

A black and white photograph of a man in profile, wearing glasses and a plaid shirt, looking at industrial machinery. The background is slightly blurred, showing various mechanical components and pipes. The overall tone is professional and industrial.

**QESTIT**  
SYSTEMS

**QRM**

**QUALITY RESULT MANAGEMENT**

Improved Yield, Quality and Decision Making

# What is QRM?

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QRM is a web based result management system that stores and analyzes test results. It is a flexible system using web servers, databases and ATML XML data which can be setup on a single computer, servers or cloud solutions. ATML (Automated Test Markup Language) is an XML standard to exchange test data.

- > **Powerful web interface** - easy access to view and analyze your results in your browser
- > **Ability to connect production sites** - post ATML XML reports from all over the world using HTTP
- > **Instant production feedback** - watch test results as they are produced
- > **Easy exporting of data** - export your test data directly to Excel or Minitab as a CSV file
- > **Built-in SPC and MSA** - perform SPC and MSA analysis directly in the web interface
- > **TestStand result processor** - connect your TestStand system directly to QRM

## QRM Consists of three major parts:



### **DATABASE**

The test data repository in SQL Server.



### **STORAGE SYSTEM**

Storing and synchronizing test data over the internet using ATML and web services to the database in a robust and secure way.



### **PRESENTATION AND ANALYSIS SYSTEM**

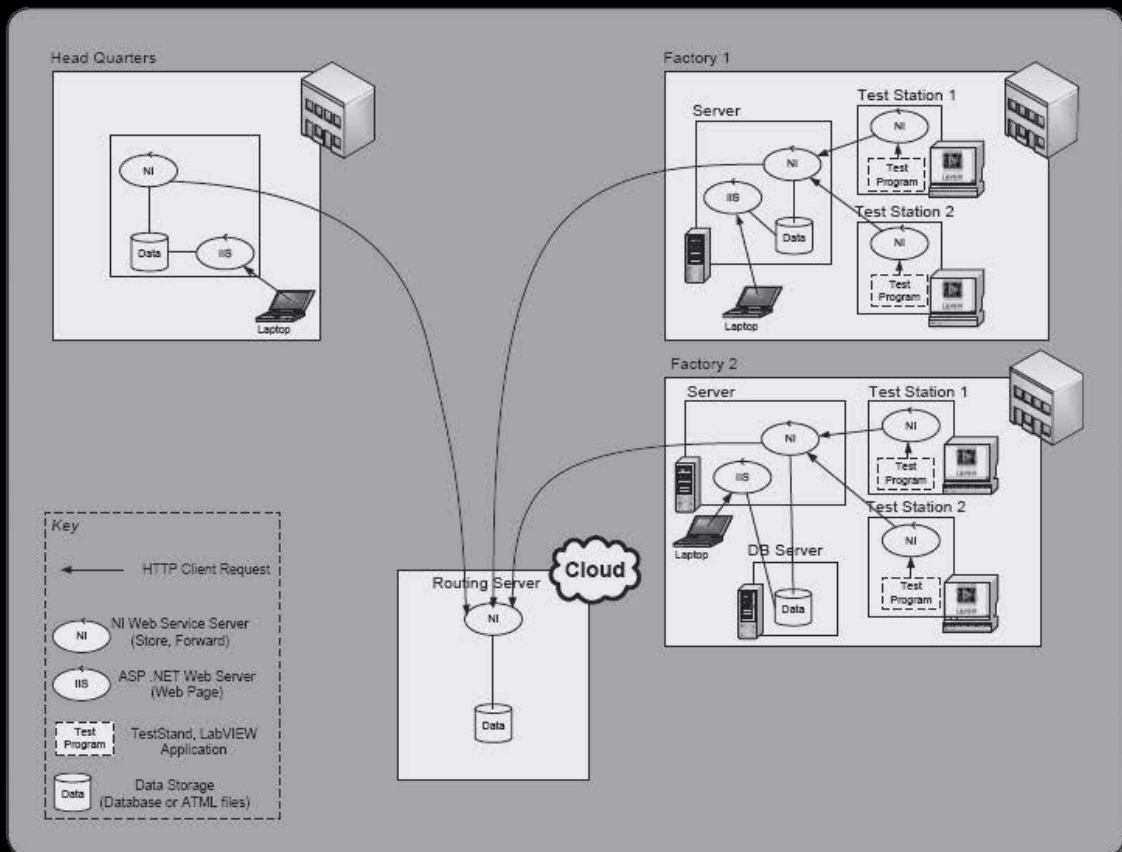
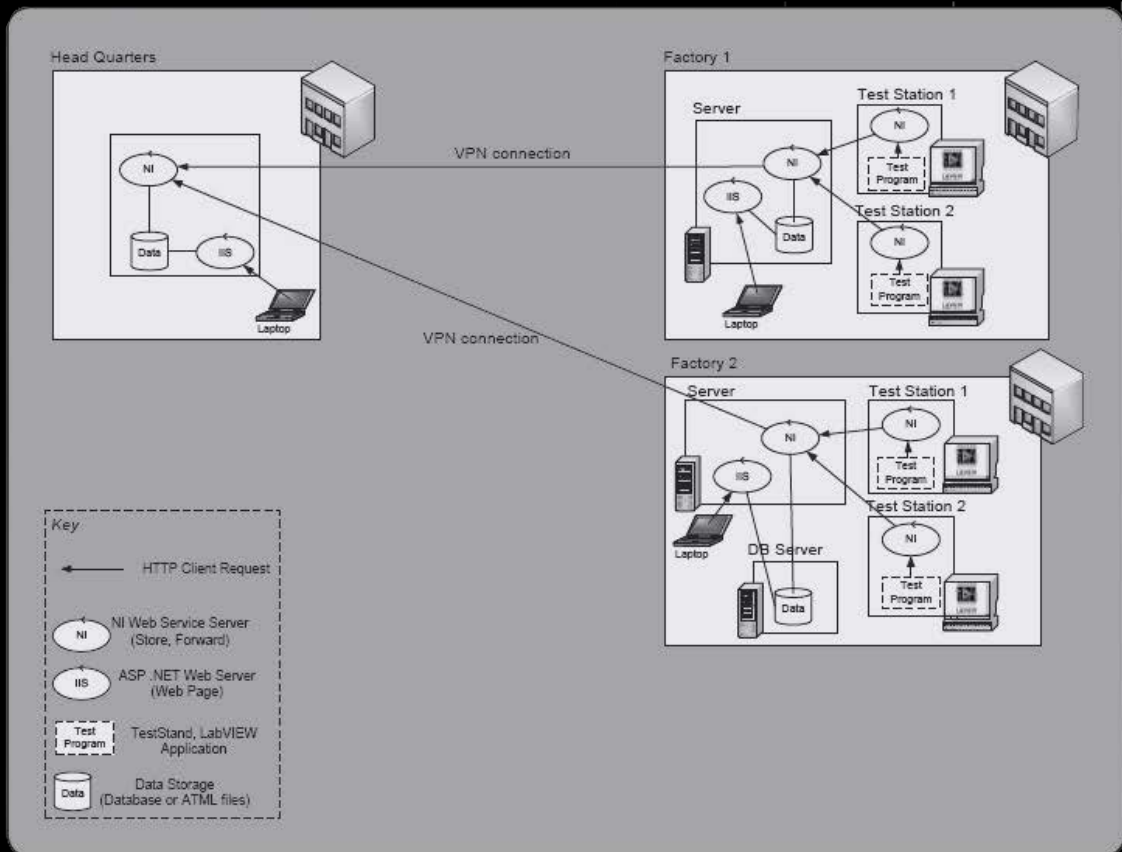
Presentation, report and statistical analysis of test data through a web application.

Each test program acts as a QRM storage client that post test results as ATML XML reports. The reports are handled by a HTTP web service that will forward data over a secured network connection. The web service can also store the test result to the QRM result database.

The service is very robust and if the network is temporarily unavailable, the service will store the reports locally and retry until it succeeds.

Multiple sites can be connected by using the distributed architecture of QRM. The QRM Web application is used to view and analyze test results as products are being produced.





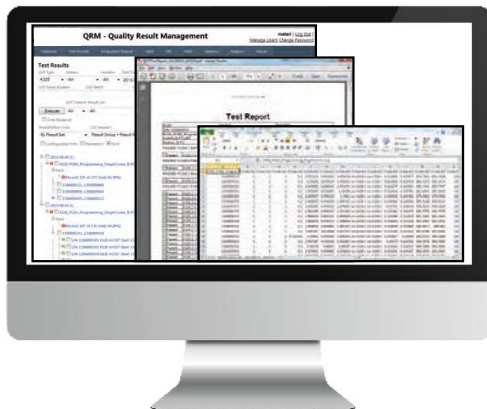
# The Tool

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## OVERVIEW

Get a quick overview of your global production volumes, yield and yield over time.



## TEST REPORT

View, create and download reports.



## PRODUCTION STATISTICS

View produced units, yield, and most common faults over time based on product, variants, stations or locations. Export PDF reports or export data for further analysis in for example Excel.



## YIELD ANALYSIS

Break down problems with low yield into specific measurements and find the main reasons for low yield in an instant.

# Web interfaces

## STATISTICAL PROCESS CONTROL

Perform statistical process control (SPC) analysis to verify that your measurement-process is stable and under control. Use common SPC methods and diagrams in order to fine tune your requirements.



## MEASUREMENT SYSTEM ANALYSIS

Perform a Measurement System Analysis (MSA) to verify that your measurement system is not the source of variations in your process.

Automatically perform Gage Type I or Gage R&R analysis.



## STATION UTILIZATION

Analyze your test stations capacity and utilization by type of product tested, test times and utilization by day.



## REPAIRS

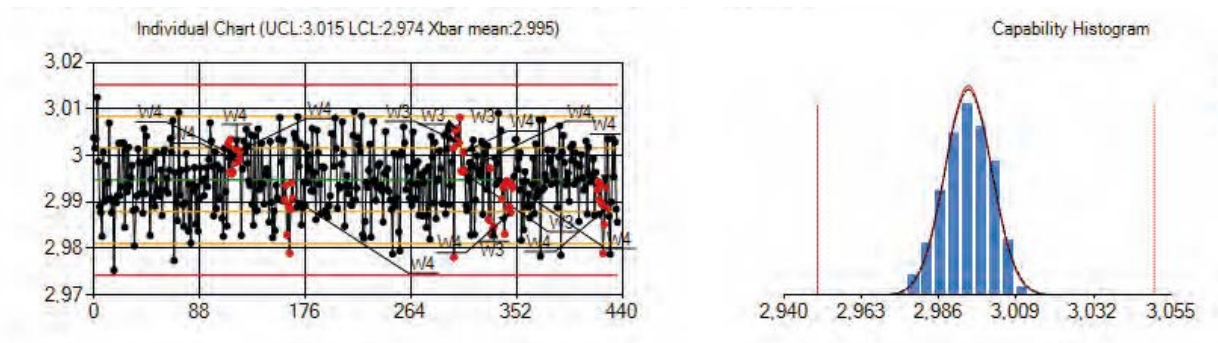
Manage repairs and log repair actions. The action will be stored with the products report for traceability.



# SPC & MSA

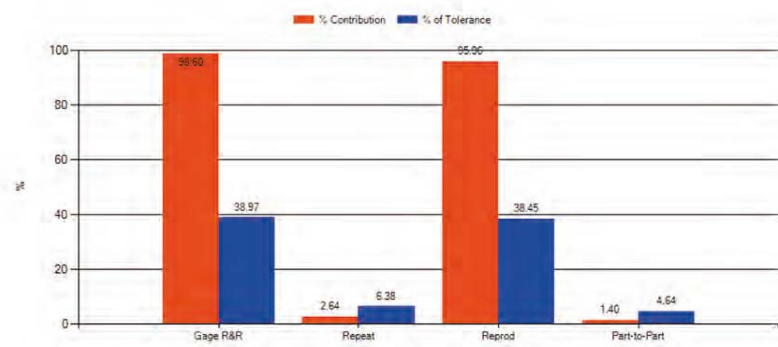
## SPC - Statistic Process Control

Six Sigma Quality  
Natural variations  
Monitor and control - Cp, Cpk  
Predict the future



## MSA - Measurement System Analysis

Qualify a measurement system for use - AIAG/ISO16049  
Accuracy (Gage Study Type 1) - Bias and Stability  
Precision (Gage R&R) - Repeatability and Reproducibility

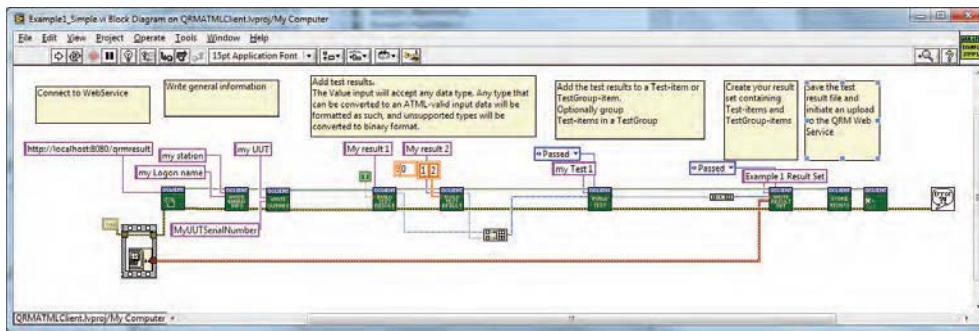




# The Architecture

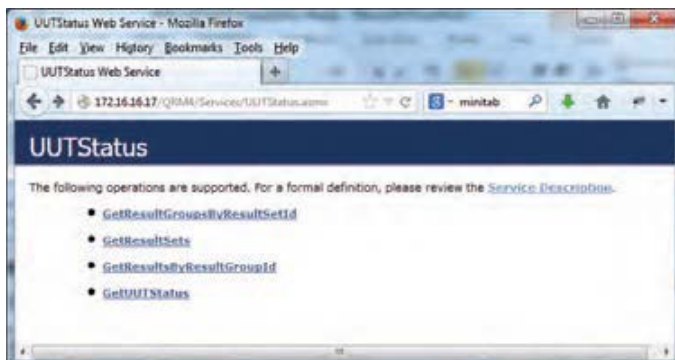
## QRM Storage Client

LabVIEW QRM driver for easy integration  
AddQ QAL Exporter  
NI Teststand QRM Client



## QRM Query Services

SOAP Services - UUT Status of Previous Testing, PDF Report Generation  
Add Custom UUT - Tracking info, Searchable within QRM  
Integrate QRM from any environment - LabVIEW, .NET, Java, C/C ++



# QRM Benefits

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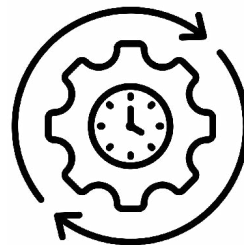


## YOU OWN THE RESULTS AND THE SYSTEM

- > Easy to move between suppliers
- > See same information as the suppliers

## FAST PRODUCTION FEEDBACK

- > See results and yield within minutes



## EASY ACCESS

- > Web based
- > Reports
- > Statistics

# Do you want to know more?

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## ABOUT QESTIT SYSTEMS

We are part of the QESTIT Group – Europe's leading QA experts in testing and quality assurance. With over 750 consultants spread across 7 countries, the group offers a wide range of QA services to companies from various industries.

QESTIT Systems specializes in quality assurance for both hardware and software, supporting clients from requirements specification to delivery. We help create a world that works by ensuring the right quality for our clients' products, software, and testing systems.



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