# Gauge management



Gauges are the technical basis for quality assurance. Miscalibrated gauges inevitably cause a production that deviates by this deficiency. The management of gauges sometimes changes dramatically from company to company. Economic considerations often are important and thus may lead to the employment of an external calibration service. The gaugerelated modules of iQ-BASIS account for that and are designed to perform gauge-control with as less administrative effort as possible.

## Workflow

Every gauge management requires a smart way of registration and maintenance of the accompanied master data. In order to achieve maximum efficiency iQ-PMV organizes the gauges hierarchically into three levels: gauge classes, gauge types and individual gauges. Information that is entered on a superimposed level is automatically inherited by subordinate levels and can again be overwritten there to gain diversification. Furthermore all changes are recorded in a history for every single level.

Of course just recording the data is not enough to meet the requirements of a gauge management. In fact it is also essential to record and trace the typical movement actions and to shape the basis of a usage decision.

## **Overview of important features and tables**

## The gauge-class

- Summary of similar gauge-types (e.g. all micrometerscrews of different manufacturers)
- 4 free phraseable attributes per class (e.g. span, measuring accuracy, display form and operational conditions for micrometer-screws). The attribute specifications are shown depending on class-membership at creation of the gauge-type and individual gauge. The characteristics of the relative gauge are inserted here (e.g. span: 25, measuring accuracy: 0.001 etc.)
- Changes made on class-level will be handed down to the accompanied types and individual gauges.
- In addition to the gauge-class, the general class-system is also available through *iQ-GL*.

## The gauge-type

- Predefined masters for similar gauges, meaning all entries act as alterable pre-set attributes in all of the gauges related to the gauge-type.
- Determination of general master data for gauges of the specified type, e.g. class, search term, storage location, producer or vendor, associated calibration service, one or more measuring spans, accompanying documents, designations to the attributes or cost objectives maintained in the class-system
- Determination of master data needed by gauge-control (see *iQ-PMÜ* also for every gauge of the gauge-type like a quality control plan, used to do an attributively accurate inspection, the place of inspection (externally at a calibration service, in a laboratory of the company or directly at the site) or defaults for term inspection
- Revision state for gauge-drafts: line up a gauge for changes on the spot, at next calibration or not at all
- Controlling minimum amount and recorder point

## Defaults for term inspection in detail:

• Constant term, e.g. in two years and the same month. This guarantees a consistent utilization of the test laboratory.

- Dynamic terms of usage; the time of storage until the next term inspection will not be taken into account.
- If a constant term and a term of usage are entered simultaneously the inspection will take place when the first term is expired.
- Tightened inspection; if an attribute of a gauge exceeds a warning limit, the system will suggest shortening the interval of inspections in order to make sure that a gauge, which does not fulfill the specifications anymore, is not used.
- No inspection; if it is nonobligatory to inspect the gauge.
- Gauging duty; some gauge-types (scales, flowmeter for fillings etc.) are subject to official revision. There is a gauging term for this which is controlled independent from term inspection.

## The individual gauge

- Every gauge can inherit the master data of the related gauge-type.
- Individual master data not inherited from the corresponding type are for example: the status, inventory no., serial no. of the manufacturer, site and user, exact parameters for the next term inspection or gauge accessory including relevant acquisition information, like dates of order and delivery, acquisition or maintenance costs.

#### Gauge organisation

- Management of every characteristic moving action
- Recording of a history for every moving action so that a complete vita of a gauge is available. Not only a general survey is generated in the process, but all recorded information is accessible.

## Managed moving actions in detail:

- Acquisition, including all commercial details of the order and delivery transaction
- Initial test after acquisition, repair or return from calibration service

- Return to cost unit, person or machine
- Retraction after use, inspection term or due to defect
- Hand-over for external inspection, gauging, repair
- Assistance of mass-movement

## Usage decision

- On retraction from the calibration service the test-result or certificate are summarized.
- On in-house inspection without *iQ-PMÜ* results can for example be adopted from a transfer file. The external report is stored in the maintenance history file.
- On in-house inspection with *iQ-PMÜ* the result is automatically stored in the maintenance history file.

• The stored result becomes the basis for the decision of further usage of the gauge

## Rental of gauges

• Management of the complete course of a gauge rental, may it be to a foreign site or a supplier (e.g. lengthened workbench)

## Lists and evaluations

- Collection list after expiry of term interval
- Reminder list after the gauge was not retracted in due time
- Banning list when a reminder was not followed
- Inventory for sundry selection and sort criteria
- Automatic e-mail sending of the lists (see iT-MAIL)

esteq.	1 Measuring slide 200		*****	* 🙎	Engineering rev. 1 Engineering rev. 1/
est equipment type	MESSSCHIEBER200	Measuring slide 200 **	Measuring slide 200 **********		
tatus	USE in use		Kind of gauge	G Test eq.	'
auge class	MESSSCHIEBER	Measuring slide	construction		
ventory no.	INV0412-99.01	/ 01	Doc. part		
wner	0001 / 4650	Quality engineering	Lookup term	TABELLE	
te	0002 / 4913	Turning shop	Sub site		
ser					
orage location	0001 / 4646	Gauge management	Bin location	Schrank C / 25a	/
alibration lab	0001 / 4645	Laboratory	Custody		
ovider	D1	Kalibrierlabor Nord GmbH			
serv. organ.			Serial number	SN0412-99.01	
nufacturer	MITUTOYO	Mitutoyo Meßgeräte	Model		
zeige-Form	Digital		Messspanne	150	Assign class
itzenform			Teilung	0.01	
inspection			Inspection decision	OK OK	
pection plan	2618-09.1 MESSSCHIEBER Calliper				Manauring took
cat. of insp.	INT internal (in-house self-test)		Insp. strategy		measuring task
nst. per time	9 month	Aggravated 6 nonth	Next inspection	19.09.2009	
riod of usage	6 month	Aggravated 5 Monat	Next inspection	19.09.2009	
eference to period	LID to last act	ual inspection date	Sp. period		
tividual text					*

### Interface to other modules

- *iQ-PMÜ* for gauge control
- *iQ-PM-Beanst* for assisting a complaint process with automatic reminding
- *iQ-PMF* for gauge capability analysis
- *iQ-PMS* for managing the for calibration at a calibration service
- *iQ-GL* for central maintenance of master data of any module
- *iT-MAIL* for automated sending of e-mails
- *iQ-DOKU*, in order to store a calibration certificate of a certain gauge
- iQ-INFO for self-created evaluations (e.g. with Crystal Reports)
- *iT-OBJEKTE* to assist in object allowance all across the gauge organisation