HEXAGON

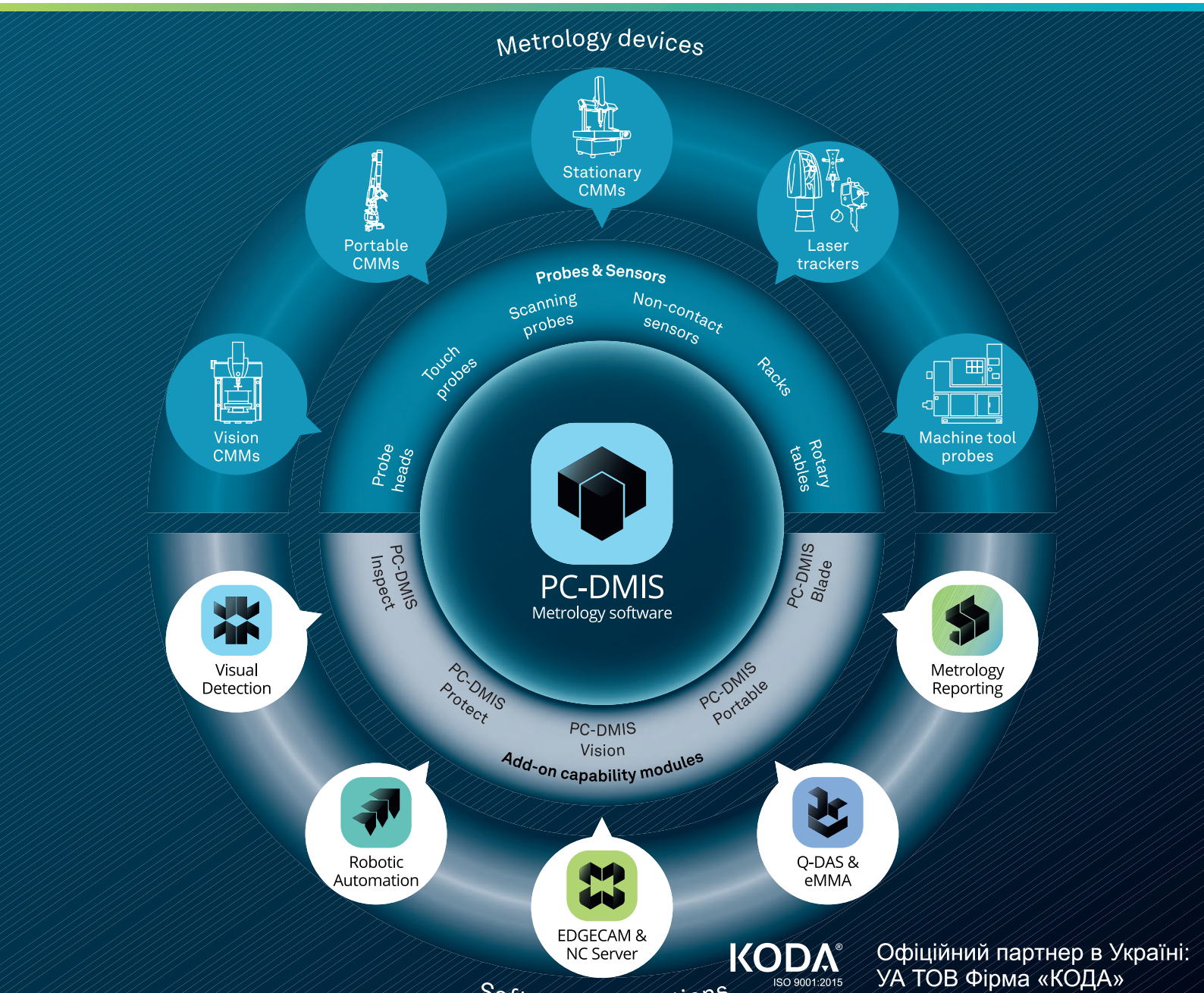
Solution brief

Make the connection

PC-DMIS connects with the widest range of devices and applications to capture, enhance and distribute quality data throughout your manufacturing workflow.

Connect, inspect and adapt

PC-DMIS is not just the world's favourite metrology software, it's also the connecting hub at the heart of your manufacturing workflow. Plug and play support for Hexagon's leading CMM devices and easy connectivity with key production and dimensional data platforms allow manufacturers to easily acquire and deliver critical measurement data for faster analysis and feedback, leading to efficiency gains across the entire manufacturing process.



Connectivity is key

Leading manufacturing performers are characterised by high levels of connectivity across processes and systems. The quality function plays a key role, connecting dataflows throughout the product lifecycle to enable data-driven decision-making.

Achieving these levels of connectivity and productivity requires greater product integration, with quality embedded throughout workflows. The impact of effective quality data goes far beyond quality assurance; it is essential to ensuring manufacturing objectives are met by reducing costs and maintaining production output.

As the world's leading metrology software, PC-DMIS is unrivalled in its support for metrology devices and integration with key applications in the Hexagon portfolio. It is the central hub in a digital ecosystem that enables users to seamlessly move dimensional data from where it is created to where it needs to be.

About PC-DMIS

PC-DMIS is a universal metrology software, providing a complete suite of programming capabilities for the creation and execution of measurement routines.

Used globally across a variety of manufacturing verticals, addressable applications include powertrain, automotive - powertrain, body and assembly, heavy industry, medical devices and consumer electronics.

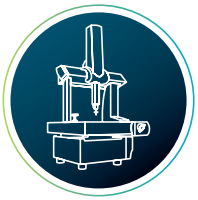
Cutting edge features enable users to tackle an extensive range of inspection challenges with a comprehensive geometric dimensioning and tolerancing (GD&T) toolset.

With the largest user base of any CMM metrology software in the world, PC-DMIS meets the latest ISO and ASME standards and is fully supported with an active community of users.

Part 1. Device support

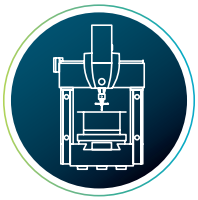
One universal software application for all types of metrology device

PC-DMIS is ready to work out of the box with Hexagon metrology hardware:



Stationary CMMs

Portable arms



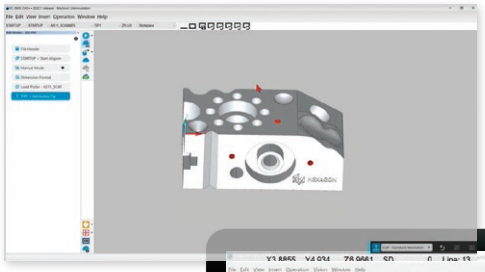
Vision CMMs

Laser trackers

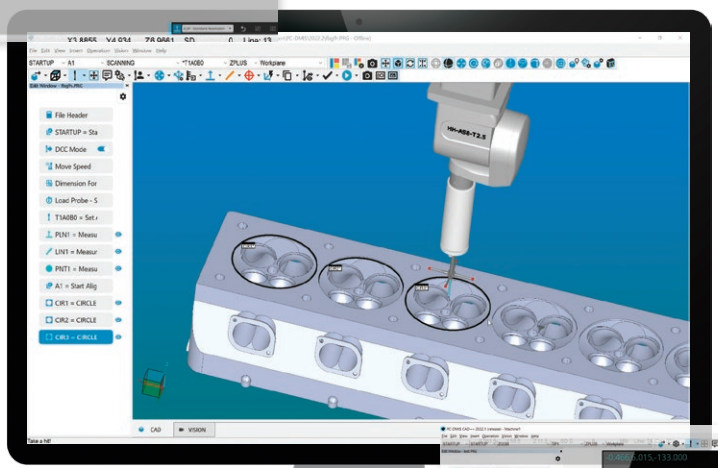
CNC Machine probes

Programmers and operators experience the same great looking, CAD enabled user interface across all device types. That means there's only one software to learn – no need to learn a new application for each device.

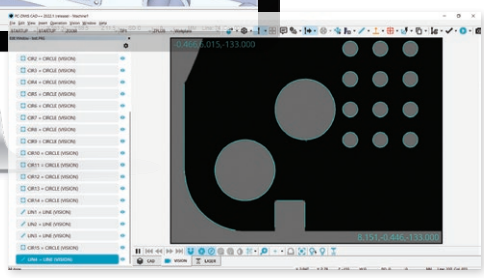
PC-DMIS automatically adapts the user interface using the environment configurator to optimise it for each device type. This streamlines productivity by presenting the user with the most logical layout for stationary CMMs, portables, or vision systems etc.



PC-DMIS for Portables



PC-DMIS for Stationary CMMs



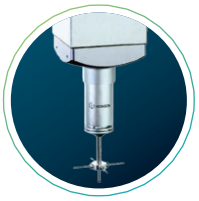
PC-DMIS for Vision Systems

Expanding application flexibility with probes and sensors

Maximising inspection efficiency often includes choosing the right combination of probes and sensors. Making the wrong choice can cause production bottlenecks, rework and scrap. The right probe or sensor can drive throughput, maintain competitiveness, and enhance profitability. PC-DMIS supports an extensive range of probing and scanning sensors for coordinate measuring machines, as well as enabling multisensor capabilities.

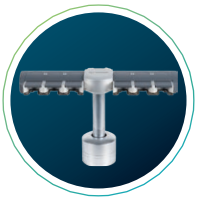
Probe heads

Touch trigger probes

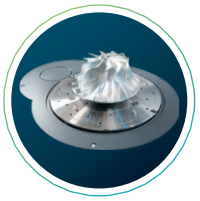


Scanning probes

Non-contact sensors



Racks



Rotary tables

Part 2. Software connectivity

As a standalone application, PC-DMIS offers a full suite of metrology tools to ensure quality managers are fully equipped to tackle inspection challenges across many industries.

PC-DMIS can also be the connecting force that can extend and enhance your manufacturing workflows via its integration with many complementary software applications in the Hexagon solution ecosystem. By seamlessly distributing quality data with other key processes in the worklow, manufacturers can improve process efficiency, reduce waste and cut cycle times while ensuring reliable product delivery.

Visual Detection

Add surface inspection to your metrology workflows

Visual Detection is an automated surface inspection application capable of detecting defects across a wide range of materials such as glass, metal, plastics, ceramics and textiles. It uses artificial intelligence to quickly learn from sample images in order to identify production defects.

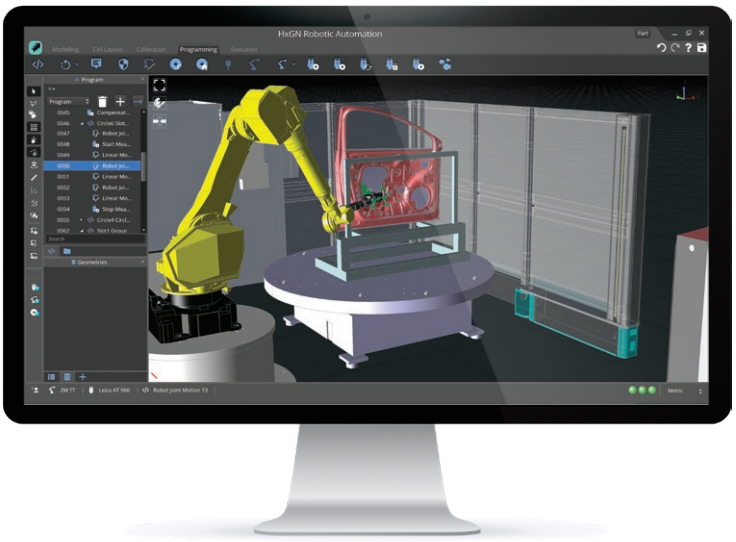
A fully automated, one-shot approach for combined measurement and defect detection is ready to be incorporated into metrology workflows with PC-DMIS Vision and Hexagon's Optiv vision CMM.

Robotic Automation

Accessible and efficient robot-based inspection

Robotic Automation is an intuitive, flexible and scalable control software designed to simplify programming for robotic inspection cells. PC-DMIS is fully integrated with Robotic Automation and can be used as the primary metrology software for inspection, analysis and reporting within automated cells to significantly increase measurement capacity, repeatability and quality.

The Robotic Automation software provides the toolset to efficiently plan, program and control robotic cells based on all major robot suppliers, as well as integrating with the wider manufacturing software ecosystem, simplifying the data acquisition process for smarter manufacturing processes.



EDGECAM & NC Server

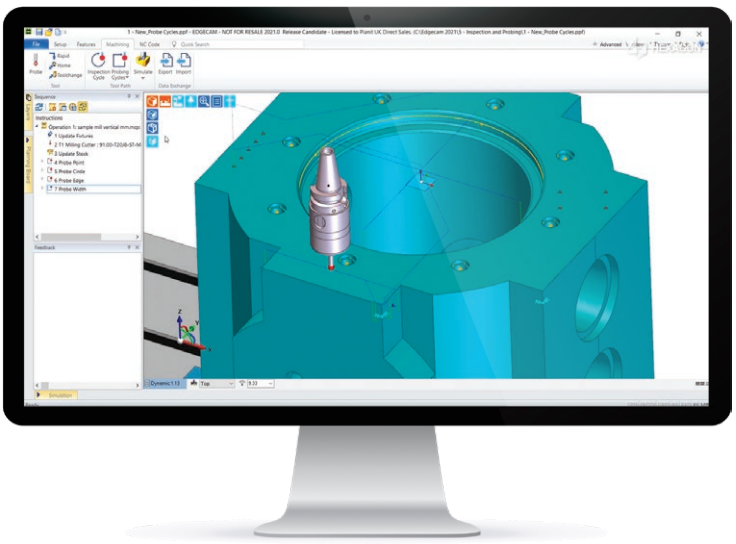
Increase productivity of Machine Tools

In many manufacturing workflows, measurements taken directly on machines tools are not easily correlated to those taken with dedicated metrology devices, due to differing measurement strategies, calculations and visualisations.

Through EDGECAM and NC Server, manufacturers can now also import PC-DMIS measurement routines for inspection directly on the machine tool. This leads to comparable analysis throughout the quality process.

PC-DMIS measurement data can be used to update machine offsets and tool offsets. Other variables can be used to further optimise operations on CNC machines.

Manufacturers can also use PC-DMIS to create optimal measurement routines for their production workflow with industry standard GD&T in a CAD enabled environment. The ability to produce results using an identical GD&T library for complex analysis on the CMM means shopfloor bottlenecks can be avoided and valuable insights into the machining process gained.



Q-DAS and eMMA

Data driven decisions, powered by AI

The Q-DAS application suite supports quality assurance, capability evaluations and parameter-based statistical process controls. It enables OEMs and their suppliers to plan, collect and analyse dimensional information from various stages of the product lifecycle.

Q-DAS monitors process stability based on measurement data provided by PC-DMIS. After analysis, Q-DAS can instruct PC-DMIS to either run a full measurement routine or a Dynamic Inspection mini-routine based on a subset of the features normally measured. Dynamic Inspection requires no human intervention and shortens measurement cycle time based on statistical analysis.

This results in increased throughput and reduced bottlenecks on the CMM for significant cost/time savings.

Company wide access to critical inspection data with eMMA

eMMA collects shop-floor data from any number of PC-DMIS powered metrology systems and aligns it with managed quality control routines. The software integrates with product data management (PDM) and product lifecycle management (PLM) software as well as other systems, making it an indispensable cross-departmental metrology data tool for manufacturers in various industry sectors including automotive stamping, car body assembly, car body interior, shipbuilding and others.

Metrology Reporting

Simple, intelligent, accessible software for accessing PC-DMIS report data.

Metrology Reporting provides real-time information and insights, enabling increased productivity based on data-driven decision making. Metrology Reporting is not only integrated with PC-DMIS, It's also part of Nexus, a collection of cloud-based applications providing

Manufacturers can work confidently knowing their data is flowing into one platform where users can access it anytime it's needed for better decision making.

Real-time parts dashboard

View the status of the latest measured part and view your PC-DMIS reports from any device.

Measurement session history

Search an archive of historical dimensional data and metrology reports.

Modern interactive report

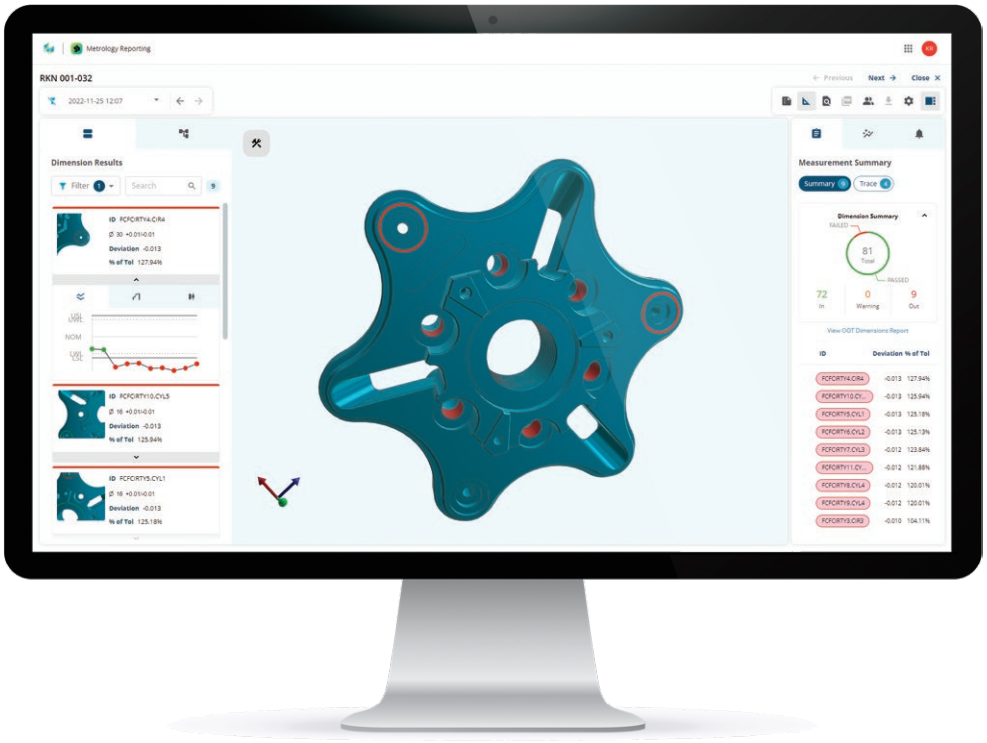
View and interact with your dimensional data in a modern and simple new report format.

Control checks and trend charts

Apply rules to keep an eye on your process and receive alerts when things get out of control.

Simplified collaboration

Share key reporting data with colleagues easily without the need to attach reports to an email.



Part 3. PC-DMIS and the digital thread

Utilise, enhance and preserve quality data for efficiency gains

From design and engineering to production, inspection and maintenance, the digital thread enables a seamless flow of information that unlocks major advantages for manufacturers - transforming how products are engineered, manufactured, and serviced.

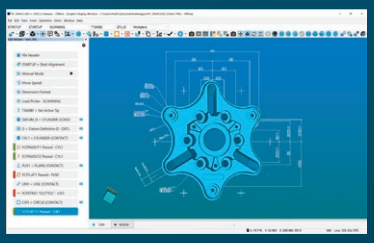
Metrology software plays a vital role in collating quality information and converting it into meaningful and actionable data. PC-DMIS supports this by utilising PMI (Product Manufacturing Information) data, that can be embedded in many CAD formats (QIF, STEP, CATIA V5, and others).

PC-DMIS programmers can use the PMI data (specifically GD&T and characteristic IDs) to significantly reduce the time it takes to create a measurement routine. The digital twin of the part carries all the necessary information for inspection, enabling the programmer to use the information to automatically generate inspection commands for the CMM (Coordinate Measurement Machine).

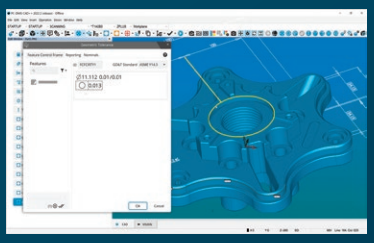
The measurements returned from the CMM are captured, compared with the nominals in the CAD model and prepared as a report by PC-DMIS. This data can then be exported to Q-DAS or Metrology Reporting; the PMI data has been enhanced with inspection information and distributed onwards along the digital thread.

With greater levels of access to real-time measurement information and insights, the digital thread enables manufacturers to increase automation and make their processes smarter than ever before.

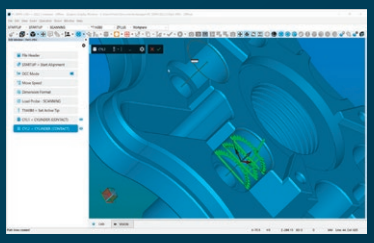
Utilizing PMI data in PC-DMIS to preserve and enhance the digital thread



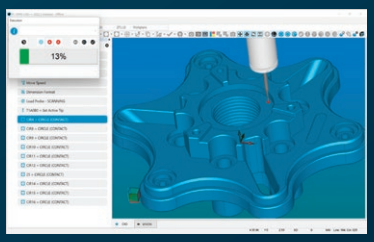
Import CAD with PMI data



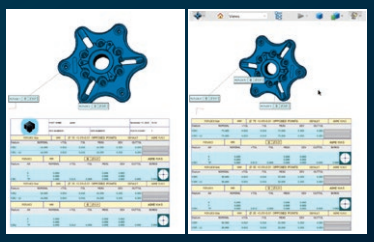
Select GD&T from CAD data validation checks performed



PC-DMIS creates the measurement objects



PC-DMIS executes routine on the CMM



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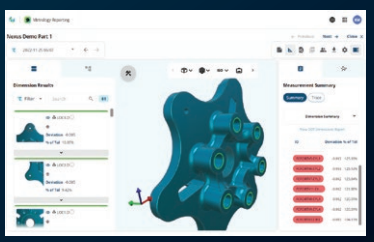
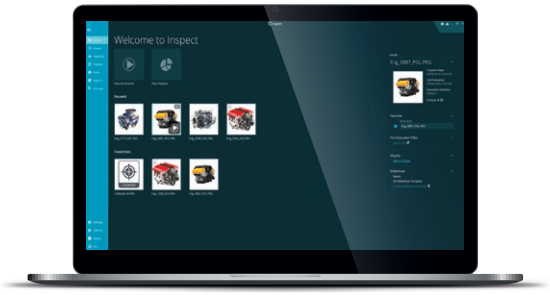


Export to Q-DAS / Metrology Reporting

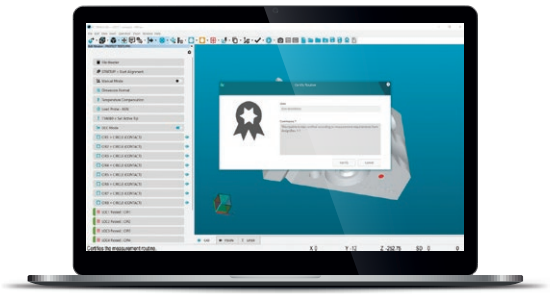
Part 4. PC-DMIS add-ons for specialised capabilities

A range of extensions can also be added to the core PC-DMIS configuration. These can either be stand-alone modules or add-ons that control specialised hardware devices such as a rotary tables or perform a particular task.



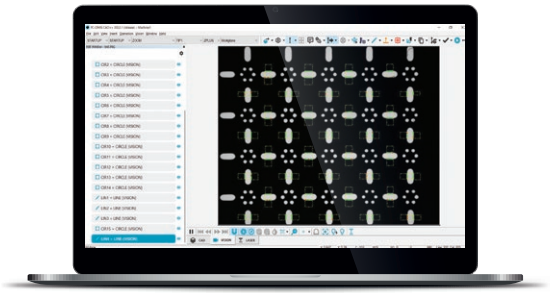
PC-DMIS Inspect

Inspect is a standalone application that helps production-level CMM operators execute PC-DMIS measurement routines using a simplified graphical interface.



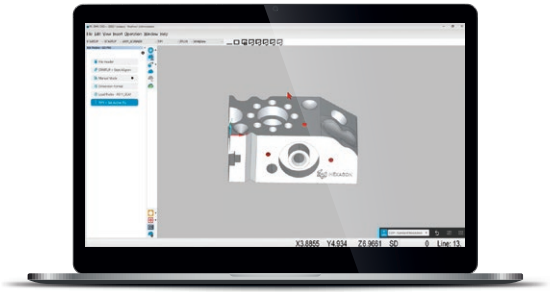
PC-DMIS Protect

Protect uses the permissions given to PC-DMIS users to control access to measurement routines and track modifications to these ‘protected’ files.



PC-DMIS Vision

A sophisticated set of tools crafted to ease the job of developing, debugging and executing measurement programs to meet the unique requirements of vision metrology.



PC-DMIS Portable

With its roots in automotive and aerospace industries It measures complex, contoured parts. PC-DMIS Portable features a quick start GUI that makes it easy for non-CMM experts to get the most from their equipment.

PC-DMIS Blade

PC-DMIS Blade was developed in partnership with various blade manufactures and is a turnkey solution for the analog scanning of blade sections.

HEXAGON

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.