



MEVInet-Q

The Quality Data Management System
for Rolling Mills

MEVInet-Q

ACQUISITION

ARCHIVING

EVALUATION

Modern production processes need to satisfy ever-higher demands on material and its quality. These demands cannot be met without reliable measurement during production. But what should be done with the vast quantity of production data and how can they be evaluated easily? The answer to these questions is MEVInet-Q – the quality data management system from IMS.

MEVInet-Q is a quality data management system for mass storage of data with integrated evaluation possibilities designed specifically for use in rolling mills. Used intelligently, it

- **optimises production equipment,**
- **improves product quality and**
- **reduces production costs.**

Measured data are acquired for the production process at various points during the rolling phase. They can be, for example:

- thickness
- length
- surface defects
- profile
- flatness
- internal defects
- wall thickness
- contour
- purity
- width
- coating thickness
- yield strength
- diameter
- colour
- tensile strength
- temperature
- roughness
- etc.

The main advantages:

- **Archiving of data directly after measurement**
- **Length-related archiving of material data**
- **Customisable visualisation of the measured data**
- **Statistical evaluations**
- **Production preview in combination with MEVInet-V (Visualisation)**
- **Easy archiving of data from IMS measuring systems and systems from other manufacturers**
- **Web capability**
- **QDS quality data evaluation**



In DataViewer Designer, the system offers an editor for generation of freely configurable forms. It also offers a variety of display elements and mathematical functions to enable comfortable mass evaluations such as, for example, long-term trend and statistical calculations.

It is also possible to compare data from different production steps. The data volume of MEVInet-Q depends on the individual requirements of the customer.

System Configuration

MEVInet-Q comes in various versions for different customer needs:

- **Basic**
- **Professional**
- **Enterprise**

The versions differ in the number of archivable measured data, data sources and users. MEVInet-Q can also be extended by the two modules MEVInet-QDS and Q-Web. Data from manufacturer-independent systems can also be integrated.

Existing IMS measuring systems can be retrofitted with MEVInet-Q.

Data Acquisition



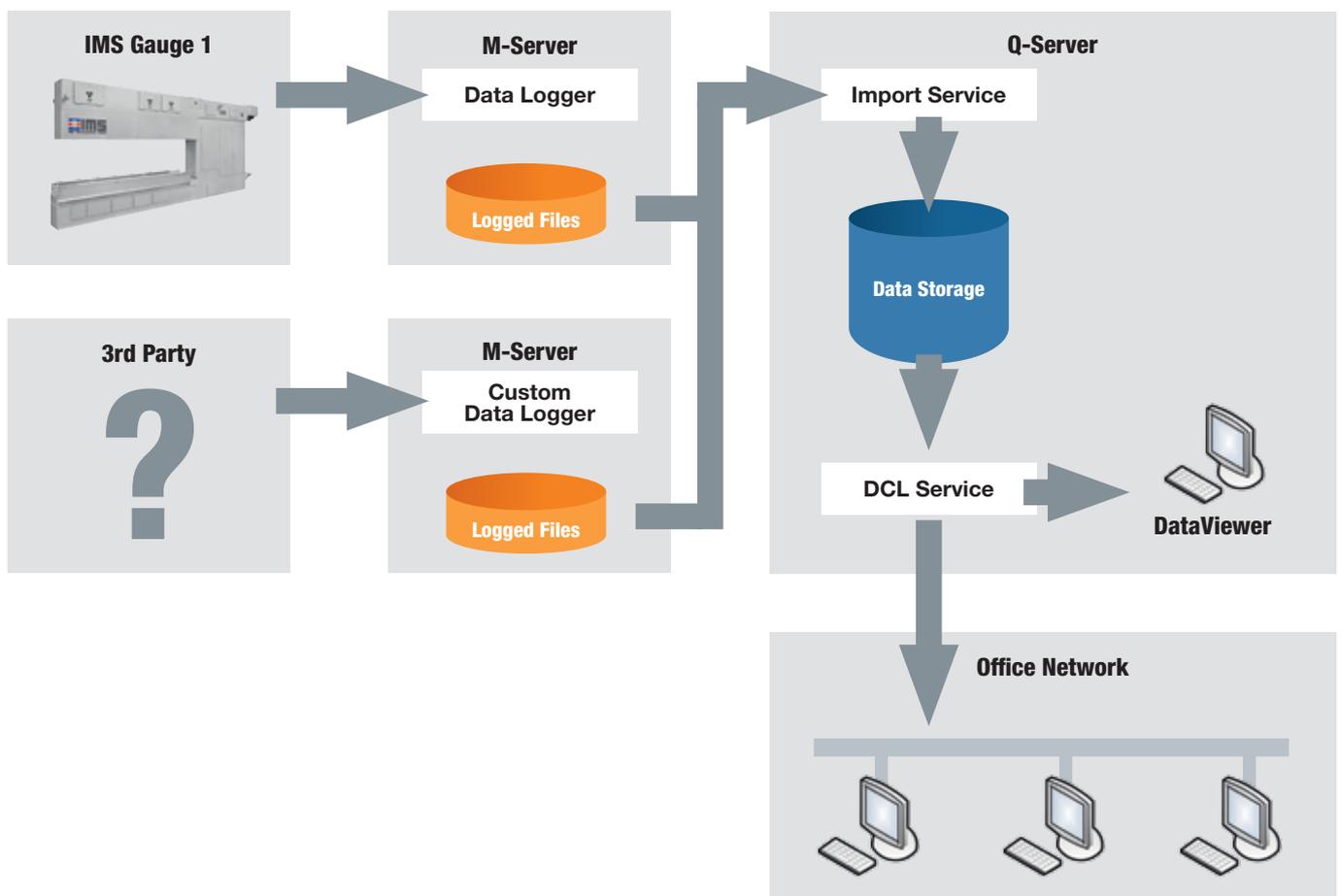
MEVInet-Q can capture and archive data on various quality features.
The following data types are supported:

- **single values (text, integer, real, ...)**
- **length profiles**
- **cross profiles**
- **strip flaws**
- **inspection pictures**

The quality features are entered in a SQL database by the IMS Import Service and archived on a product and length-related basis.

Apart from entering new data, the IMS Import Service also centrally makes all necessary changes to the database contents, thereby ensuring their consistency.

The data records can, for example, describe flat products or tubes.



Data Archiving

MEVInet-Q is designed for long-term and efficient archiving of high-resolution quality data. It uses an SQL server to store the data.

The data can be distributed among various databases and various computers. The structure and disk space needed can be adapted flexibly to requirements.

The size of the disk space depends on the volume of data and the type and resolution of the data.

Several TBytes

of measured data can be managed, thereby enabling data storage over long periods of time (**years**).



Data Evaluation



The evaluation of quality data is performed in MEVInet-Q's DataViewer. It visualises the archived setup, process and measured data in various graphic display elements.

DataViewer performance features

- **Designer**
- **Extensive possibilities for detailed presentation of the quality data**
- **Statistical evaluation**
- **Mathematical functions**
- **Long-term evaluation by optional criteria**
- **Export functions for data output**

The DataViewer ...

gives the user the possibility to create own evaluations and reports on the archived data.

The integrated **Designer** is an additional tool for free design of graphic user interfaces.

Mathematical Functions

One speciality in MEVInet-Q is mathematical linking of various quality data with each other. The links can also be applied to complex objects such as length profiles. There are a number of mathematical methods available for these operations.

Long-Term Evaluation

Long-term evaluations are carried out in MEVInet-Q over selected quantities of data. The quantity of data can be fixed in various ways through selection of query criteria. In the simplest case the evaluation can be carried out for a certain period or a certain product group. More complex evaluations in which, for example, the upstream systems are also incorporated are also possible.

Display in Web Browser

For most of the quality data MEVInet-Q offers a possibility to display the data in a web browser. The data are converted easily for this with the Page Editor.

Automatic Evaluation with MEVInet-QDS



The quality of a product is determined not only by its features and properties, but also by its requirements profile. In order to be able to use quality data for decisions, it is necessary to evaluate the data by defined rules. MEVInet-QDS offers the decision-making aid for this.

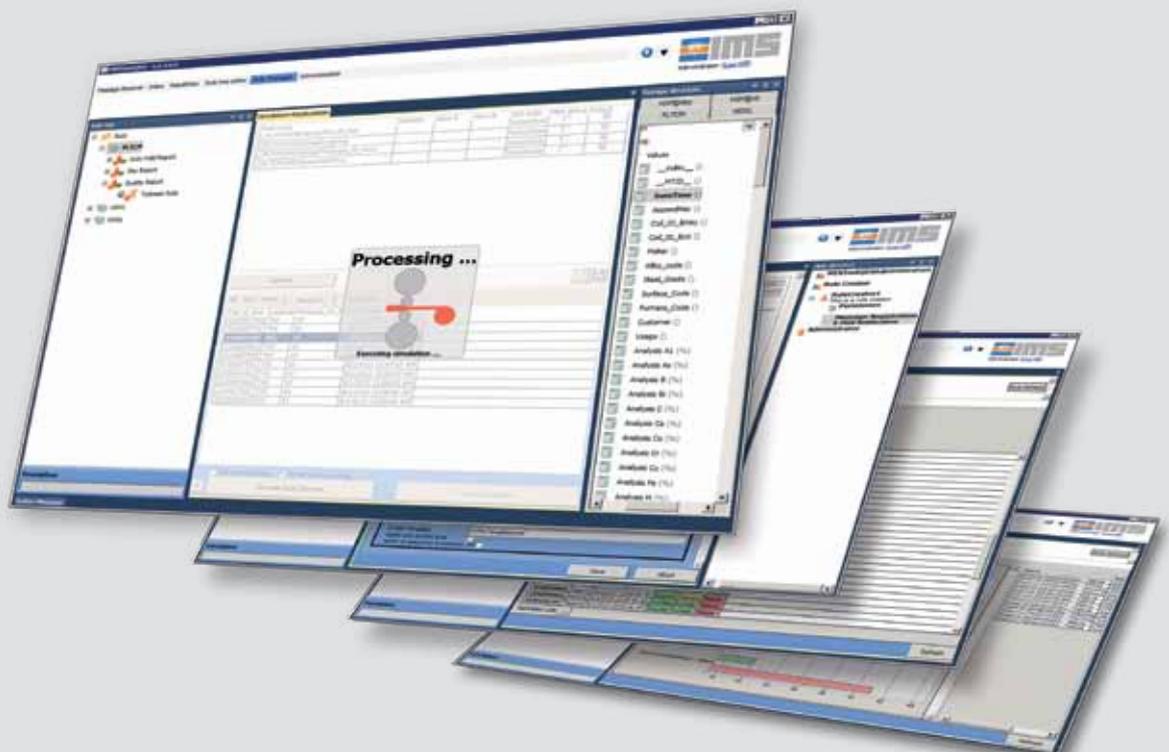
The extension module MEVInet-QDS (Quality Decision Support) can be used in conjunction with MEVInet-Q. This module permits the creation of rules for, for example, simple monitoring of limit values or depiction of

complex correlations. It is possible, amongst others, to evaluate cross profile shapes or link various parameters – also from upstream production steps – with each other. The rules are created with the integrated Rules Editor. It has a version management and a simulation feature so that the effects of rules can be tested before they are applied.

It is possible with the help of QDS to block a product manually or automatically during the production process.

The IMS rules set can be adapted very closely to product requirements and faster than is possible with any conventional rules available.

MEVInet-QDS helps to optimise production to a very high degree. Quick reporting of events enables direct intervention in the production process and sees to safe and economical production.



MEVInet-Q in Use

In modern production lines a large quantity of measured values is generated by various measuring systems at different points in the line. The data are usually evaluated at decentralised points for every single system. MEVInet-Q, by contrast, enables centralised acquisition and evaluation of measured values and process data from all IMS and third-party systems within one or more production lines.

For the management and exact association of the data records, information from the manufacturing execution system (MES) is used. It is possible, for example, to compare the measured data of a coil from the cold rolling mill with those from the hot rolling mill. Influences throughout the production process can be detected efficiently and quickly.

