowTol

Ok

Cancel

Out of tolerance color setting

80% ~

60% - 80%

40% - 60%

20% - 40%

0 - 20%

-20% ~ -40%

-40% - 60%

-60% - 80%

-80% ~

Red

Green

Blue

Views 0X0000FFFF

☒ Control tolerance

UpCtrl 0.0050

Lower -0.0050

Upper OutUpTol

Lower OutLowTol

Ok Cancel

Data out view				
	A1	A2	A3	A4
Name	Measu...	X1	Y1	D1
Nominal value		23.8949	97.6088	1.5000
Plus Tol	19:06:52	0.0500	0.0500	0.1000
Minus Tol	19:07:11	-0.0500	-0.0500	-0.1000
Max difference		0.0325	0.0206	0.0263
1	19:06:30	23.8921	97.6065	1.5618
2	19:08:55	23.9246	97.6271	1.5881
3				
4				

Edit

Clear data

Send data to

Data filter settings (global)...

Tolerance settings...

Hide header data

Options

Calculator...

OutTol color settings...

CSV output settings...

Select Excel temp...

Send data to Excel (horizontal)

Send data to Excel (vertical)

Export image to Excel settings...

Send data to *.TXT

Output to CSV (Comma Separators)

Send XYZ data to excel

Refresh csv and txt data

Auto output settings...

Export txt document

Export compensation format as *.txt

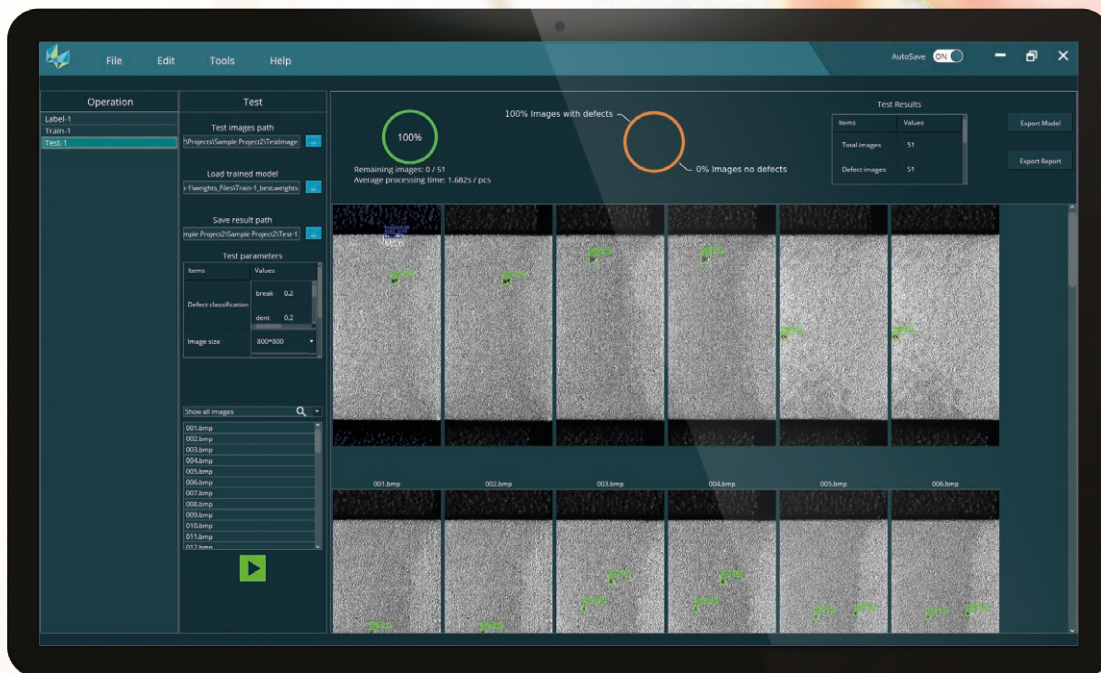
Print..

Hexagon Visual Detection

Hexagon Visual Detection is an AI-powered automated surface inspection tool capable of detecting surface defects on a wide range of materials. It is ready for use with Metus and VISIUS to combine feature measurement and visual surface inspection in a single system.

Machine learning technology is used to quickly learn from sample images in order to identify scratches, cracks, dents and more on glass, metal, plastics, ceramics and textiles.

This streamlined quality inspection and defect detection workflow reduces manual effort, delivers greater accuracy and improves throughput.





Metus is available with a MyCare package which provides access to the latest versions of the software at every release as well as comprehensive technical support and much more.

Hexagon's global presence extends to over 70 Solutions Centres globally. Our service and support network is strategically placed to ensure you have access to responsive technical assistance and experience minimal disruption to your operations.



Hexagon is a global leader in digital reality solutions, combining sensor, software and autonomous technologies. We are putting data to work to boost efficiency, productivity, quality and safety across industrial, manufacturing, infrastructure, public sector, and mobility applications.

Our technologies are shaping production and people-related ecosystems to become increasingly connected and autonomous – ensuring a scalable, sustainable future.

Hexagon's Manufacturing Intelligence division provides solutions that use data from design and engineering, production and metrology to make manufacturing smarter.

Learn more about Hexagon (Nasdaq Stockholm: HEXA B) at hexagon.com and follow us [@HexagonAB](https://twitter.com/HexagonAB).