



 **Sciometric** Studio

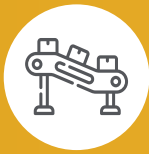
Manufacturing Analytics and
Real-Time Issue Detection


sciometric

Smart Manufacturing Starts with Data

Sciometric Studio is a suite of next generation analytics software designed for manufacturing. Process data is accessed from a Sciometric QualityWorX Enterprise or Local project, including scalar data points, digital process signatures and machine vision data and images. By applying our industry-leading analysis capabilities for digital process signatures, Sciometric Studio allows you to quickly spot anomalies caused by problematic parts. Statistical Process Control (SPC) based on Nelson rules also reveals processes that aren't performing to specification, in real-time and historically.

Data-Driven Intelligence for Manufacturing



Visualize all types of data from the production line



Overlay thousands of waveforms for analysis



Identify trends and pinpoint anomalies



Drill down to an individual part's history across multiple stations



Set optimized test limits



Evaluate the effectiveness of a test



Establish rules and receive alerts for out-of-control processes



Compare and trend information across stations to determine variations

Sciometric Studio provides a quick path from **analysis to answer**

Sciometric Studio LT

Start collecting and analyzing your data quickly.

If you have only a small number of stations, Sciometric Studio LT will let you get started without needing a database or any special infrastructure. You can drag & drop or load up to 1000 part records to be analyzed at the same time. View a part's entire history by collecting its data from multiple stations into one project.

Sciometric Studio SE

Get advanced data analysis for greater flexibility and scope.

With Sciometric Studio SE, you can pull data from a Sciometric QualityWorX database in real time, to get a complete view of your production line. Advanced Trend reports are available in Sciometric Studio SE, allowing you to select up to 10 features (process measurements) and view and compare their data. By trending the data, you can identify issues affecting quality and determine ways to optimize a station's productivity.

For more information on how to choose between Sciometric Studio LT and Sciometric Studio SE, visit www.sciometric.com/data-intelligence/sciometric-studio-analytics.



Sciometric Studio for Sciometric EDGE.

Sciometric EDGE is a compact, universal Industry 4.0 platform that helps you monitor and control your industrial processes. You use Sciometric Studio software to discover modules on your network, create applications for process monitoring, review data collected from those processes, and optimize your application deployment.

For more information on Sciometric EDGE, visit www.sciometric.com/edge.

Designed for Useability

Easy-to-follow tree-based navigation structure for quick overview or drill-down

Ability to view multiple charts at the same time

Intuitive, contemporary ribbon-based interface

Export capability to CSV format

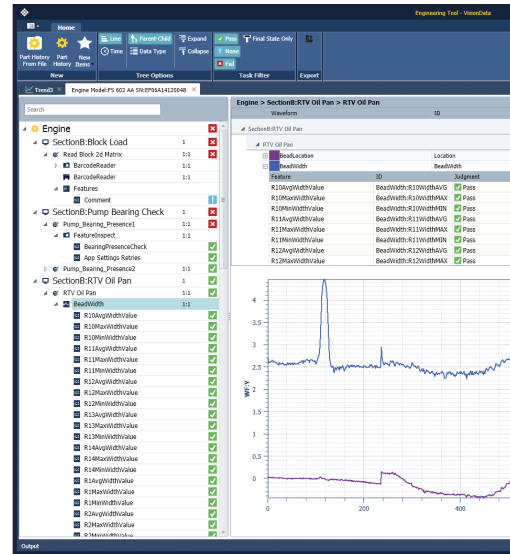
Understand Your Data from the Whole Production Line Down to a Single Part

Part History: Analyze a Single Serial Number

When you're looking for root cause of a failure, Part History makes it jump out. Part History presents detailed information on pass/fail results, waveform or image characteristics and feature checks on a single part. Every second of every step in the process is tracked.

You can see the progress of a part through various stations and tasks and compare its waveforms, images or features at any stage. Then, you can examine reruns of a task to see when the problem is and isn't present.

The single Part History helps you get to know the complete story of a part as it moved through production, making differences quick and easy to identify. The ability to examine your production line at the level of a single serial number enables you to get a "batch of one" by providing insight into each part you produce.

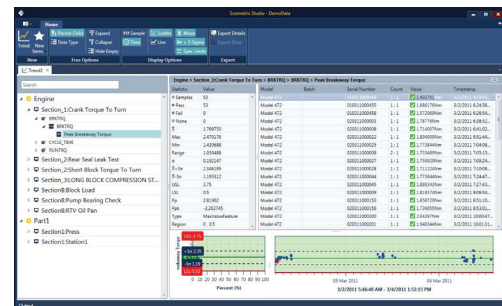


Single Part History drill down

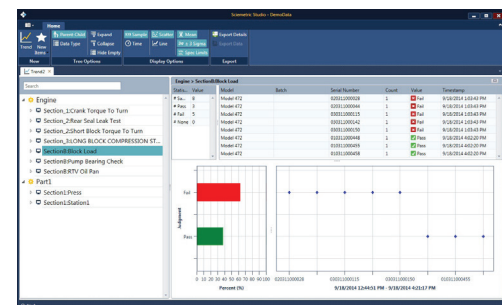
Trend: Spot Variations Over Tests or Parts

Manufacturing consistently high-quality parts depends on consistent processes. With the Trend capability, you can overlay multiple waveforms or data to spot unwanted variations at a test station or with a part. Then, drill down to the single part history to see where the problem exists, at the level of a serial number.

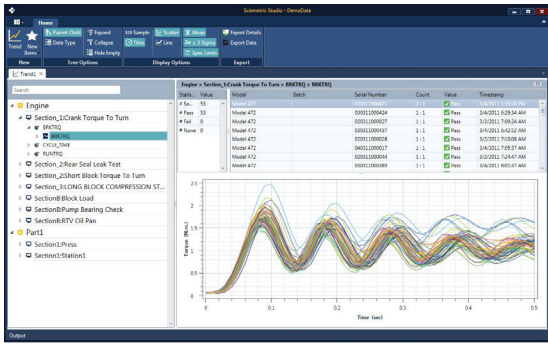
Trend reports help you identify issues affecting quality and determine ways to optimize a station's productivity. Several types of trend views are available (statistics, pareto, waveform, image filmstrip, histogram) so you can isolate and see the data from all angles. The Advanced Trend report allows you to select up to 10 features and view them at the same time so you can check for correlations across different process measurements.



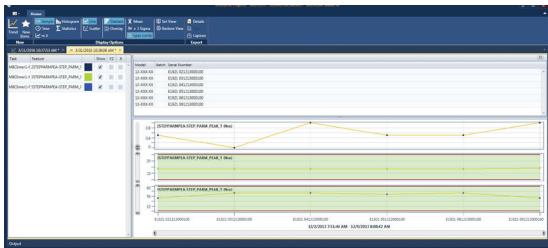
Statistics view



Pareto trend



Waveform overlay trend



Advanced Trend

Real-time SPC: Know When Your Process is Out-of-Control

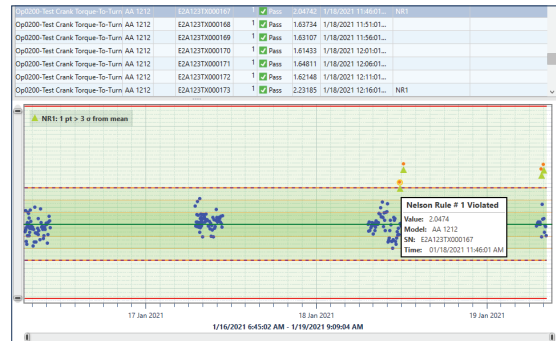
Sciemetric Studio applies Nelson rules for Statistical Process Control (SPC), in real-time or historically. You can enable rules locally, then create alerts for continuous real-time data monitoring or scan data collected in a QualityWorX database for potential rule breaches.

Sciemetric Studio's real-time alerting engine provides live out-of-control data detection. When an event (rule breach) is detected, alerts can be logged and sent by email for quick action.

Access-controlled audit logging enables full traceability of any SPC configuration changes and rule breaches.

Trend waveforms or features:

- Statistics: part counts, pass/fail count, statistics for features
- List of items in the data selection provided
- Histogram of values
- Trend by serial number or time stamp
- Station/Task: Pareto or trend of judgment
- Overlay waveforms
- Filmstrip view of images trend
- Histogram and trend of feature values and ranges
- SPC trend



Line trend with matching data point highlight

SPC reports:

- X-Bar-R
- X-Bar-S
- I-MR-R, which can plot by batch/batch control
- I-MR-S

The X-Bar-S and I-MR-S reports can be dynamic based on custom grouping and feature process capability statistics (Cp, Cpk).

Industry 4.0 Analytics for Smart Manufacturing

Tools like Sciometric Studio can help you harness the power of the data generated on your production line to get alerted to issues in real time and visualize them so you can rectify the problem. The sooner you pinpoint the anomaly, the less impact it will have.

Sciometric Studio includes several important capabilities that will help you realize the promise of Industry 4.0 on your production line:

- ✓ **Visualize all types of data (scalar, waveforms, images) so no information is left behind.**
- ✓ **Establish test limits or apply Nelson rules (for SPC)**
- ✓ **Receive real-time alerts to get notified of SPC rule breach events**
- ✓ **Log out-of-control events for full traceability of SPC configuration changes and rule breaches**
- ✓ **Examine data multiple ways to look for trends that indicate issues with processes or parts**
- ✓ **Trace the root cause of a problem by drilling down to an individual part's history at the level of a serial number**

Process efficiency and part quality don't need to be at odds. With Sciometric Studio, you can detect problems on your production line as they occur and pinpoint the source with the certainty that only data can provide.

Industry 4.0 is about data democratization – putting useful data in the hands of each person who can use it to make a real difference in quality and productivity.



Technical Requirements

MINIMUM SYSTEM REQUIREMENTS

- 1 GHz 64-bit processor
- 8 GB RAM
- 3 GB hard disk
- DirectX 10 graphics device with WDDM 1.0 driver

OPERATING SYSTEM

- Windows 10 64-bit (.NET 4.5)

FILE TYPES SUPPORTED

- Sciometric Single Part History (SPH) files*

ADDITIONAL REQUIREMENTS FOR SCIOMETRIC STUDIO SE

- Sciometric Studio SE can only connect to a QWX 3.41 database or higher
- Enterprise Management Services must be installed (see QualityWorX datasheet for details)

* Data from non-Sciometric systems are converted to SPH when stored in QualityWorX.

Learn more about how to get out
ahead of production line issues with
Sciometric Studio now at
www.sciometric.com/Studio

About Sciometric

Since 1981, Sciometric's process monitoring and quality management systems and software have enabled some of the world's leading industrial companies to gain visibility into and control over their processes. Process Signature Verification (PSV) technology provides the most accurate determination of process health and part quality while collecting all data. Our customers use Sciometric's analytic tools to transform the data into actionable information to reduce costs, manage quality, increase efficiency, and maximize yield while providing proof of process compliance and complete traceability. Visit sciometric.com for more information.

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FEBRUARY 2021 - PRINTED IN CANADA