HEXAGON

Brochure

Plan, measure, optimise
Quality as a success factor

Q-DAS solutions allows companies from a wide range of industries to increase their product and process quality. Get a better picture of our solutions and your possible fields of application.

What is Statistical Process Control?

SPC allows operators, metrology technicians and engineers to control a process or production method and to act actively for quality improvements.

Challenges in production

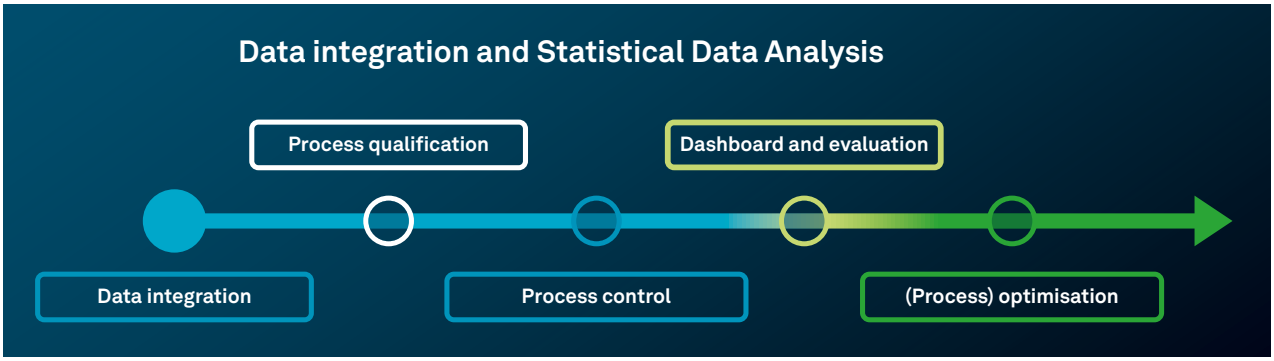
There are many challenges in daily production workflows. Particularly with regard to quality, the requirements are extremely high and often governed by regulations. The need to minimize reject costs and avoid product recalls is driving the pressure on quality even further. To achieve the quality goals, it is essential to record and process precise production data.

Problem

- Limited time to get visibility into the process performance
- Spending a lot of time to collect data and generate reports
- The time to communicate the relevant information from shop floor up to engineering
- Stay and keep compliant with Industry regulations
- Ability to accurately predict the production process (to make the right decisions)

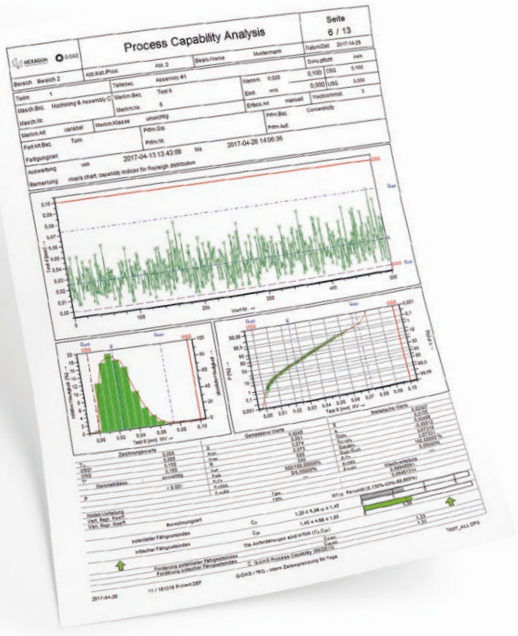
Improve your manufacturing effectiveness

SPC and Quality Analytics accompany you through the entire production cycle and provide you with the relevant information at the right time to make targeted optimisation decisions.



Benefits

- Reduce scrap rate
- Detect problems before they occur
- React immediately
- Reduce human error
- Improve Quality and Productivity
- Reduce downtime and costs
- Fulfill all Compliance requirements (ISO, VDA5, AIAG,...)
- Increase customer satisfaction



Data agnostic

Q-DAS process quality-relevant data from different sources and formats. The system automatically converts them into the correct format so that they can be visualized immediately and you don‘t lose time due to poor structure.

Who is the application for?

Operators

- need to know when to collect data
- Monitors Automatic Data collection from manufacturing floor
- enables manual data entry as needed

Supervisors

- ensures all stations are collecting data as required
- Monitors Automatic Data collection from a centralized location

(Quality/Production) Engineers

- needs to monitor overall performance. They evaluate trends using dashboards and capability analysis
- must be alerted to issues immediately
- must determine the source of any problems and get to root cause quickly

Start your SPC journey today!

With our turnkey solution packages, you can immediately start to improve your process and make your optimisation decisions. The Q-DAS solution packages are tailored to your specific requirements and can be supplemented or adapted at any time. Our training courses are also tailored to the particular solution-package.

All solutions build on each other. The Anaysis solution forms the basis for reliable results. The SPC solution clarifies why some processes cause problems. Thanks to the improved data quality, causes can be identified and feedback can be provided directly to production.
The Fully Integrated Solution rounds off the knowledge gained through automation, so that no weak point remains undetected and early intervention in the value chain is possible.

Analysis Solution

Q-DAS Analysis Solution creates trust and transparency in industrial production. It delivers the pre-requisites for monitoring real-world production processes in the best possible way

Persona
Quality Manager, Quality Engineer, Measurement equipment responsibles.

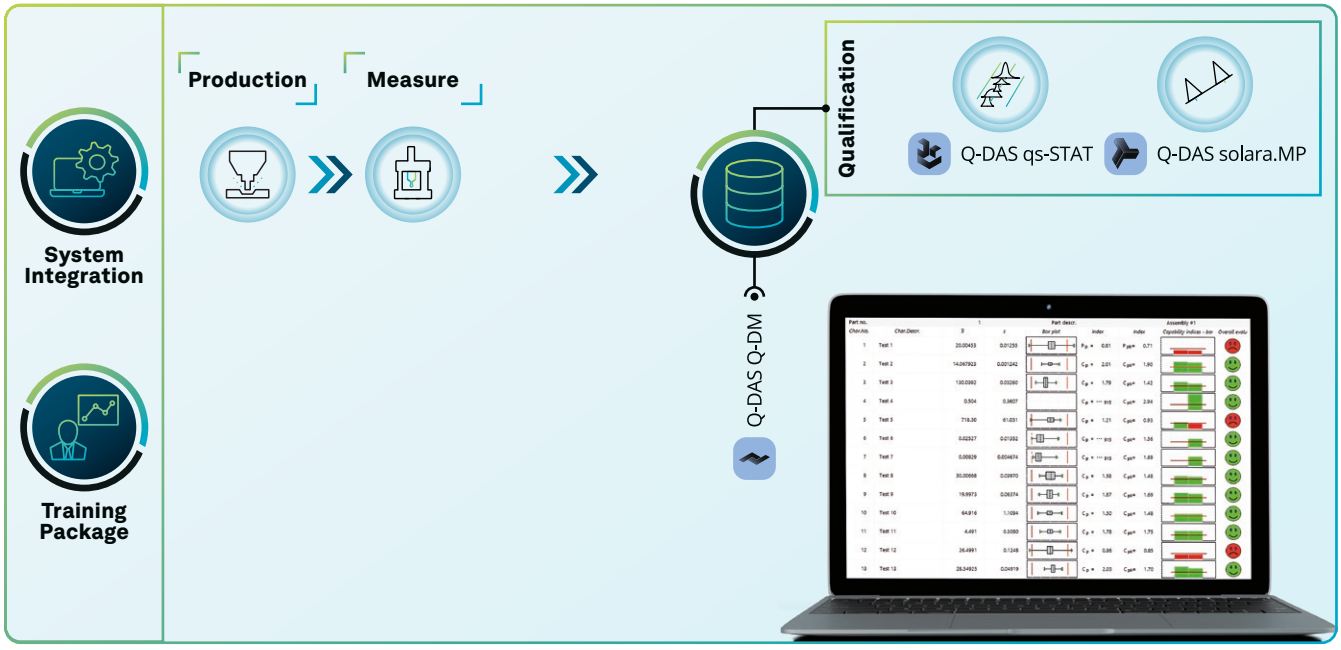
Problem
Customers or auditors demand from Quality Managers evaluation results that conform to standards and company guidelines.

Solution
Integrated strategies automatically calculate the compliant results. The results can be easily generated using the existing measured values and presented in clear reports.

Value
Reliable results without discussion about the correct procedure. Knowledge about MSA, machine acceptance and process capability. Be compliant.

Q-DAS Analysis Solution provides the basis for quality monitoring in industrial production. The goal of this solution is to provide documents that confirm that products have been manufactured at the required level of quality.

With the Analysis Solution, users receive the results of test process investigations, machine acceptance and measurement system analyses in report form.



Process Control Solution (SPC solution)

With Q-DAS Process Control Solution, users can increase quality, reduce costs and bring transparency to their processes

Persona

Operators and Process Engineers.

Problem

Operators and Process Engineers struggle to detect in real-time when a process is becoming unstable or experiencing quality issues, hampering their ability to promptly take corrective actions. This challenge is compounded by the diverse types of gages used, leading to inefficiencies in identifying process deviations and potential compromises in product quality.

Solution

Q-DAS O-QIS (Operator Quality Information System) a gage and software agnostic real-time monitoring solution capable of collecting data from all types of gages. For automated gages, enable instant detection of deviations and alerts to operators and engineers. For manual gages, provide wired connections to central monitoring, guiding operators through measurement sequences and alerting to statistical alarms.

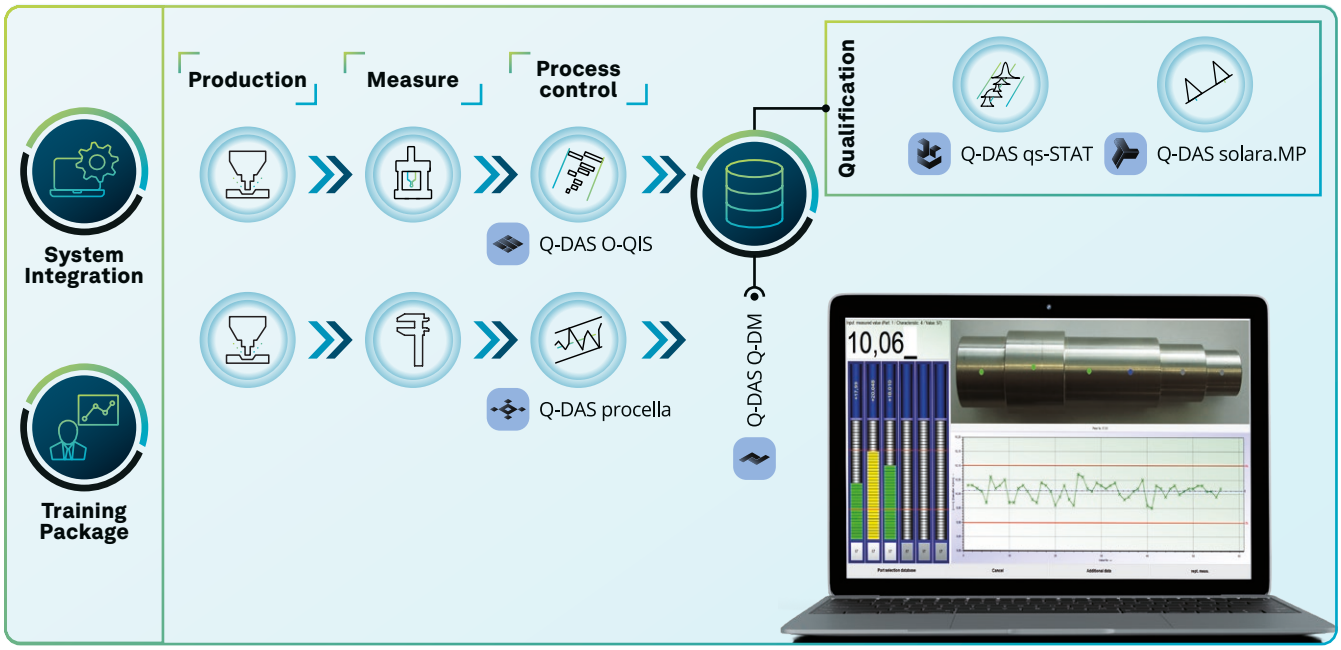
Value

Enhanced Quality Control
Prompt detection of process deviations ensures the manufacturing process remains within control limits.

Gage and software agnostic
Flexible, easy to use for the operator; guides the operator through the measurement sequenz (to minimize human error); Flexible in the wide range with statistical alarms, charts, data quality; ensuring result supervision.

Reduced Downtime
Timely response to quality issues minimizes production disruptions and downtime.

Optimized Processes
Access to real-time quality data facilitates process improvements, leading to increased yield and productivity, and improved product quality standards.



Fully Integrated Solution

With Q-DAS Fully Integrated Solutions, users always have their finger on the pulse of quality because they always know about any kind of deviation

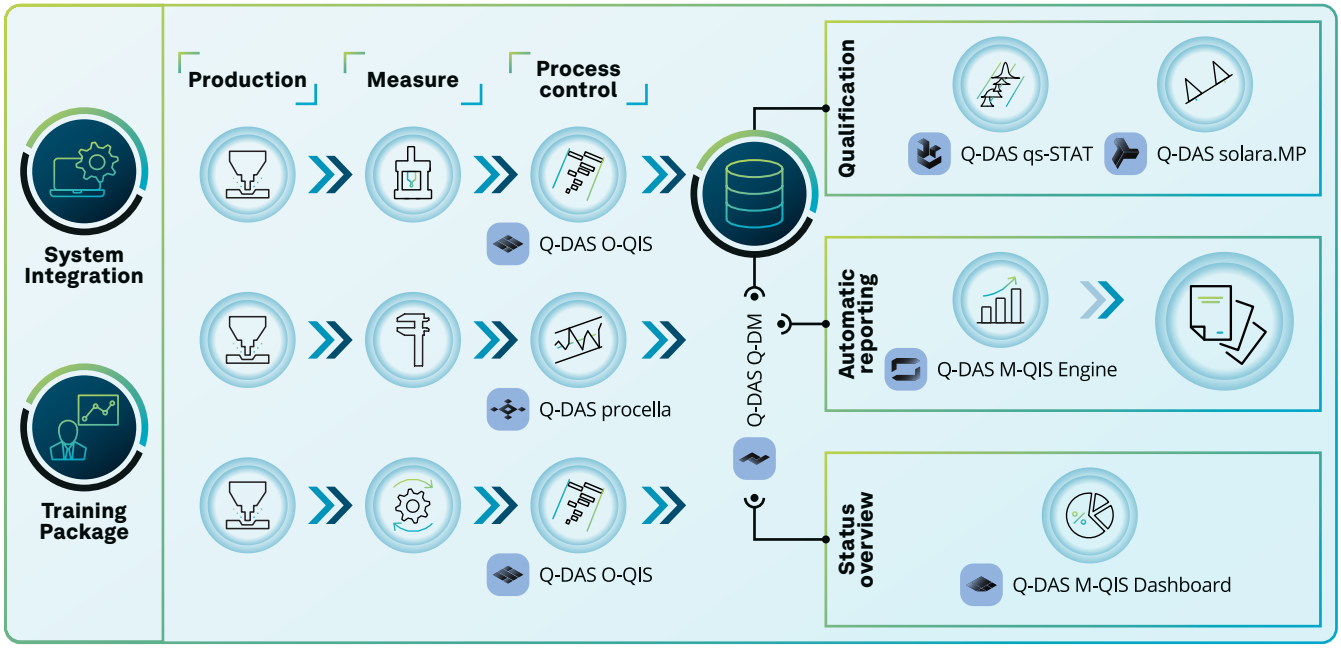
Personas
Production Line Manager, Quality Manager, Quality Engineer, Management, Operations Manager, Process Engineer.

Problem
Issues in production processes are not recognised in good time. The consequences are higher scrap rates and rework.

Solution
Prompt information to the right employees in order to be able to react quickly to problems. By using reports send by E-Mail no knowledge of statistics or handling of software is required.

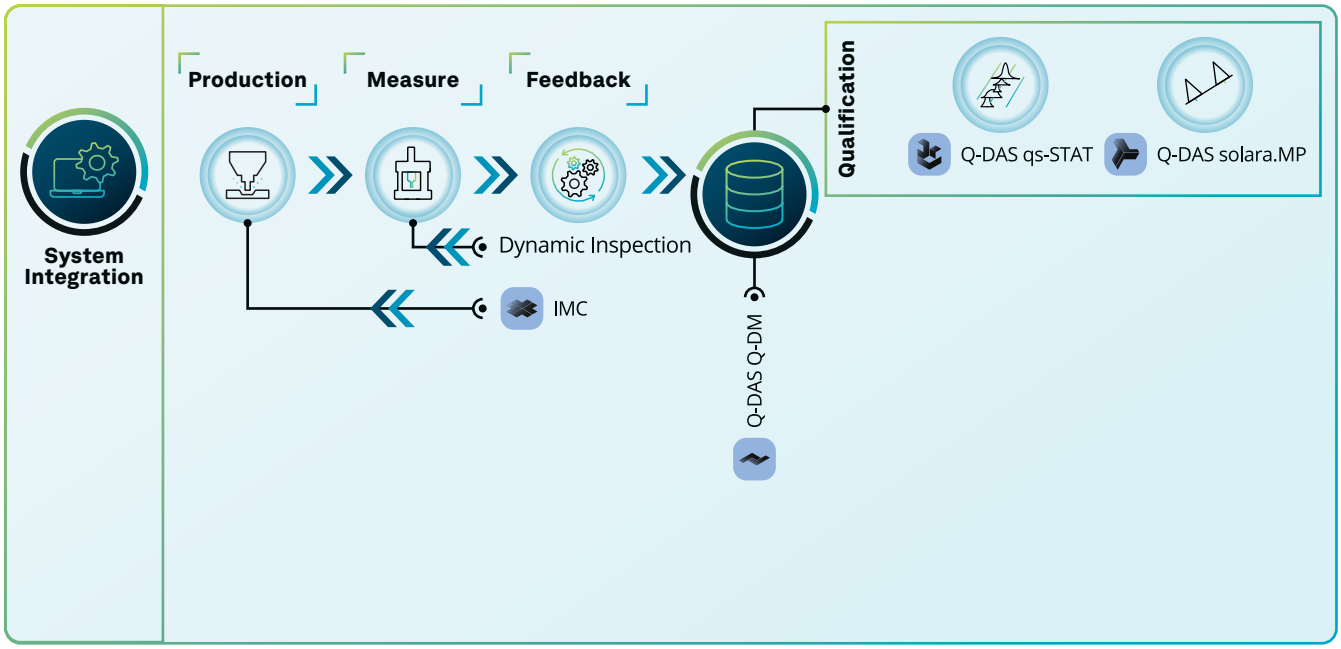
Value
Reduced quality costs and scrap rates. Promt information to the right people.

The goal of this solution is to continuously and automatically monitor production processes and, in the event of deviations, to automatically generate and send reports.



Feedback Solution

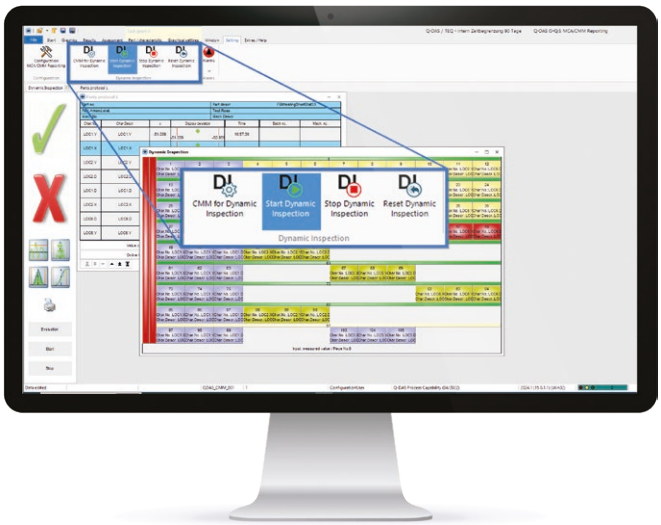
The Feedback Solution enables the user to send automated tool correction values to the machine tool on the basis of measured values analysed with the integrated Q-DAS Statistics software. This correlation between tool data and measured values is an innovative basis for stable production processes.



Q-DAS offers two types of feedback solutions

The Machine Tool Feedback Solution combines tool information from the machine tool and the results from the product measurements. Communication with the controller of the machine tool facilitates the download of the tool lists (supported controllers: Fanuc, Siemens and Heidenhain) and the feedback to the machine tool for correction suggestions for the tools. The measurement data from the product measurement must also be integrated. All common measuring machines can be connected here (KMG`s, SPC systems, manual measuring stations, measurements on the machine tool, ...).

The Dynamic Inspection is a solution that helps customers reduce CMM inspection time in relation to the stability of their manufacturing process. Enabling customers to focus on the critical characteristics/dimensions, with a 100% inspection while measuring the other features in a sequential and dynamic way, this would allow customers to reduce their inspection cycle time on the CMM drastically. In case of quality alarm, the incriminated characteristic or feature would be measured until reaches a phase of stability.



Problem

The Production Manager requires a solution to automatically feed back tool compensations to machine tools, ensuring process stability and reducing quality scrap rates. Concurrently, the Quality Manager aims to reduce measurement cycle time due to prolonged cycles compared to manufacturing processes, optimizing resource allocation. This inefficiency leads to resource waste and increased quality costs.

Solution

IMC (Intelligent Machine Control) an automated feedback solution that seamlessly adjusts tool compensations in real-time based on quality data, enhancing process stability and minimizing scrap rates while optimizing resource allocation for machine tools. Additionally, implement Dynamic Inspection that intelligently assesses statistical alarms and optimizes resource allocation. By measuring only during significant deviations and streamlining stable processes, this solution reduces measurement cycle time without compromising quality control

Value

Enhanced Process Stability
Automatic tool compensation feedback ensures consistent quality and reduces the likelihood of process deviations.

Reduced Scrap Rates
By addressing tool discrepancies promptly, the solution minimizes defects and waste, leading to lower scrap rates.

Optimized Resource Allocation
The solution optimizes resource allocation for both machine tool feedback and measurement processes, maximizing efficiency and reducing costs.

Improved Efficiency
Streamlining measurement processes enhances overall operational efficiency, enabling faster response to quality issues and greater productivity.

Predictive Analytics Solution

Integrated AI for advanced analysis and forecasting. Reduced quality issues, better resource allocation. Get alerts about predicted specification violations.

Problem

Quality/Process Engineers and Operators seek a solution to anticipate quality specification violations before they occur, enabling proactive planning of corrective actions. Currently, they lack foresight into potential quality issues, leading to reactive rather than proactive measures. This results in increased quality costs, inefficient resource allocation, and challenges in planning process corrections or machinery maintenance, ultimately impacting timely delivery.

Solution

Q-DAS Quality Forecast solution empowered by Machine Learning (ML) to predict future quality outcomes based on historical data. This proactive tool equips Process Engineers and Operators with advanced insights, enabling them to anticipate where and when specification limits will be violated. By leveraging this foresight, they can plan and implement corrective actions in a timely manner, optimizing resource allocation and planning for process corrections or machinery maintenance.

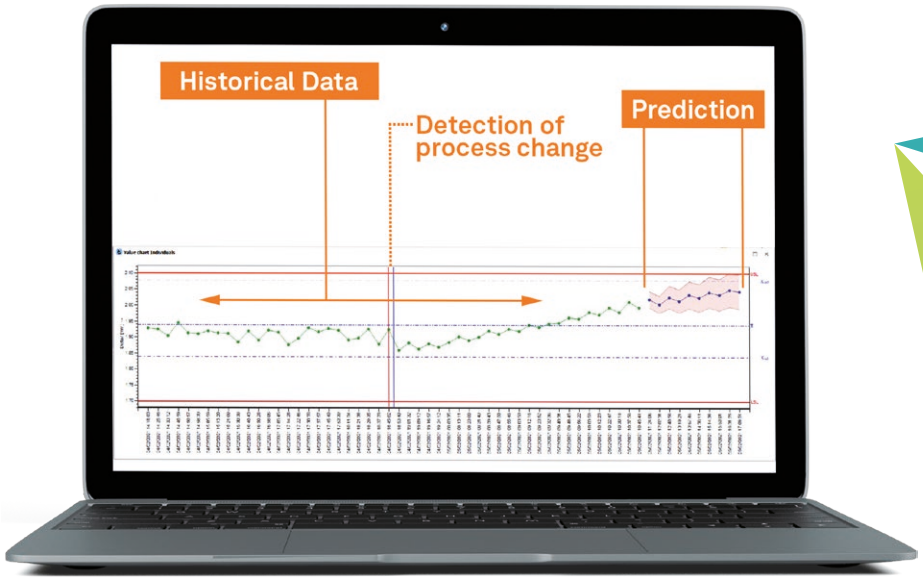
Value

Proactive Quality Assurance
Anticipating quality specification violations allows for proactive planning of corrective actions, minimizing the occurrence of defects and reducing quality costs.

Efficient Resource Allocation
By knowing beforehand where and when quality issues may arise, resources can be allocated more efficiently, optimizing production processes and reducing waste.

Timely Planning
Early detection of potential quality issues enables timely planning of process corrections or machinery maintenance, ensuring smooth operations and on-time delivery commitments are met.

Enhanced Operational Efficiency
Leveraging ML-driven quality forecasts streamlines decision-making processes, enabling Process Engineers and Operators to act swiftly and effectively, ultimately enhancing overall operational efficiency and competitiveness.




QUALITY
ASSURANCE

Market-leading software and services for quality analytics in industrial production

Hexagon´s Q-DAS software has grown to become an industry standard on the strength of its ability to perform evaluations in line with official standards and guidelines. Big-name corporations from many different fields make use of the tools to qualify their production equipment and demonstrate the suitability of their inspection processes and the quality of their products and processes. General and company-specific training sessions on how the software works ensures effective use of Q-DAS products. Instruction courses on statistical process control, production measurement technology and quality assurance provide the necessary technical and methodological knowledge.

qs-STAT

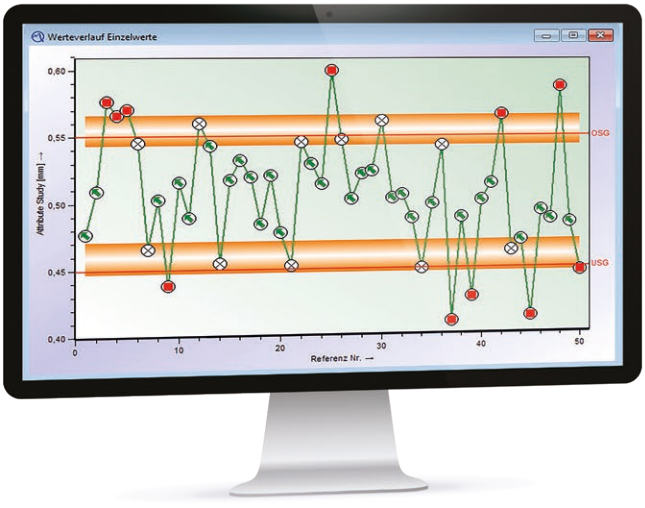
qs-STAT determines process capability parameters that help to assess production quality and increase improvement potential. Results are clear and easy to interpret and provide a better understanding of production processes.

- Cp/Cpk values and statistics based on standards and directives.
- Fully automated and compliant evaluation, no in-depth knowledge of statistics required
- Results and graphics in reports for customers and auditors
- Machine capability studies (MCS; Cm/Cmk)

solara.MP

solara checks measurement equipment and measurement processes. MSA and VDA 5 studies, as well as attributive MSA are carried out.

- MSA procedure 1,2,3
- Measurement uncertainty in accordance with VDA 5
- Easy handling and audit-proof evaluation basis
- Measurement results from Excel can be transferred and evaluated easily
- Reports as verification and documentation of the studies



O-QIS

The SPC Software O-QIS records and evaluates measurement values from different measurement systems (e.g. CMM).

- Manual data input and transfer of the values from measuring equipment
- SPC alarm monitoring and documentation of the measurement tasks
- Digital measurement data recording and central measurement data memory

M-QIS

M-QIS prepares quality information efficiently. A central service carries out routine tasks and function cyclically, thus relieving the workload of the user during daily work.

- Automatic reporting system via e-mail
- Quick information in the event of process issues
- Significant time saving during evaluation
- Database maintenance during automatic archiving

Training & consulting

A target-oriented offer of open training sessions, in-house seminars and consulting services ensures efficient use of the Q-DAS software products. Our training sessions cover an extensive range of tasks in the company, but they can also be tailored to your individual requirements.

Thanks to the extensive network of experts from different specialist fields and sectors, Hexagon offers a wide range of competent, tailored and effective consultation services.

procella

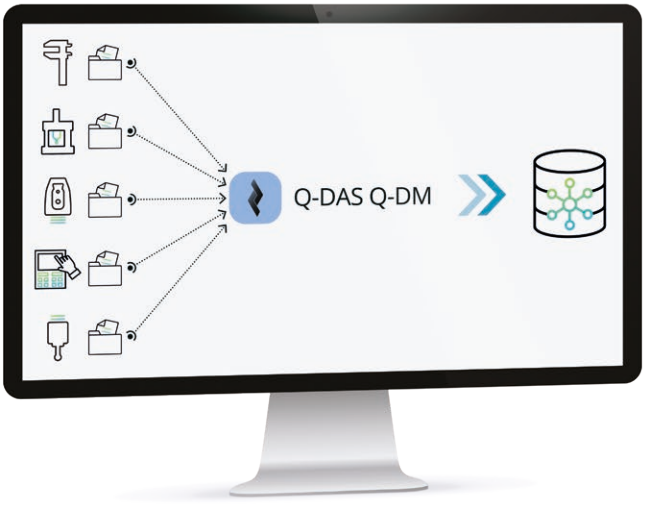
With Q-DAS procella, measurement data can be collected manually or using measuring equipment and assessed. The inspector is guided through the inspection process and has the option of documenting any deviations.

- Data collection from serial gages an multiplexer
- Easy to use for the operator, matching views for different tasks
- Alarms and actions to react in case of problems

Q-DM

Q-DM uploads Q-DAS Files into a central Q-DAS Database. The Database contains all process knowledge for a beneficial way of evaluation by using filters are selections. All Measurement data is stored automatically in one place.

- Upload Q-DAS files automatically
- No limitation on amount of files or target databases
- Converters can be integrated to upload non-Q-DAS files



Quality forecast

If you input a series of values over time, e.g., representing an arbitrary parameter over time or a sensor value over time, our Quality forecast feature predicts and outputs future values 100% automatically.

Additionally, it can identify, and output all found outliers and change points in the given values over time if requested.

IMC

IMC (Intelligent Machine Control) communicates with the machine control via a network and performs tool compensation on lathes and mills. Depending on the control, other options are available, such as workpiece zero point correction and writing variables into the NC code.

- Direct feedback to operator and machine during the production process
- Automatic parameter correction (tool offset)
- Improve of Process Capability

Dynamic Inspection

Q-DAS Dynamic Inspection is a tool to reduce inspection efforts for CMM measurements while maintaining high quality standards.

- Improve resource allocation
- Reduce measurement bottlenecks
- Focus on critical features and attributes while maintaining overall quality of the entire part
- Improvement by ensuring on time delivery and high-quality standards

Since 1992 Hi-Tech Metrology has been a leading provider of high-precision measurement and metrology services with a reputation for accuracy, reliability, and innovation. We offer a wide range of solutions designed to meet the needs of our clients across a broad range of industries including defence, automotive, aerospace, mining, medical, and general manufacturing to name just a few.

Hi-Tech Metrology's head office operations are certified ISO 9001:2015 compliant, underscoring our commitment to delivering high-quality services, continuous improvement, and customer satisfaction.

Today Hi-Tech Metrology consists of three integrated business units to help and support clients with all of their measurement needs - Products, Services and Projects. All these business units form part of a unique Australian company, one that strives to provide the best possible outcomes to our existing and future customers.