

FOR IMMEDIATE RELEASE

Contact: Martin Hardwick
Phone: 518-276-2848
Fax: 518-276-8471
Email: hardwick@steptools.com

DMDII team demonstrates on-machine tolerance validation using networked CMM software

DMDII – July 12th, 2017 – You already know that post processors create time delays, introduce errors and make it harder to take advantage of new machines. Now a DMDII project has shown that replacing post processors with standardized CAD/CAM files enables automated, on-machine measurement.

A question that must be asked of any CNC program is does it meet its design and manufacturing tolerances? The DMDII project 14-06-05: “Operate, Orchestrate and Originate” has shown how to perform these measurements while the part is still on the CNC machine.

New digital thread interfaces have been added to CATIA, NX and Mastercam. The new interfaces allow for tolerance models to be included in machining and measurement programs. Therefore, a touch probe on the CNC can take measurements and stream the results to a virtual CMM server using MTConnect. The CMM server can then evaluate the touch probe results, but with the points measured on a CNC. This works equally well for machine tool probing and CMM probing.

On July 12th, a test part developed by Boeing Commercial Airplane was machined at the DMDII on a Hyundai WIA XF6300 machine tool. A digital twin simulator developed by STEP Tools, Inc. was used to direct the model based machining. Translators developed by ITI were used to read and write the standardized CAD/CAM files. An MTConnect agent developed by System Insights was used to manage the measurement information. A metrology server developed by Mitutoyo America was used to evaluate the measurements and tolerances, and return a report as a QIF file.

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About Mitutoyo America

Mitutoyo Corporation is the world's largest provider of measurement and inspection solutions offering the most complete selection of machines, sensors, systems and services with a line encompassing CMM (coordinate measuring machines), vision, form and finish measuring machines, as well as precision tools and instruments, and metrology data management software. Mitutoyo's nationwide network of Metrology Centers and support operations provides application, calibration, service, repair and educational programs to ensure that our 8,500+ metrology products will deliver measurement solutions for our customers throughout their lifetime.

About ITI

International TechneGroup Incorporated was founded in 1983 by the late Dr. Jason "Jack" Lemon with a mission to help manufacturers drive innovation and time to market by applying computer-aided product development to engineering problems. Since then, the increased use of product development software and engineering systems across the enterprise created complex integration and interoperability obstacles that our clients could not overcome on their own. Today, ITI is the global leader providing reliable interoperability, validation and migration solutions for product data and related systems.

To remain competitive, manufacturers are implementing model-based enterprise, advanced simulation and PLM initiatives supported by best-in-class engineering systems. When product data interoperability issues threaten to impede the progress of these initiatives, you need a partner with proven experience. We are product data interoperability experts specializing in conversion, integration, validation and migration solutions. Our customers recognize the value in having a trusted solution partner that provides more than just software. ITI solves complex product data interoperability problems so that the world's leading manufacturers can focus on making great products.

About Systems Insights

System Insights is transforming how industrial companies operate plants and deliver products. We help our customers gain real-time visibility and control of their manufacturing operations to improve productivity, maximize asset performance, reduce resource consumption, and boost profits. System Insights' technology fuels Industry 4.0, IIoT, and Smart Factory client initiatives.

VIMANA by System Insights is the leading cloud-based and on premise predictive analytics platform for manufacturing intelligence. VIMANA securely connects to multi-vendor and legacy factory assets using MTConnect and OPC UA standards. Our software captures, enriches, and analyzes vast volumes of machine data, generating metrics and insight to help customers accelerate cycle times, minimize scrap, and reduce production costs. System Insights collaborates with a robust partner ecosystem, from machine tool and controller technology manufacturers, to factory automation systems and mission critical enterprise software providers. We are recognized as industry thought leaders and are contributing partners to the MTConnect Institute. Committed to the

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future of manufacturing, we collaborate closely with DMDII (Digital Manufacturing Design Innovation Institute), NIST (National Institute of Standards and Technology), and IIC (Industrial Internet Consortium).

About STEP Tools, Inc.

STEP Tools, Inc., founded in 1991, provides software tools to enable design and manufacturing information sharing. Its products leverage standards to enable new types of manufacturing efficiency. The ST-Developer® libraries are used for CAD translation in a large percentage of the world's workstations. Its new DT1® product enables high speed digital twin machining and measurement on the CNC.