

Metrology

How Software-Based Data Collection Benefits the Auto Industry

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With more valuable data accessible, automotive manufacturers can adjust processes in real-time, make more accurate decisions, and improve product quality.



Data collection and software integration makes it easy to manage, export and share important measurement data with different manufacturers and quality control specialists.

The truth is, we live in a data-driven world. And one of the biggest advantages of using software to collect data in the automotive industry is the ability to adjust the manufacturing process in real-time, using your own valuable data. This supports more accurate decision-making that ultimately improves product quality and lowers costs.

Quality is positively impacted by the timeliness of issue detection. Should a problem arise that needs to be addressed, software can instantly detect it and send alerts. This allows operators and workers to make changes on the fly, as opposed to manually recording the situation and then realizing hours or days later there was an issue that needed to be corrected. As a result, less scrap is produced in the manufacturing process, in turn bringing down the overall cost to manufacture the product.

Common alerts related to manufacturing issues include those around worn tools that require adjustments, whether that means replacing a tool or doing a machine tool offset to help keep the process stable. If there's a tooling or materials issue that causes things to go awry, automatic alerts help reduce wasted materials and shed a greater light on the state of the manufacturing process.



The difference between Bluetooth and traditional wireless data collection

A traditional U-WAVE wireless system uses a Zigbee protocol, which is a widely used global standard. It acts as more of an industrial wireless system, given the low instance of interference, noise or competition with other nearby frequencies. It also provides a stable connection over a long measuring range, with excellent battery life (it's not uncommon to get around 400,000 transmissions from a single battery.)

One requirement is that this protocol has historically been tethered to a Windows operating system. That means having to carry a Windows tablet or a Windows laptop with you to work to access the system.

Now, however, there is a Bluetooth version of the U-WAVE system that complements traditional wireless. This uses a standard Bluetooth protocol, which can communicate with both Android and iOS operating systems. It allows anyone to send data to their smartphone or tablet, making it easier to conduct measurements, especially if measuring something extremely large such as a vehicle, train car or airplane wing.

Data can be recorded and sent on the spot, improving mobility and ease of use.

How the auto industry can incorporate Bluetooth data collection

With a Bluetooth system, there are free apps available for download via the app store and Google Play, as well as for Windows, to help optimize the Bluetooth measuring experience. The mobile apps have innate data collection built into them. Making the only investment needed for an automotive company a measuring tool and Bluetooth add-on.

For the automotive market, this makes it easy to share data and measurements regardless of what platform an auto manufacturer is using. With each application, it's easy to share and export data to get it into the hands of quality engineers, manufacturing engineers, or other decision makers that need the data.

And it looks as if Bluetooth will likely become the data collection standard in the auto industry, as well as other industries. This is due to an increased demand from the operator side for the improved flexibility and freedom Bluetooth provides, whether measuring on the manufacturing floor, measuring

remade parts, or even measuring in a quality lab while not being tethered to a cable measuring device.

The days of taking measurements on a clipboard and handing them off to someone else are coming to an end.

Seamless software integration

Whether via Bluetooth, the Zigbee protocol or a wired measuring device, the good news is that quality software systems work well with all communication formats. Seamless integration provides for flexible data management and makes it easy to export data for sharing or opening in another format, such as Microsoft Excel.

This makes Bluetooth, integrated with software measuring systems, an ideal fit for data collection in the auto industry and, really, any industry manufacturing a product that needs to be measured. This includes oil and gas, where item traceability is key. It also includes aerospace and the medical industry, where keeping track of measurement data is critical for life-saving parts. As is having a detailed history and log of exact measurements for each component, Bluetooth optimizes the ability to collect such valuable data using measurement software.

Additionally, Bluetooth works seamlessly with all tools that have digital output capability, from calipers and micrometers to hardness testers and laser scanners. Self-pairing Bluetooth transmitters with an operating system is as simple as downloading an app.

In addition, a Bluetooth transmitter can be IP-rated so that it meets certain criteria ensuring no physical or liquid contaminants enter and damage the equipment, either on the transmitter side or the measuring tool side. This ruggedness means they're ideal for industrial environments.

Data will continue to drive the future of manufacturing and measurement. Embracing software-based data collection only serves to streamline operations and improve accuracy at a time when quality and productivity are both non-negotiable.

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