

# DCS and Metrologic Collaborate at IMTS to Show Closed Loop Quality

*With a virtual tour now available, DCS and Metrologic are bringing vision into reality for all to see*

CHICAGO, ILLINOIS, UNITED STATES, October 12, 2022 /EINPresswire.com/ -- Dimensional Control Systems (DCS) and Metrologic Group collaborated at IMTS 2022 in the McCormick Center, Chicago, Illinois, to demonstrate how a closed loop quality system could look. Combining their technology into an End-to-End Quality Solution brings reality to the vision of Quality 4.0 and the Digital Twin.

At IMTS, DCS and Metrologic wanted to give visitors the chance to see what a closed-loop manufacturing process looks like in practice. This was, of course, a microcosm of what occurs at a plant or large enterprise, but seeing the different pieces and how Quality 4.0 can be leveraged to drive information downstream from design is a valuable vision that is often discussed, and rarely shown.

Here is your chance to see it -->

There is a lot to see here, so let me break it down for you.

[3DCS - Designing Robust Models and GD&T](#)

Monitor your process & interact with your production 4  
**X<sup>4</sup> Manager Suite**  
**GDM** Quality Data Management

1 Prepare your work & plan your inspection  
**3DCS**  
**Planner X<sup>4</sup>**  
**3DCS** Variation Analyst

End-to-end Process

2 Program offline & simulate your inspection  
**SilmaX<sup>4</sup>**

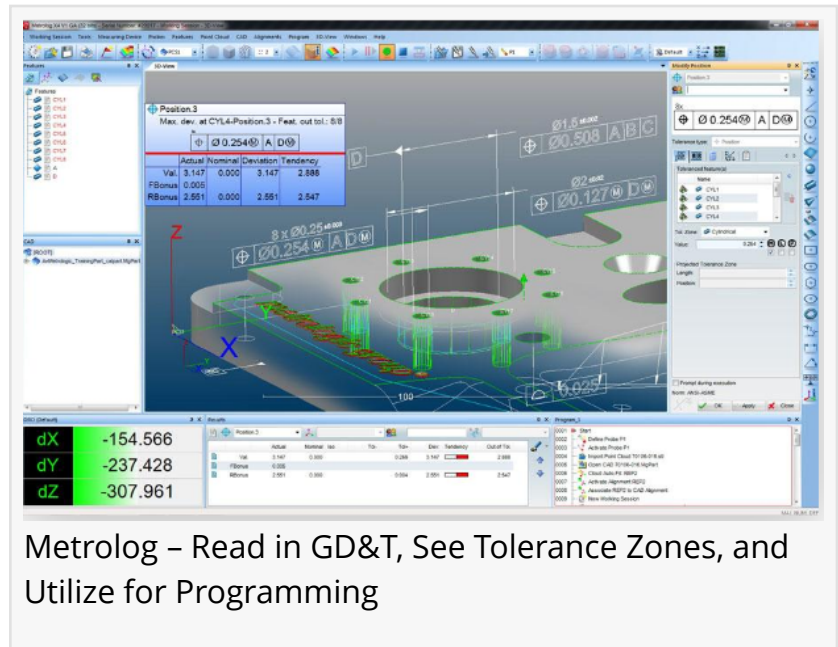
Measure Online analyze & report 3  
**MetrologX<sup>4</sup>**  
**GDM** Quality Data Management

DCS and Metrologic combine to provide a complete quality solution

3DCS Variation Analyst Software for GD&T Creation

Index	Contributor	Feature	Mean	Range	Offset	GeoFactor	6-Sigma	Contribution%
1	Metrolog_1	MPass1_1	0.230(mm)	0.122(mm)	1.00	0.40(mm)	65.8%	
2	Metrolog_1	MPass1_2	0.500(mm)	0.000(mm)	0.75	0.16(mm)	30.9%	
3	Metrolog_1	MPass1_4	0.200(mm)	0.000(mm)	0.25	0.08(mm)	7.2%	
4	Metrolog_1	MPass1_5	0.500(mm)	0.000(mm)	0.25	0.16(mm)	4.1%	
5	Metrolog_1	MPass1_3	0.500(mm)	0.000(mm)	0.25	0.16(mm)	4.1%	
6	Metrolog_1	MPass1_6	0.200(mm)	0.000(mm)	0.25	0.16(mm)	2.9%	
7	Metrolog_1	MPass1_7	0.200(mm)	0.000(mm)	1.00	0.16(mm)	2.4%	
8	Metrolog_1	MPass1_8	0.200(mm)	0.000(mm)	0.75	0.16(mm)	1.9%	
Sum of Remaining 12 Contributors = 1.72%								

During the digital design phase, 3DCS, a variation analyst tool integrated into CAD, provides the tools to test, simulate, and create robust designs. The output from these models is a set of optimized GD&T, that is, set up to reduce manufacturing costs in non-critical areas, and honed for areas found critical to quality and at risk of non-conformance. This output GD&T is the driving force of the process, associated to CAD and machine readable for consumption downstream.



Metrolog – Read in GD&T, See Tolerance Zones, and Utilize for Programming

Silma – Advanced Simulation and Digital Twin of your 3D Measurement Process

The GD&T created and optimized in 3DCS is then passed to Silma, which creates a measurement plan from the data. This plan can be programmed offline, keeping your line running while programming takes place. The program automatically interprets the GD&T, which can be virtually tested, ensuring that it is error- and collision-free once applied to the manufacturing process. In addition, its collision detection and automatic collision removal tools give you the ability to visualize, optimize and update in real your entire program probing path. Once complete, the measurement program is sent to Metrolog and your machines.

### [Metrolog – The Most Powerful Metrology Software with Any Device](#)

Whether you have a Wenzel CMM, a FARO measurement arm, a vision scanning system, Metrolog can utilize your measurement plan and make it a reality. With a plethora of tools for improved performance, Metrolog simplifies the day-to-day measurements and provides unique outputs to view the data before sending it downstream.

- Metrolog X4 has a new geometric and dimensional tolerances processing engine for handling the most complex cases in record time.
- Geometric tolerance definition facilitated.
- “Expert” system ensuring the correct evaluation methodology and results.
- Total support for the tolerance evaluation in compliance with the given standard.
- Support for ANSI and ISO standards.
- Certified and recognized solution by the PTB and NIST organizations.

The PMI and GDS&T is now a data set from the part showing it's conformance to specification. This is then repeated for 30 more parts, inline, or based on an organization's quality standards.

## i-Robot – Automated Measurement Programming for Best Results

If you're planning on using a robot to measure, the i-Robot technology is suitable for all industrial robots; it provides a production-ready metrology solution that is accurate, reliable and flexible.

i-Robot is perfectly suited for all applications requiring flexibility and productivity while providing high metrological accuracy.

- Measuring accuracy fully independent of robot's positioning precision.
- Robot movements perfectly synchronized with measurement.
- Robot trajectory entirely controlled by i-Robot part program.
- The main applications can be found in the automotive, aerospace and their suppliers for continuity across manufacturing lines and metrology control.

The outputs, much like with Metrolog, provide insight into your part's conformance to spec, allowing the data to be displayed in different formats to make it easy to interpret.

These outputs are then read in by a QMS – Quality Management System – to provide a real-time understanding of the programs and access to powerful SPC for problem prediction and root-cause analysis.

## QDM SPC Platform – Real-time Quality Monitoring, Alerts, Dashboards, and Reports

QDM reads the data in as it is being completed by your machines. Metrologic technology seamlessly feeds the system to keep it up to date with minute by minute results, providing your team real insight into your overall quality. View that data as customizable dashboards and SPC reports, or leave it out of mind until the system detects the start of a problem where it will alert all stakeholders and provide insight into the heart of the issue. This allows your team to focus on what they do best, without having to constantly sift through long Excel sheets of x, y, z coordinates and outputs. Graphical reports and screens instantly show where problems are, when they began, and where in the manufacturing process.

Should an issue that cannot be quickly resolved arise, the measurement data can be quickly sent back to the design group for simulation and analysis, testing a solution to prove out its success before moving forward.

Join DCS later this month to see how PMI is passed from Design to Metrology with DCS's webinar

[Click Here to Learn More About Setting Up a Connected System by Registering](#)

About Dimensional Control Systems, Inc

Dimensional Control Systems Inc. (DCS) based in Troy, Michigan, USA is focused on the methodology of Dimensional Engineering. DCS offers best-in-class software solutions and

services to manufacturing companies the world over. With over 50 years of Dimensional Engineering background, DCS continuously strives to exceed our customer's expectations for world-class Variation Analysis and Quality Management System (QMS) software and services.

## About Metrologic Group

Metrologic Group designs and sells 3D measurement software solutions, electronic devices and related services. The group provides innovative industrial solutions and products for measurements, where accuracy ranges from micrometers to millimeters.

Metrologic Group's solutions are designed primarily for the automotive industry, aerospace, industrial manufacturing, consumer products, power generation and the medical industries...

Founded in 1980 in France, Metrologic Group is now a worldwide company with 6 subsidiaries and 18 certified resellers, covering more than 35 different countries.

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