

Software will drive differentiation amongst metrology vendors and enable increased adoption of new metrology systems in the industry.

Geometric's Expertise

Knowledge of Standards

STEP, DMIS
 Creation of features
 Export of feature comparison
 DMIS code generation

Reverse Engineering

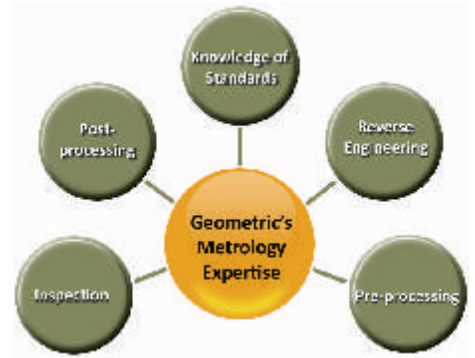
Geometry algorithms
 Point cloud triangulation
 Triangulated data management
 Surface generation

Pre-processing

Handling nominal and point cloud data
 Removing 'noise'
 Solid data verification and correction
 Cutting, extracting, and merging of input data
 STL, IGES, VDA, CATIA V4, CATIA V5, NX, PRO/E

Software Engineering for Metrology Systems

Inspection has always been a vital part of the manufacturing process to ascertain that a product conforms to the original design specifications. This has led to the need for greater precision and flexibility in the usage of measuring systems. Additionally manufacturers need to ensure that the same quality standards and processes are applied for inspecting components across globally dispersed operations. Faster time to market is another key imperative as competition has an easy access to global markets. These business requirements besides technology trends like 64 bit machines capable of handling huge data, provide both challenges and opportunities for metrology suppliers to continuously innovate in order to meet the increasing demands. Some of the biggest changes in metrology systems have been as follows:



Sensor Technologies

- Touch probes
- Optical sensors
- Laser sensors
- X-rays
- Radar

Software

- Product definition acquisition
- Inspection process definition
- Inspection process execution
- Reverse engineering
- Batch processing
- Analysis and reporting

Geometric has been developing software products for over two decades; and metrology software for over five years, and has a unique and unmatched blend of technical and domain capabilities to partner with metrology system providers to address their software engineering needs.

Challenges for Metrology Software

- Retention of manufacturing tolerances of CAD design models throughout the manufacturing process, including direct translation of CAD information onto metrology equipment.
- Complement single point data processing associated with mechanical probing, with the ability to treat huge datasets or point clouds generated by optical measurement hardware.
- Support of evolving probing technologies including Laser and X-ray.
- Offline development of inspection programs for easy customization on deployment and automation of offline batch inspection.
- Greater precision as well as inline inspection capabilities, particularly in the auto sector.
- Industry associations' requirement for interoperability of software and hardware, standard representation for measurement data including feature data for analysis.
- Intelligence to assist the metrology programmer/ operator.



Inspection

Alignment

3D surface and 2D cross sectional comparison

Feature based comparison

Multi part inspection

GD&T

Automated inspection

Offline scan automation

Post Processing

Defect coloring

Dimensioning and annotation

Creation of fly outs

Gap-flush using calipers

Reporting

Service Offerings and Solutions

Geometric's services enable metrology OEMs to introduce advanced inspection capabilities through software solutions that complement their hardware systems. Companies leverage our software engineering expertise and reusable tools and technologies to drive efficiency and accuracy across each stage of the inspection process. We offer full lifecycle services in software development, starting from the concept to providing technical support and maintenance for the software. We also deliver value on existing software applications through our re-platforming services like porting applications to 64 bit environments or the latest GUI technologies, as well as ensuring interoperability with leading CAD & quality management applications.

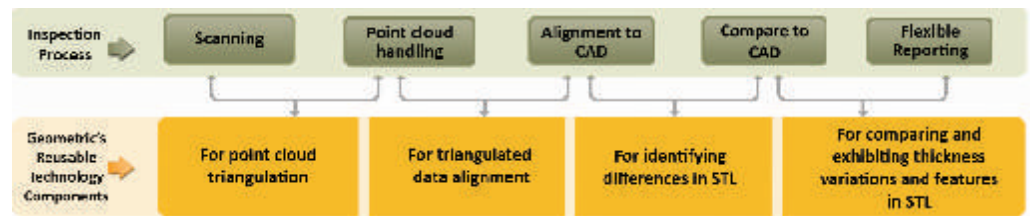
Geometric's software product development expertise is backed by our tools (GSDS) and processes (GAME) for delivery excellence, which can enable improved and consistent quality and close to 15% reduction in cost and 20% reduction in time.

Geometric can help metrology suppliers to meet increasing demands for sophistication in inspection, geometry data handling and reverse engineering.



Geometric's Technologies for the Inspection Process

Geometric has developed a set of reusable technology components that can be leveraged by metrology system vendors to meet challenges faced by metrology software today.



Contact Us

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Geometric

About Geometric

Geometric is a specialist in the domain of engineering solutions, services and technologies. Its portfolio of offerings enables companies to formulate, implement, and execute global engineering and manufacturing strategies aimed at achieving greater efficiencies in the product realization lifecycle. Headquartered in Mumbai, India, Geometric was incorporated in 1994 and is listed on the Bombay and National Stock Exchanges. The company recorded consolidated revenues of Rupees 5.98 billion (US Dollars 129.47 million) for the year ended March 2009. It employs close to 3000 people across 10 global delivery locations in the US, France, Romania, India, and China. Geometric is assessed at SEI CMMI Level 5 for its software services and ISO 9001:2000 certified for engineering operations.

For further details please visit <http://spe.geometricglobal.com>