

Innovate

Partner With Mitutoyo to Design Your Data Management System

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As manufacturing companies move toward implementing modern techniques such as Industrial Internet of Things (IIoT) and Statistical Process Control (SPC), many companies find integrating measurement data collection into their network can be difficult. Many questions arise, such as: what technology is available, which products are better for an application and which supplier can be trusted as a partner to guarantee success. As a global leader in Metrology Hardware, Software and Services, Mitutoyo is frequently called upon to assist manufacturers in implementing a Data Management System.

This article details how to select the right partner, hardware and software needed to fit unique applications. Whether it is a single inspection station or a multiple facility installation, Mitutoyo offers the products and solutions to bring it all together.

Reasons to Partner With Mitutoyo

The Mitutoyo group suggests innovation utilizing IIoT for smart manufacturing through the three “M”s:

Measure: Measure with precision

M2M: Machine-to-machine connection

Manage: Manage measurement data & measuring machines

Mitutoyo's IIoT support concept provides products and services that contribute to the improvement of the customers' production efficiency and product quality.

Issue

Some companies only produce gages, connection hardware or software. How can companies know products from three different suppliers will work together?

Solution

Mitutoyo is a global leader in and single provider of metrology hardware, software and services. With our diverse product line, we can provide the required gages, connection hardware and data collection and management software needed, all made and supported by Mitutoyo.

Issue

Implementing electronic data collection plant-wide seems costly, and low quality gages are not an option. How can a company meet its goal without exceeding budget?

Solution

Many companies already own and use high-quality Mitutoyo gages equipped with SPC output. These gages are ready for use in your new system which reduces the cost of having to purchase replacement gages.

Issue

Your company produces a diverse product line. You need a solution that is flexible enough to meet your current needs and your future needs as well.

Solution

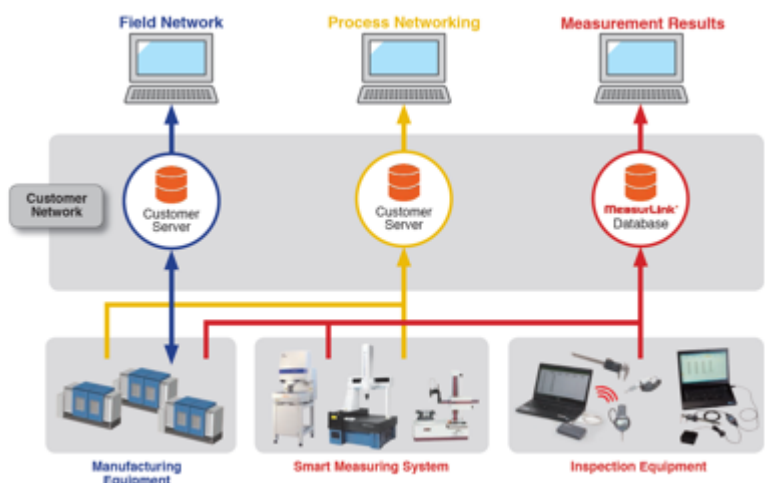
All of Mitutoyo's data management products are modular and independent from the tools, allowing for use on different gages as needed. The same data management hardware can be repurposed for future applications. Our software options are also scalable, allowing users to increase usage easily as required.

Smart Factory Concept

Below is a diagram illustrating a common initial implementation of the Smart Factory Concept. The core of the implementation is the Customer's Network. All Manufacturing equipment is directed by a system that supports techniques such as CAD/CAM program generation, pallet shuttles and robot integration, and automatic offset feedback. Process Monitoring is managed through the network resulting in visualization of uptime, machine usage and health, as well as better preventative maintenance scheduling.

Measurement Data is managed by MeasurLink®. All inspection data is collected by Real-Time software and stored on the customer's network in a MeasurLink® database. This data can be collected from hand tools connected to a PC by wired or wireless data collection systems, PC controlled systems such as Vision or Coordinate Measuring Machines, or even machine tools equipped with in-machine probing.

- **Equipment is controlled through the customer's network.**
- **Process monitoring of machine tools and Smart Measuring Systems is also supported by the customer's network.**
- **Measurement Data is collected and stored in a MeasurLink® database which is conveniently located on the same network.**



Understand the Goals of a Smart Factory

In regard to the Measurement Results, a Smart Factory concept improves work efficiency, allows the management of the measured data to be integrated within the network, and enables easy deployment. Each of these attributes is described in detail below.



A Smart Factory implementation should improve work efficiency by including electronic data collection. The goals should be to eliminate errors in data, reduce wasted time during inspection process, and increase the ease of use to the operators. All of these benefits will improve work efficiency.



Management of the measured data should be integrated into the customer's network. This requires digitalization. By having all of the data on the network, reporting and analysis is able to be performed more efficiently. This will also facilitate efforts to implement paperless initiatives.



The most important attribute of a Smart Factory implementation is that it should be easy to deploy. The implementation should be well supported by your partners, it should be affordable in initial purchase and cost of ownership, and it should be flexible enough to grow with your business.



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