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John Lingenfelter
Vice President

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Make plans to join us for the 2013 Oklahoma Conference on Manufacturing. We're looking forward to another great informational and educational program. It's our state's most important gathering of manufacturing professionals, giving everyone a chance to learn from one another and set the agenda for economic growth and development. Limited exhibit spaces available.

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New Standards Will Improve Quality Control and Robotic Processes

Key Points

- NIST develops new standards to help the industry remain competitive.
- Information exchange standards will help streamline quality control processes.
- Other standards will help make robots smarter and produce more complex parts.

The National Institute of Standards and Technology (NIST) plays an important role in manufacturing by developing appropriate standards covering a wide range of areas. As manufacturing advances, NIST continues to modify and develop new standards to help the industry remain competitive. Some of NIST's recent activities follow:

Streamlining quality control

NIST researchers and industry members of the Dimensional Metrology Standards Consortium (DMSC) recently demonstrated the new Quality Information Framework (QIF). QIF is an integrated suite of XML-based information standards providing accurate and cost-effective data flow throughout the entire quality measurement process. NIST contributions to QIF included information modeling, validation testing and verification testing.



Source: www.lbl.gov

The QIF standards improve the productivity of quality assurance processes by streamlining and automating the flow of quality information across systems provided by different vendors. This interoperability of data includes planning requirements, inspection data and first article inspection reports. Otherwise, the data has to be translated from one system to the next since each vendor communicates data in its own unique language.

The quality measurement (QM) plan determines what needs to be measured and how, including features (such as hole diameters) and tolerances. After this plan is exported in QIF format, a sequenced list of features requiring measurement are generated in XML format within seconds. After the measurements are completed, a first inspection report is also exported as an XML file. Thus, QIF sends computer-aided quality data wherever it is needed and allows equipment from different vendors to talk to each other. Another vendor's results can be used to generate a QM plan and vice versa.

Benefits of QIF, which help save time and money, include:

- Reduces labor costs and quality losses from unnecessary measurement information translation
- Eliminates quality measurement translation costs; a non-value-added cost
- Increases accuracy of planning by improving information quality
- Enables seamless exchange of measurement information within minutes or seconds
- Lowers product costs and costs of component integration and maintenance
- Provides a level playing field for all vendors, enabling more innovation

The QIF models (schemas), which are the basis for the QIF family of standards, are available online at www.qifstandards.org. The [website](#) has the latest versions, which can be downloaded for free and used in software, with standard intellectual property constraints.

Advancing manufacturing

Product and manufacturing information (PMI) communicates non-geometric attributes in three-dimensional (3D), computer-aided design (CAD) and Collaborative Product Development systems. PMI may include geometric dimensions and tolerances; 3D annotation (text); dimensions and surface finish; and material specifications. The DMSC and Capvidia recently signed a memorandum of understanding to jointly develop a