Interface system for automates

iQ Basis

In a modern production line, quality data will be generated by various kinds **of automatic inspections**. More und more **zero defect** requirements of the customers determine 100% control, which can only be fulfilled for series by automates. But also mass of Q-data can be generated by systems likes **coordinate measuring equipment**, spectral analyse, SPC places etc.
iQ-MESSDAT is capable, to receive all these Q-data and handles them in various ways.

Basic functions

- **simultaneous support** of several foreign systems with different interfaces
- provision of a very **simple but efficient interface**
- different ways to receive Q-data
- handlingof several additional information
- **controlled limitation** of not so relevant data

Data processing and storing is handled by use of the inspection order structures. There is no difference between the handling of Q-data, which have been entered via directly connected tools or via iQ-MESSDAT; e.g.

- decision use about produced lots
- evaluation
- **data correction** etc.

Data communication

The different forms if data transfer are shown in the table:

- transport via **ASCII-files** with a transformation
- transport via **SQL-interface** with a transformation
- transport without transformation **directly into the target-ASCII-file**
- transport **directly into the SQL-tables** of iQ-MESSDAT
- further combination are possible

Handling of stored Q-data

- background processing with high priority
- avoiding of data queues
- while process interruptions no loss of data

Kinds of Q-data

- variable/quantitative **measured values**
- attributive/qualititative **failure information**
- the structure of the inspection order can completely be used
- the **inspection order** can **be generated automatically** just before storing the first data
- minimum requirements for unique assignment
  - order No.
  - shop order No.
  - character identification
  - values

The Q-data are stored additionally in two further tables which are not part of the tables of the inspections order.

		3D-KMG	Prüf-automat	Spektral-analyse	Fremd-projekt
Fremd-System	Daten-Quelle	▼	▼	▼	▼
	ASCII	◆			
	SQL		◆		
Transfor-mation		◆	◆		
IQ-MESSDAT	ASCII	◆	◆	◆	
IQ-MESSDAT	SQL	◆	◆	◆	◆
IQ-FEP	SQL	◆	◆	◆	◆

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The first table (**table with measured values**) consists of the mostly used data. The second table (**appendix table)** consists of data, that are normally not part of measurings produced by automates

- part No.
- inspection order No.
- character No.
- Q-data (variable, attributive)
- data, time of inspection
- inspector
- marking, whether initial value or correction after second trial

appendix table

- serial No.
- machine, tool, cave
- charge
- shift
- failure mode, -cause, -result
- component
- process step
- causing cost center
- causing part No.
- inspection plan, index
- events

Data discriminator

If you make 100% inspections for several characters, a **mass of data** will be produced. Normally some of these characters are under control, which means that the measures are not as important as those of critical processes

In this case the **interest is nor to high** and the data shouldn't saved totally, only sampling is representative enough.

iQ-MESSDAT has a **discriminator**, which allows the **suppression of uninteresting data**. The targets of importance can be influenced while data transferring

- 100% inspection with samples for trend analysis
- sample size n (e.g. 5 parts) taken after m parts (e.g. m=100)
- total suppression of data

Archiving Q-data

The table-structures of iQ-MESSDAT are also used for archiving Q-data from normal inspections orders

- the data can be read **independently from the version of iQ-Basis**
- storing of Q-data in **flat files**
- always guaranty for rearchiving
- **simple evaluation** of archived data with marketable reporting tools
- most oecconomical way of data storing