The Dimensional Metrology Standards Consortium (DMSC) marketing road show converged on International Manufacturing Technology Show (IMTS) 2010 in Chicago this past September. Buoyed by many supporters, the organization showed the importance of dimensional quality standards efforts and the commitment of its members and board of directors to reach out to market, educate, even to cheerlead for quality data standards.

Data flow demonstrations, involving solutions from 3 different technology providers, were shown twice each day in the DMSC booth.

There is no doubt there is support for DMSC's efforts in current and emerging standards, as shown by contributions from:

- The Association for Manufacturing Technology (AMT), who provided the booth space, furniture, and utilities. Thank you, AMT!

- Booth demo participants Hexagon Metrology, Metrology Integrators, Mitutoyo America, and the National Institute of Standards and Technology (NIST), who developed a data flow demo and staffed the booth for 7 days of preparation and show, and 2 per day demos of the emerging Quality Information Framework (QIF).

- The DMSC board and members, who launched a canvassing effort by pounding the carpeted pavement to inform, inquire, and implore people about the QIF.

- Siemens PLM software, cooperating with NIST, persevered and completed DMIS 5.2 certification for DMIS producers.

In addition to the marketing blitz, DMSC used IMTS as an opportunity to hold the first ever meetings of the technical committee and working groups that are developing the specifications

comprising the brand new Quality Information Framework (QIF). About 15 industry technical experts volunteered to serve on the committees.

The Quality Information Framework is a central repository of data definitions that define the format of information flowing between dimensional inspection planning, programming, execution, and results reporting software solutions. Think of it like a centralized software tool crib with groupings of formats for quality data types. The key concept behind QIF is its approach: previous interface specifications defined their data elements and then sought to "harmonize" with adjacent interfaces in the data flow. QIF defines a set of data elements for all quality functionality, and will group subsets of the common set to define files flowing between major inspection processes. The result comes when software solution providers support QIF data formats in their "Export" and "Import" functions, so that data flow between multi-vendor products is seamless, effortless, and errorless. The benefits are that technology providers don't need to implement myriad translations between formats, and users gain flexibility in their choice of solutions, since they are not constrained by data compatibility. It seems to DMSC that everybody should save some time and money using QIF based data standards.

Booth staff Joe Zink (Hexagon), Bob Brown (Mitutoyo America), Fiona Zhao (NIST), Matt Hoffman and Scott Hoffman (Metrology Integrators), Bill Rippey (NIST), not shown - John Horst (NIST).

For more information on DMSC's new Quality Information Framework (QIF) standards effort, go to the DMSC website http://www.dmsc-inc.org/, or contact John Horst, john.horst@nist.gov, 301.975.3430.

FREQUENTLY ASKED QUESTIONS ABOUT QIF

What is the Quality Information Framework?
Quality Information Framework (QIF) is an open and non-proprietary standards effort begun by DMSC in September 2010. Its scope covers information conveyed between major processes for Computer Aided Quality (CAQ). The most active efforts currently focus on output of dimensional planning solutions, and the results output of inspection execution solutions (e.g., CMMs, shop floor data acquisition from calipers). Work areas also defined in QIF that will receive more focus in the near future include a programming solution and on-machine measurement.

What is the QIF approach? Why is it called a framework?
QIF precisely and compactly defines, in a standard language, the format and meaning of information in common between quality measurement planning, programming, execution, and reporting/analysis software solutions. It's as if QIF defines common information elements in a centralized software "tool crib." Previous interface specifications defined their information elements separately and then sought to "harmonize" with adjacent interface specifications in the quality measurement domain. QIF defines a set of information elements for all quality measurement functionality, and arranges subsets of the common elements to define unambiguously the information content of files flowing between major inspection processes.

How does QIF address interoperability for Quality Information?
QIF defines vendor-neutral language for quality information that can flow between multi-vendor solutions. The result comes when software solution providers support QIF in their "Export" and "Import" functions, so that information flow between multivendor products is seamless, effortless, and errorless.

What are the benefits of QIF?
One benefit is that technology providers don't need to implement myriad translations between proprietary specifications, and can concentrate on improving their products. Another is that users gain flexibility in their choice of solutions, since they will not be constrained by software incompatibility. Everybody will save time and money, and gain flexibility, using software solutions that support QIF standards.

Now that I know what QIF is, what is QMP? QMR?
Quality Measurement Plans (QMP) defines plans for measuring some aspect of a manufacturing process, commonly a discrete part. Information elements in QMP shared with QMR will be defined in QIF and referenced by QMP. QMP includes feature names, nominal dimensions, tolerances, and links to CAD data. Quality Measurement Results (QMR) defines the results of a measurement, including calculated and constructed features, tolerance analysis, raw measurements, and traceability information. As with QMP, information elements in QMR shared with QMP will be defined in QIF and simply referenced by QMR.

What is the status of the QIF specifications?
The QIF effort was approved by DMSC in August 2010 and inaugural meetings were held at the IMTS 2010 show in September 2010. The QMR effort has been proceeding for several months prior to this as an ad hoc effort. A rough draft of the QMR schema is in place. The next work item is to validate the data model by generating use cases and scenarios, doing some testing, and optimally, testing product-to-product exchanges of data. Several QMP elements have also been defined.

Who is supporting QIF by working on the technical committees?
Member companies and organizations on QIF committees include Carl Zeiss, Hexagon Metrology, Honeywell FM&T, Lockheed Martin, Mitutoyo America, Metrology Integrators, NIST, Origin International, Renishaw, Siemens PLM Software.

Contact Information
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