

Statistical Data Interface (QM-STI)



HELP.QMIFSTI

Release 4.6C



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Statistical Data Interface (QM-STI)

Purpose

The QM-STI (Statistical Data Interface) is an open interface linking the *Quality Management* (QM) application component to external evaluation systems. You can use this function to perform evaluations that are not supported by the statistical functions in QM results recording (control charts, histograms, process capability indices). You can use a format defined by SAP to transfer the recorded inspection results from the QM component to the external evaluation system.

The interface can be used in the following cases:

- **For the Manual Statistical Analysis of QM Inspection Results**

In order to analyze QM inspection results in your own statistics system, you need an evaluation method that transfers inspection results and calls up the statistics system.

- **For the Automatic Start of Predefined Statistical Analyses**

You can perform predefined statistical evaluations directly from transactions. For example, you can display probabilities in QM results recording or in a control chart. A prerequisite for this is that the evaluation method has been created and released with the appropriate evaluation steps by the project team.

Implementation Considerations

To use this function, you need an external statistics system that supports the QM-ST Interface. In the standard system an evaluation method is provided in Microsoft Excel®. In this example, the driver is programmed in ABAP and controls Microsoft Excel® using OLE technology (Object Linking and Embedding). Usually the drivers are installed on external systems as RFC server programs.

This evaluation method is defined in Customizing. For more information, see Customizing for *Quality Management* by choosing *Quality Control* → *QM Information System* → *Inspection Lot* → [Define Evaluation Method for QM-STI \[Ext.\]](#).

Features

The following data is copied to an external statistics system using the QM-STI Interface:

- Inspection results from statistical processes
(for example, measurement data from a machine)
- Specifications for calculating statistics
(for example, specification limits, action limits, distribution models)
- Additional data for formatting graphs and printouts
(for example, units of measurement, descriptions, vendor address)
- Retraceable data for inspection results
(for example, inspection lot number, sample number, physical sample number)

Constraints

The QM-STI Interface does not support the transfer of statistical results from external systems into the R/3 System. It only transfers quantitative data to external systems.

See also:

[Function Module BAPI_INSPLOT-STATINTERFACE \[Page 10\]](#)

QM-STI Evaluations

Use

You use this function to export QM results data to the QM-STI Interface for evaluation by an external statistics system. You can export the results data from the following areas in QM:

- **Results Recording**

In results recording you can start an STI evaluation for the current characteristic via *Extras* → *Statistics* → *QM-STI evaluations*. You reach a dialog box, where you have to choose an evaluation method and RFC destination. You can also enter additional data (e.g., title and names of the axes).

- **Quality Control Chart**

From a quality control chart, you can start an evaluation by choosing *QM-STI evaluation* from the menu options. You reach the dialog box mentioned above. All samples that were read for the control chart are transferred to the QM-STI Interface, except those from canceled inspection lots. This means that samples that were not evaluated and samples or characteristics that were not completed are not transferred to the interface.

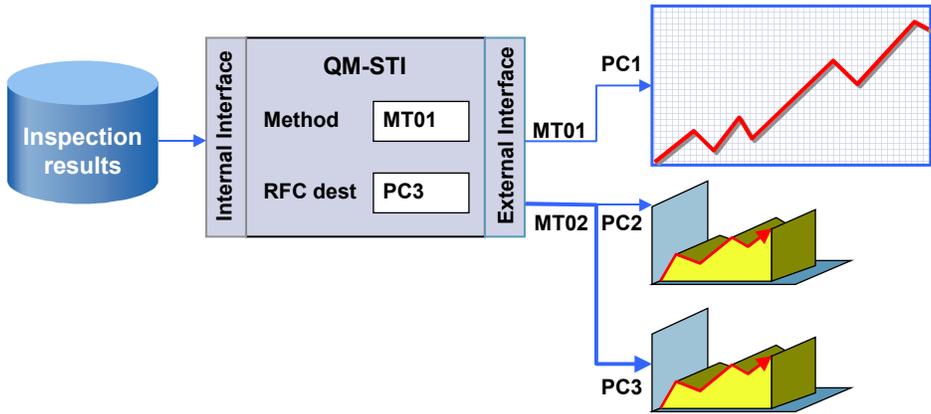
- **Results History**

From a results history screen, the data of a characteristic from multiple inspection lots is exported to the QM-STI evaluations. The samples are exported according to the sort method selected.

Prerequisites

At least one evaluation method must be defined in Customizing for QM under *Quality Management* → *Information System* → *Inspection Lot: Data Summarization in QM Info System* → *Define evaluation methods for the QM-STI Interface*.

This graphic shows the integration of QM-STI evaluations in results recording. From a menu path, a dialog box is called which allows you to select the evaluation method and the RFC destination. The RFC destination specifies on which PC and with which program the evaluation will take place.



Starting QM-STI Evaluations

1.

To	Choose	What you should know
Start QM-STI evaluations from results recording	<i>Extras → Statistics → QM-STI evaluation</i>	
Start QM-STI evaluations from the control chart	For OCX Graphics: Pushbutton <i>QM-STI evaluation</i> For SAP Statistical Graphics <i>Edit → QM-STI evaluation</i>	
Start QM-STI evaluations from the <i>results history</i> on the results recording or usage decision screens	<i>Results history</i>	The screen that displays inspection lots for the characteristic appears. 1. Select the samples you want to transfer. 2. Choose <i>Export</i> .

The *QM-STI evaluation* dialog box appears.

2. Choose an evaluation method and the RFC destination.
3. Enter a *description*.
4. Choose *Execute*.

Result

The data is transferred to the selected program, and the evaluation is started.

Function Module BAPI_INSPLOT_STATINTERFACE

Use

This function module calls the external statistics system using the data of the QM-STI Interface.

Integration

The external interface is a functional interface. The [application data \[Page 11\]](#) is exported to the external interface as tables of function module BAPI_INSPLOT_STATINTERFACE.

Structure of Function Module BAPI_INSPLOT_STATINTERFACE

PARAMETER	STRUCTURE	OPT	DESCRIPTION
Export parameter:			
RETURN	BAPIRETURN1		
Table parameter:			
REPORT_HEADER	BAPIQMSTI1	X	Report header data
MATERIAL_DATA	BAPIQMSTI2	X	Material
VENDOR_DATA	BAPIQMSTI3	X	Vendor data
CHARACTERISTIC_HEADER	BAPIQMSTI4	X	Characteristic header data
CHARACTERISTIC_QUANTITATIVE	BAPIQMSTI5	X	Quantitative characteristics
CHARACTERISTIC_QUALITATIVE	BAPIQMSTI6	X	Qualitative characteristics
SAMPLE_HEADER	BAPIQMSTI7	X	Sample data
RESULTS_QUANTITATIVE	BAPIQMSTI9	X	Quantitative original values
RESULTS_QUALITATIVE	BAPIQMSTI10	X	Qualitative original values
RESULTS_ADDITIONAL_DATA	BAPIQMSTI18	X	Additional data for the original value
METHODS_DATA	BAPIQMSTIA	X	Evaluation steps

See also:

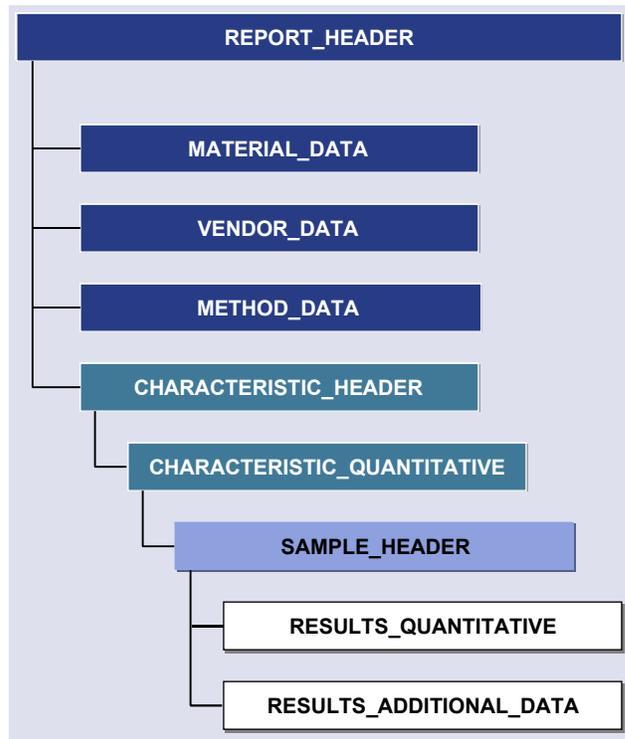
[Structure of the Application Data \[Page 11\]](#)

Structure of the Application Data

Use

The application data requires an ordered structure to be able to transfer data to the external statistics system. The data is contained in a four-tiered hierarchy, made up of the **evaluation**, **characteristic**, **sample** and **individual value**. Each level of the hierarchy contains one or more tables. For each evaluation method, you can define which tables are to be exported to the external system. In this way, you could leave out the sample level, for example, if it is not needed for a particular evaluation method.

The graphic shows the hierarchical structure of the data:



See also:

[Data Types of the Tables \[Page 12\]](#)

[Data Structures at Evaluation Level \[Page 13\]](#)

[Data Structures at Characteristic Level \[Page 24\]](#)

[Data Structures at Sample Level \[Page 31\]](#)

[Data Structures at Original Value Level \[Page 37\]](#)

Data Types of the Tables

Use

The following data types are used in the tables:

- **CHAR**
Alphanumeric fields are filled starting from the left.
Initial value: SPACE.
- **DATE**
Fields of type DATE are transferred according to the date format specified among the user data in R/3. This allows these fields to be used directly in Office® applications such as Microsoft Excel®.
Initial value: SPACE.
- **TIME**
Fields of type TIME are transferred in **hh:mm:ss** format. This allows these fields to be used directly in Office® applications such as Microsoft Excel®.
Initial value: SPACE.
- **FLTP**
Floating point numbers are transferred as a CHAR field of length 22. The numbers are usually transferred without the exponent and with the number of decimal places defined in the characteristic. If a floating point field does not have a value, it is assigned the value SPACE to differentiate it from the value 0.
Initial value: SPACE.
- **NUMC**
Whole-digit numerical values with leading zeroes.
Initial value: 000000 (depending on the length of the field).
- **BOOLEAN**
Single-character field: SPACE equals FALSE, NOT SPACE (e.g., 'X') equals TRUE.

Data Structures at Evaluation Level

Use

This level contains the evaluation header data table, as well as material and vendor data.

The QM-STI Interface allows multiple evaluations to be simultaneously transferred to a statistics system. Each is distinguished by a logical evaluation number (REPORT_NO), which is contained in every data record.

See also:

[Table of Evaluation Header Data \[Page 14\]](#)

[Table of Materials \[Page 17\]](#)

[Table of Vendor Data \[Page 18\]](#)

Table of Evaluation Header Data

Use

This table contains data which is the same for all characteristics and samples of an evaluation.

Table: REPORT_HEADER-Evaluation Header Data - BAPIQMST11

KEY	FIELD	TYPE	LENGTH	OPT	DESCRIPTION
X	REPORT_NO	NUMC	4		Number of the evaluation
	LANGU	CHAR	2		Language
	METHOD	CHAR	40		Evaluation method to be carried out
	METHOD_T	CHAR	80		Description of the evaluation method
	PLANT	NUMC	4	X	Plant
	PLANT_TXT	CHAR	30	X	Description of the plant
	LOT_ORG	CHAR	2	X	Inspection lot origin
	LOT_ORG_TX	CHAR	40	X	Text for the inspection lot origin
	INSPTYPE	CHAR	8	X	Inspection type
	INSPTYPE_T	CHAR	40	X	Text for the inspection type
	TITLE	CHAR	80	X	Title of the evaluation
	SUBTITLE	CHAR	80	X	Subtitle
	LABEL_X	CHAR	80	X	Title of the x-axis
	LABEL_Y	CHAR	80	X	Title of the y-axis
	USERC1	CHAR	10	X	Reserved for customer enhancements
	USERC2	CHAR	20	X	Reserved for customer enhancements
	USERC3	CHAR	40	X	Reserved for customer enhancements

Fields

The individual fields of the table are described here in more detail:

- **REPORT_NO**

This field distinguishes the data of each evaluation. It is contained in every data structure of the QM-STI Interface.

You can set the number of evaluations per call of the external statistics systems in Customizing for QM.

- **LANGU**

This field contains the language that the texts were created in.

- **METHOD**

Table of Evaluation Header Data

This field contains the evaluation method. The methods are defined in Customizing for QM. When you call a QM-STI evaluation, you can select a method, as long as more than one is available for selection.

- **METHOD_T**

This field contains the language-dependent short text for the evaluation method.

- **PLANT**

Plant, in which the inspection results of an evaluation exist.

- **PLANT_TEXT**

This field contains the description of the plant in the logon language.

- **LOT_ORG**

This field contains the inspection lot origin. Possible origins are stored as domain parameters in the R/3-Repository (Domain QHERK). The following origins currently exist:



LOT_ORG	LOT_ORG_TX
	No inspection lot origin
01	Goods receipt
02	Goods issue
03	Production
04	Goods receipt from production
05	Miscellaneous goods movement
06	Return from customers
07	Audit
08	Stock transfer
09	Recurring inspection
10	Delivery to customer with customer order
11	Delivery to customer without customer order
12	Delivery, in general
13	Production with run schedule header
14	Inspection for plant maintenance
89	Miscellaneous

- **LOT_ORG_TX**

This field contains the short text for the inspection lot origin in the logon language.

- **INSPTYPE**
This field contains the inspection type. Inspection types are defined in Customizing for QM.
- **INSPTYPE_T**
This field contains the text for the inspection type.
- **TITLE**
This field contains a text as a title for the evaluation. The title is a parameter of the evaluation and can be entered by the user along with the selection conditions.
- **SUBTITLE**
This field contains a text as a subtitle to the evaluation.
- **LABEL_X**
This field contains a text, which describes the x-axis in diagrams.
- **LABEL_Y**
This field contains a text, which describes the y-axis in diagrams.
- **USERC1, USERC2, USER C3**
These fields are not used by QM. They can be used however in customer enhancements to transport additional data. Normally the contents of fields of the same name in table QIMTH are copied to these fields.



You can use SAP enhancement QIST0010 to influence the creation of entries for this table. The customer function is called after the data fields are filled. In this way, you can either modify the contents of the data fields or fill the user fields. The key fields are not filled at this point and cannot be changed.

Table of Materials

Use

This table contains a material for each evaluation, if a material can be uniquely identified.

Table: MATERIAL_DATA-Material - BAPIQMSTI2

KEY	FIELD	TYPE	LENGTH	OPT	DESCRIPTION
X	REPORT_NO	NUMC	4		Number of the evaluation
	MATERIAL	CHAR	18		Material
	MAT_TXT	CHAR	49		Short text for the material
	USERC1	CHAR	10	X	Reserved for customer enhancements
	USERC2	CHAR	20	X	Reserved for customer enhancements
	USERC3	CHAR	40	X	Reserved for customer enhancements

Fields

The individual fields of the table are described here in more detail:

- **REPORT_NO**
This field indicates the evaluation that this material record belongs to.
- **MATERIAL**
This field contains the material number from the inspection lot.
- **MAT_TXT**
This field contains the short text of the material in the logon language.
- **USERC1, USERC2, USER C3**
These fields are not used by QM. They can be used however in customer enhancements to transport additional data.



You can use SAP enhancement QIST0002 to influence the creation of entries for this table. The customer function is called after the data fields are filled. In this way, you can either modify the contents of the data fields or fill the user fields. The key fields are not filled at this point and cannot be changed.

Table of Vendor Data

Use

A data record is sent to the vendor, if all the data selected comes from inspection lots for the same vendor.

Table: VENDOR_DATA-Vendor - BAPIQMSTI3

KEY	FIELD	TYPE	LENGTH	OPT	DESCRIPTION
X	REPORT_NO	NUMC	4		Number of the evaluation
	VENDOR_NO	CHAR	16		Vendor
	TITLE	CHAR	15	X	Title of vendor
	NAME	CHAR	35	X	Name 1: vendor
	NAME_2	CHAR	35	X	Name 2: vendor
	NAME_3	CHAR	35	X	Name 3: vendor
	NAME_4	CHAR	35	X	Name 4: vendor
	STREET	CHAR	35	X	Street and number
	PO_BOX	CHAR	10	X	PO box
	POBX_PCD	CHAR	10	X	Post/Zip code of the PO box
	COUNTRY	CHAR	3	X	Country key
	POSTL_CODE	CHAR	10	X	Post/Zip code
	CITY	CHAR	35	X	City/Town
	DISTRICT	CHAR	35	X	District
	REGION	CHAR	3	X	Region
	USERC1	CHAR	10	X	Reserved for customer enhancements
	USERC2	CHAR	20	X	Reserved for customer enhancements
	USERC3	CHAR	40	X	Reserved for customer enhancements

- **USERC1, USERC2, USER C3**

These fields are not used by QM. They can be used however in customer enhancements to transport additional data.



You can use SAP enhancement QIST0010 to influence the creation of entries for this table. The customer function is called after the data fields are filled. In this way, you can either modify the contents of the data fields or fill the user fields. The key fields are not filled at this point and cannot be changed.

Table of Evaluation Steps

Use

This table contains the active evaluation steps of the selected evaluation method. The evaluation steps describe the details of the required evaluation method. The evaluation steps (texts + parameters) are interpreted by the external system.

Integration

For each evaluation step, there are fields for the evaluation results containing text and attributes. The external statistics system can use these fields to send results back to the R/3 System. The results are not currently processed by QM. You can define your own evaluations in a function module and assign it to an evaluation method (FUN_AFTER).

Prerequisites

Evaluation steps are defined in Customizing for *Quality Management*.

Features

Evaluation steps can currently be defined for a REPORT_NO/CHAR_NO combination. An assignment of evaluation steps to characteristic versions, samples or individual values is not currently possible. For this reason their key fields are initial.

Table: METHOD_DATA-Evaluation Steps - BAPIQMSTIA

KEY	FIELD	TYPE	LENGTH	OPT	DESCRIPTION
X	REPORT_NO	NUMC	4		Number of the evaluation
X	CHAR_NO	NUMC	4		Number of the characteristic
	CHAR_VERS	NUMC	4		Not currently used
	SAMPLE_NO	NUMC	8		Not currently used
	RES_NO	NUMC	8		Not currently used
	RES_NO_C	NUMC	8		Not currently used
X	STEP_NO	NUMC	4		Number of the evaluation step
	STEP	CHAR	40	X	Description of the evaluation step
	PARAM_1	CHAR	40	X	Parameter 1
	PARAM_2	CHAR	40	X	Parameter 2
	PARAM_3	CHAR	40	X	Parameter 3
	PARAM_4	CHAR	40	X	Parameter 4
	PARAM_5	CHAR	40	X	Parameter 5
	RES_VAL1	FLTP	8	X	Result 1
	RES_VAL2	FLTP	8	X	Result 2

Table of Evaluation Steps

	RES_VAL3	FLTP	8	X	Result 3
	RES_ATTR	CHAR	1	X	Attribute of the result
	RES_INVALID	CHAR	1	X	Invalid result
	RES_TEXT	CHAR	80	X	Text for the result
	USERC1	CHAR	10	X	Reserved for customer enhancements
	USERC2	CHAR	20	X	Reserved for customer enhancements
	USERC3	CHAR	40	X	Reserved for customer enhancements

Fields

The individual fields of the table are described here in more detail:

- **REPORT_NO**
This field contains the number of the evaluation.
- **CHAR_NO**
This field contains the number of the evaluation characteristic in the current evaluation for which the evaluation steps are to be evaluated.
- **CHAR_VERS**
This field contains the characteristic version. This field is not currently filled.
- **SAMPLE_NO**
This field contains the sample number. This field is not currently filled.
- **RES_NO**
This field contains the number of results within a sample. This field is not currently filled.
- **RES_NO_C**
This field contains the number of results within a characteristic. This field is not currently filled.
- **STEP_NO**
This field contains the number of the evaluation steps. This number specifies, in which sequence the evaluation steps are to be carried out.
- **STEP**
This field contains the description of the evaluation steps. Allowed entries for this field are dependent on the statistics system you use.
- **PARAM_1**
This field is intended as a parameter for the evaluation steps. The parameters can be defined in transaction QMTH in Customizing for *Quality Management*. Via a customer enhancement, the parameters can also be determined dynamically (e.g., they could be read from the corresponding inspection plan).
- **PARAM_2**

This field is intended as a parameter for the evaluation steps. The parameters can be defined in Customizing for *Quality Management*.

- **PARAM_3**

This field is intended as a parameter for the evaluation steps. The parameters can be defined in Customizing for *Quality Management*.

- **PARAM_4**

This field is intended as a parameter for the evaluation steps. The parameters can be defined in Customizing for *Quality Management*.

- **PARAM_5**

This field is intended as a parameter for the evaluation steps. The parameters can be defined in Customizing for *Quality Management*.

- **RES_VAL1**

This field is intended for a result from the statistics system. The statistics system enters the calculated result in the transferred evaluation step. In the R/3 System, this result is made available and can be processed by a function module. QM does not currently process this result.

- **RES_VAL2**

This field is intended for a second result from the evaluation step.

- **RES_VAL3**

This field is intended for a third result from the evaluation step.

- **RES_ATTR**

The statistics system can set an attribute for the result in this field. The attribute is not evaluated by QM. For the validity of the result, the RES_INVAL field is decisive.

- **RES_INVAL**

The statistics system defines in this field whether the calculated results are valid.

Possible values:

'X'	Invalid result
' '	Valid result

- **RES_TEXT**

In this field the statistics system can define a text either as a result or as a complement to the result.

- **USERC1, USERC2, USER C3**

These fields are not used by QM. They can be used however in customer enhancements to transport additional data in both directions. The contents of the field of the same name from table QISTP are transferred as standard.



You can use SAP enhancement QIST0011 to influence the creation of entries for this table. The customer function is called after the data fields are filled. In this way, you

Table of Evaluation Steps

can either modify the contents of the data fields or fill the user fields. The key fields are not filled at this point and cannot be changed.

Data Structures at Characteristic Level

Use

This level contains the evaluation characteristic. An evaluation characteristic represents a statistical process that should be more closely analyzed in an external statistics system. An evaluation can have several evaluation characteristics, all of which are numbered within the evaluation (CHAR_NO). The numbers are temporary and do not refer to the characteristic numbers in QM.

The data from the evaluation characteristics are exported to two tables:

- General characteristic data is transferred to the CHARACTERISTIC_HEADER table. This data is the same for all samples of the characteristic.
- Quantitative characteristic data are transferred to the CHARACTERISTIC_QUANTITATIVE table.

Features

Versions can be created for evaluation characteristics, if changes are made to certain data (e.g., tolerance limit changes). In this case, the characteristic number is not changed, only the version number is increased. The samples are then numbered by the version numbers.

If the general characteristic data change (CHARACTERISTIC_HEADER), a new evaluation characteristic is created. Version creation can be deactivated in Customizing for *Quality Management*. This way a new evaluation characteristic is always created.

In Customizing for *Quality Management*, the maximum number of characteristics that can be transferred per evaluation to the statistics system can be defined.

See also:

[Table of Characteristic Header Data \[Page 25\]](#)

[Table of Quantitative Characteristics \[Page 28\]](#)

Table of Characteristic Header Data

Use

This table contains general characteristic data. This is the data that is identical for all samples of the characteristic.

Table: CHARACTERISTIC_HEADER Characteristic Header Data - BAPIQMSTI4

KEY	FIELD	TYPE	LENGTH	OPT	DESCRIPTION
X	REPORT_NO	NUMC	4		Number of the evaluation
X	CHAR_NO	NUMC	4		Number of the characteristic
	CHAR_DESCR	CHAR	40		Description of the characteristic
	CHAR_TYPE	CHAR	2		Characteristic type
	MSTR_CHAR	CHAR	8	X	Master inspection characteristic
	VMSTR_CHAR	CHAR	6	X	Master inspection characteristic version
	CC_TYPE	CHAR	3	X	Control chart type (code)
	CC_TYPE_T	CHAR	40	X	Short text for the control chart type
	DIST_TYPE	CHAR	4	X	Distribution type
	DIST_PI1	NUMC	6	X	Numerical parameter 1
	DIST_PI2	NUMC	6	X	Numerical parameter 2
	DIST_PF1	FLTP	22	X	Parameter 1
	DIST_PF2	FLTP	22	X	Parameter 2
	DIST_PF3	FLTP	22	X	Parameter 3
	CH_WGT_COD	CHAR	2	X	Characteristic weighting
	CH_WGT_FAC	NUMC	4	X	Characteristic weighting factor
	CH_WGT_TXT	CHAR	40	X	Short text for the characteristic weighting
	CH_NO_TLST	NUMC	4	X	Characteristic number in the task list
	OPER_NO	CHAR	4	X	Operation number in the task list
	OPER_TXT	CHAR	40	X	Operation short text
	INFOFIELD1	CHAR	10	X	Info field 1 from the characteristic
	INFOFIELD2	CHAR	20	X	Info field 2 from the characteristic
	INFOFIELD3	CHAR	40	X	Info field 3 from the characteristic
	USERC1	CHAR	10	X	Reserved for customer enhancements
	USERC2	CHAR	20	X	Reserved for customer enhancements
	USERC3	CHAR	40	X	Reserved for customer enhancements

Fields

The individual fields of the table are described here in more detail:

- **REPORT_NO**
This field contains the number assigned to the evaluation.
- **CHAR_NO**
This field contains the number of the evaluation characteristic in the current evaluation. This number is generated when the interface data records are created and is not connected to the characteristic numbers in QM. It connects the subordinate data records and inspection results.
- **CHAR_DESCR**
This field contains the description of the characteristic in the logon language. It is determined dynamically when the data records are created. It can be the short text of the master characteristic or the task list characteristic. You can influence the characteristic description via a customer enhancement.
- **CHAR_TYPE**
In this field, the characteristic type is exported. The following characteristic type is relevant for evaluations:
01 Quantitative characteristic
- **MSTR_CHAR**
If a master inspection characteristic is assigned, it's key is copied to this field.
- **VMSTR_CHAR**
Contains the master inspection characteristic version.
- **CC_TYPE**
Contains the control chart type assigned to the characteristic in the QM application.
- **CC_TYPE_T**
Contains the short text for the control chart type in the logon language.
- **DIST_TYPE**
Contains the distribution type of the characteristic. Since the distribution type cannot be defined in the Standard system, you can use an info field in the characteristic with SAP enhancement QIST0004.
- **DIST_PI1**
Whole-digit parameter for the distribution type.
- **DIST_PI2**
Whole-digit parameter for the distribution type.
- **DIST_PF1**
Parameter for the distribution type.
- **DIST_PF2**

Table of Characteristic Header Data

- Parameter for the distribution type.
- **DIST_PF3**
Parameter for the distribution type.
 - **CH_WGT_COD**
Contains the characteristic weighting in coded form, if this was maintained in the characteristic.
 - **CH_WGT_FAC**
Contains the characteristic weighting factor.
 - **CH_WGT_TXT**
Contains the short text for the characteristic weighting in the logon language.
 - **CH_NO_TLST**
Contains the characteristic number from the inspection plan.
 - **OPER_NO**
Contains the operation number from the inspection plan.
 - **OPER_TXT**
Contains the short text for the operation in the logon language.
 - **INFOFIELD1**
Contains info field 1 from the characteristic.
 - **INFOFIELD2**
Contains info field 2 from the characteristic.
 - **INFOFIELD3**
Contains info field 3 from the characteristic.
 - **USERC1, USERC2, USER C3**
These fields are not used by QM. They can be used however in customer enhancements to transport additional data.



You can use SAP enhancement QIST0004 to influence the creation of entries for this table. The customer function is called after the data fields are filled. In this way, you can either modify the contents of the data fields or fill the user fields. The key fields are not filled at this point and cannot be changed.

Table of Quantitative Characteristics

Use

This table contains the characteristic requirements for quantitative characteristics (CHAR_TYPE 01).

Table: CHARACTERISTIC_QUANTITATIVE - Quantitative Characteristic - BAPIQMSTI5

KEY	FIELD	TYPE	LENGTH	OPT	DESCRIPTION
X	REPORT_NO	NUMC	4		Number of the evaluation
X	CHAR_NO	NUMC	4		Number of the characteristic
X	CHAR_VERS	NUMC	4		Version of the characteristic
	DEC_PLACES	NUMC	3		Number of decimal places
	MEAS_UNIT	CHAR	6		Internal code for the unit of measurement
	MEAS_UNITT	CHAR	20		Short text for the unit of measurement
	MEAS_UNITC	CHAR	3	X	ISO code for the unit of measurement
	TARGET_VAL	FLTP	22	X	Target value
	UP_TOL_LMT	FLTP	22	X	Upper tolerance limit
	LW_TOL_LMT	FLTP	22	X	Lower tolerance limit
	UP_LMT_1	FLTP	22	X	Upper limit 1
	LW_LMT_1	FLTP	22	X	Lower limit 1
	UP_LMT_2	FLTP	22	X	Upper limit 2
	LW_LMT_2	FLTP	22	X	Lower limit 2
	UP_PLS_LMT	FLTP	22	X	Upper plausibility limit
	LW_PLS_LMT	FLTP	22	X	Lower plausibility limit
	UP_CTRL_1	FLTP	22	X	Upper action limit 1 (e.g. x-bar)
	LW_CTRL_1	FLTP	22	X	Lower action limit 1
	UP_CTRL_2	FLTP	22	X	Upper action limit 2 (e.g. s)
	LW_CTRL_2	FLTP	22	X	Lower action limit 2
	CC_NO	NUMC	12	X	Control chart number in QM
	USERC1	CHAR	10	X	Reserved for customer enhancements
	USERC2	CHAR	20	X	Reserved for customer enhancements
	USERC3	CHAR	40	X	Reserved for customer enhancements

You can use field CHAR_VERS (depending upon the setting you choose) to create various characteristic variants in Customizing for QM. A new variant is created when the contents of any

Table of Quantitative Characteristics

of the fields of this structure changes during the characteristic preparation in the STI Interface. Such variants can be useful, for example, when changes to the tolerance or action limits should be displayed. If you do not need variants created, then a new evaluation characteristic will be created.



For fields of type FLTP, the initial value is SPACE.

Fields

The individual fields of the table are described here in more detail:

- **REPORT_NO**
Contains the number assigned to the evaluation.
- **CHAR_NO**
Contains the characteristic number for this characteristic version.
- **CHAR_VERS**
Contains the characteristic version. This is created when the QM application creates the interface records. There is no connection to the change and version management in QM.
- **DEC_PLACES**
Contains the number of decimal places used in the inspection results.
- **MEAS_UNIT**
Contains the internal representation for the unit of measurement of the characteristic.
- **MEAS_UNITT**
Contains the short text of the internal unit of measurement in the logon language.
- **MEAS_UNITC**
Contains the ISO code for the unit of measurement, if this was assigned in the R/3 System. In contrast to the internal representation of the unit of measurement, this field can be interpreted by an external statistics system.



The ISO codes are assigned to internal units of measurement in transaction CUNI.

- **TARGET_VAL**
Contains the target value for the characteristic.
- **UP_TOL_LMT**
Contains the upper limiting value.
- **LW_TOL_LMT**
Contains the lower limiting value.
- **UP_LMT_1**
Contains upper limit 1 of the characteristic.

- **LW_LMT_1**
Contains lower limit 1 of the characteristic.
- **UP_LMT_2**
Contains upper limit 2 of the characteristic.
- **LW_LMT_2**
Contains lower level 2 of the characteristic.
- **UP_PLS_LMT**
Contains the upper plausibility limit of the characteristic.
- **LW_PLS_LMT**
Contains the lower plausibility limit of the characteristic.
- **UP_CTRL_1**
Contains the first upper action limit (e.g., for \bar{x}). If a quality control chart exists in QM for the characteristic, it's action limits are transferred.

The field can also be filled using SAP enhancement QIST0005. In the sample coding for the enhancement you are shown how you can use the first upper pair of limits as action limits in the characteristic.
- **LW_CTRL_1**
Contains the first lower action limit.
- **UP_CTRL_2**
Contains the second upper action limit (e.g., for s). If a two-track quality control chart exists in QM for the characteristic, the upper action limit of track 2 is transferred.
- **LW_CTRL_2**
Contains the second lower action limit.
- **CC_NO**
Contains the control chart number in QM application component, if a control chart exists for the characteristic.
- **USERC1, USERC2, USER C3**
These fields are not used by QM. They can be used however in customer enhancements to transport additional data.



You can use SAP enhancement QIST0005 to influence the creation of entries for this table. The customer function is called after the data fields are filled. In this way, you can either modify the contents of the data fields or fill the user fields. The key fields are not filled at this point and cannot be changed.

Data Structures at Sample Level

Use

In contrast to the QM data model, there is always a sample record in the QM-STI Interface. Within an evaluation characteristic, the sample records are numbered in order, starting with the number 1.

See also:

[Table of Sample Data \[Page 32\]](#)

Table of Sample Data

Use

The sample data are transferred in this table. In the QM-STI Interface, every individual value belongs to a sample, regardless of whether it is processed in QM using independent multiple samples or inspection points.

Table: SAMPLE_HEADER - Sample Header - BAPIQMSTI7

KEY	FIELD	TYPE	LENGTH	OPT	DESCRIPTION
X	REPORT_NO	NUMC	4		Number of the evaluation
X	CHAR_NO	NUMC	4		Number of the characteristic
X	CHAR_VERS	NUMC	4		Version of the characteristic
X	SAMPLE_NO	NUMC	8		Number of the sample
	SMPL_ATTR	CHAR	1	X	Attribute of the sample
	ATTR_TXT	CHAR	40	X	Text for the attribute
	SMPL_INVAL	BOOLEAN	1	X	Sample valid/invalid
	SMPL_SIZE	NUMC	10	X	Sample scope n
	INSP_LOT	NUMC	12	X	Inspection lot number (traceability)
	CHAR_CONF	NUMC	8	X	Confirmation number of the characteristic
	QM_SMPL_NO	NUMC	8	X	Sample number from the sample record
	BATCH	CHAR	10	X	Batch
	SMPL_REMRK	CHAR	40	X	Inspection description for the sample
	ORDER_NO	CHAR	12	X	Order number
	RS_HDR_NO	CHAR	12	X	Run schedule header number
	CREAT_DATE	DATE	8		Date of creation
	CREAT_TIME	TIME	6		Time of creation
	CHNGE_DATE	DATE	8	X	Date of change
	CHNGE_TIME	TIME	6	X	Time of change
	IP_USERC1	CHAR	18	X	User field for inspection point
	IP_USERC2	CHAR	10	X	User field for inspection point
	IP_USERN1	NUMC	10	X	User field for inspection point
	IP_USERN2	NUMC	3	X	User field for inspection point
	IP_USERD1	DATE	8	X	User field for inspection point

Table of Sample Data

	IP_USER1	TIME	6	X	User field for inspection point
	PART_LOT	NUMC	6	X	Partial lot
	EQUI_NO	CHAR	18	X	Equipment number
	FUNCT_LOC	CHAR	30	X	Functional location
	PHYS_SMPL	NUMC	12	X	Physical sample
	USERC1	CHAR	10	X	Reserved for customer enhancements
	USERC2	CHAR	20	X	Reserved for customer enhancements
	USERC3	CHAR	40	X	Reserved for customer enhancements

Prerequisites

The sample numbers are generated when data is created in QM. If the samples of several characteristics are synchronized (e.g., for inspection points), this is taken into account when the numbers are assigned. The sample numbers of individual characteristics may contain gaps.

A checkbox can be activated in Customizing for *Quality Management* to ensure that invalid samples are not transferred.

You can also define that incomplete samples are not transferred (sample scope target = actual). This is also the case for the original values of the sample.

Fields

The individual fields of the table are described here in more detail:

- **REPORT_NO**
This field contains the evaluation number to which the sample belongs.
- **CHAR_NO**
This field contains the characteristic number to which the sample belongs.
- **CHAR_VERS**
This field contains the characteristic version.
- **SAMPLE_NO**
This field contains the number of the sample within the characteristic. The characteristic version is not used in the numbering of the samples.
- **SMPL_ATTR**
Attribute of the sample in coded form. The text for this is transferred in field ATTR_TXT. The validity of the result is transferred in field SMPL_INVAL.



The attributes are defined in QM as fixed values in the domain QATTRIBUT. The following entries currently exist:

RES_ATTR	RES_INVAL	ATTR_TEXT
----------	-----------	-----------

		The result is valid.
&	X	Error occurred during results transfer from the system.
*	X	Value marked as an outlier. Result is invalid.
/	X	The result is invalid.
<		Exact value is smaller than indicated. Result is valid.
>		Exact value is greater than indicated. Result is valid.
?		Value was estimated. Result is valid.
A	X	Error in the formula. Help characteristic is unsuitable.
B	X	Error in the formula. Help characteristic not found.
C	X	Syntax error in the formula.
D	X	Help characteristic in the formula has the wrong format.
E	X	Error during help characteristic value transfer.
F	X	Arithmetical error during the formula calculation.
G	X	Not all requested individual results were calculated.
H	X	Error during single unit calculations of the formula.

- **ATTR_TXT**

Text for the attribute.

- **SMPL_INVAL**

Tells you whether the sample is valid or invalid.

SMPL_INVAL = 'X'	Sample is invalid
SMPL_INVAL = ' '	Sample is valid

- **SMPL_SIZE**

Contains the intended sample scope.

- **INSP_LOT**

Contains the number of the inspection lot in QM to which the sample belongs.

- **CHAR_CONF**

Contains the confirmation number of the characteristic in QM to which the sample belongs.

- **QM_SMPL_NO**

Contains the sample number from the sample record in QM. This field is initial, if no samples exist in QM. In this case, the characteristic data is used as sample data.

- **BATCH**

Table of Sample Data

Contains the batch. For inspection points with partial lots and batches, the batch is taken from the batch. Otherwise it is taken from the inspection lot.

- **SMPL_REMRK**
Contains the inspection description of the sample.
- **ORDER_NO**
Contains the production order number, if the sample comes from a production order.
- **RS_HDR_NO**
Contains the run schedule header number, if the sample comes from a run schedule header.
- **CREAT_DATE**
Contains the creation date of the sample record in QM.
- **CREAT_TIME**
Contains the time of creation of the sample record in QM.
- **CHNGE_DATE**
Contains the change date of the sample record in QM.
- **CHNGE_TIME**
Contains the time of change of the sample record in QM.
- **IP_USERC1**
Contains the corresponding field from the inspection point identification.
- **IP_USERC2**
Contains the corresponding field from the inspection point identification.
- **IP_USERN1**
Contains the corresponding field from the inspection point identification.
- **IP_USERN2**
Contains the corresponding field from the inspection point identification.
- **IP_USERD1**
Contains the corresponding field from the inspection point identification.
- **IP_USERT1**
Contains the corresponding field from the inspection point identification.
- **PART_LOT**
Contains the number of the partial lot in QM to which the sample belongs.
- **EQUI_NO**
Contains the equipment number from the inspection point identification.
- **FUNCT_LOC**
Contains the functional location from the inspection point identification.

- **PHYS_SMPL**

Contains the physical sample from the inspection point identification.

- **USERC1, USERC2, USER C3**

These fields are not used by QM. They can be used however in customer enhancements to transport additional data.



You can use SAP enhancement QIST0007 to influence the creation of entries for this table. The customer function is called after the data fields are filled. In this way, you can either modify the contents of the data fields or fill the user fields. The key fields are not filled at this point and cannot be changed.

Data Structures at Original Value Level

Use

The inspection result records within a sample are sequentially numbered, starting at 1. An additional number is recorded to identify the inspection result records within a characteristic.

See also:

[Table of Quantitative Original Values \[Page 38\]](#)

[Table of Additional Data for the Original Values \[Page 41\]](#)

Table of Quantitative Original Values

Use

This table enables you to carry out distribution tests, to determine distribution parameters, as well as create histograms, probability nets, run charts etc.

Table: RESULTS_QUANTITATIVE - Quantitative Original Values - BAPIQMSTI9

KEY	FIELD	TYPE	LENGTH	OPT	DESCRIPTION
X	REPORT_NO	NUMC	4		Number of the evaluation
X	CHAR_NO	NUMC	4		Number of the characteristic
X	CHAR_VERS	NUMC	4		Version of the characteristic
X	SAMPLE_NO	NUMC	8		Number of the sample
X	RES_NO	NUMC	8		Number of the sample results
X	RES_NO_C	NUMC	8		Number of the characteristic results
	INSP_DATE	DATE	8		Date of inspection
	INSP_TIME	TIME	6		Time of inspection
	RES_VALUE	FLTP	22		Measurement value
	RES_ATTR	CHAR	1	X	Attribute of the result record
	RES_INVAL	BOOLEAN	1	X	Invalid result
	ERR_CLASS	CHAR	2		Defect class
	SMPL_REMRK	CHAR	40	X	Inspection description for the sample
	USERC1	CHAR	10		Reserved for customer enhancements

Integration

As few fields as possible were added to this table to enable evaluations of large amounts of data to be carried out. All other data pertaining to the original values are transferred in the table RESULTS_ADDITIONAL_DATA. In Customizing for QM, there is a checkbox *Do not transfer RESULTS_ADDITIONAL_DATA table* to deactivate the transfer of additional data.

Please note that, depending on the Customizing settings, incomplete samples and their original values may not be transferred.

Fields

The individual fields of the table are described here in more detail:

- **REPORT_NO**
Number of the evaluation.
- **CHAR_NO**
Number of the characteristic.

Table of Quantitative Original Values

- **CHAR_VERS**
Number of the characteristic version.
- **SAMPLE_NO**
Number of the sample.
- **RES_NO**
Contains the number of the individual result within the sample.
- **RES_NO_C**
Contains the number of the individual result within the characteristic. The numbering is continued via characteristic versions.
- **INSP_DATE**
Contains the inspection date.
- **INSP_TIME**
Contains the time of inspection.
- **RES_VALUE**
Contains the quantitative individual result.
- **RES_ATTR**
Attribute of the individual result in coded form. The text for this is found in the RESULTS_ADDITIONAL_DATA table. The validity of the result is found in the RES_INVALID field.



The attributes are defined for QM in domain QATTRIBUT. The following entries currently exist:

RES_ATTR	RES_INVALID	ATTR_TEXT
		The result is valid.
&	X	Error occurred during results transfer from the system.
*	X	Value marked as an outlier. Result is invalid.
/	X	The result is invalid.
<		Exact value is smaller than indicated. Result is valid.
>		Exact value is greater than indicated. Result is valid.
?		Value was estimated. Result is valid.
A	X	Error in the formula. Help characteristic is unsuitable.
B	X	Error in the formula. Help characteristic not found.
C	X	Syntax error in the formula.
D	X	Help characteristic in the formula has the wrong format.
E	X	Error during help characteristic value transfer.

F	X	Arithmetical error during the formula calculation.
G	X	Not all requested individual results were calculated.
H	X	Error during single unit calculations of the formula.

- **RES_INVALID**

Contains information on whether the result is valid or invalid.

RES_INVALID = 'X'	Result is invalid
RES_INVALID = ' '	Result is valid

You can activate a checkbox in Customizing that ensures that invalid results are not transferred.

- **ERR_CLASS**

Contains the defect classes. Defect classes can be freely defined in Customizing for *Quality Management*. The text for the defect class is transferred in the RESULTS_ADDITIONAL_DATA table.

- **USERC1**

This field is reserved for customer enhancements and is not used by SAP.



You can use SAP enhancement QIST0009 to influence the creation of entries for this table. The customer function is called after the data fields are filled. In this way, you can either modify the contents of the data fields or fill the user fields. The key fields are not filled at this point and cannot be changed.

Table of Additional Data for the Original Values

Use

This table contains additional information regarding the original value.

Table: RESULTS_ADDITIONAL_DATA - Additional Data for the Original Values - BAPIQMSTI8

KEY	FIELD	TYPE	LENGTH	OPT	DESCRIPTION
X	REPORT_NO	NUMC	4		Number of the evaluation
X	CHAR_NO	NUMC	4		Number of the characteristic
X	CHAR_VERS	NUMC	4		Version of the characteristic
X	SAMPLE_NO	NUMC	8		Number of the sample
X	RES_NO	NUMC	8		Number of the results for the sample
X	RES_NO_C	NUMC	8		Number of the results for the characteristic
	INSPECTOR	CHAR	20		Name of the inspector
	EXTERN_NO	CHAR	18	X	External number
	RES_REMARK	CHAR	40	X	Inspection description for the individual values
	CREAT_DATE	DATE	8		Creation date
	CREAT_TIME	TIME	6		Time of creation
	CHNGE_DATE	DATE	8	X	Change date
	CHNGE_TIME	TIME	6	X	Time of change
	ERR_CL_TXT	CHAR	40	X	Text for the defect class
	ATTR_TEXT	CHAR	40	X	Text for the attribute
	RES_ORG	CHAR	2	X	Data origin
	RES_ORG_T	CHAR	40	X	Text for the data origin
	USERC1	CHAR	10		Reserved for customer enhancements
	USERC2	CHAR	20		Reserved for customer enhancements
	USERC3	CHAR	40		Reserved for customer enhancements

Fields

The individual fields of the table are described here in more detail:

- **REPORT_NO**
Number of the evaluation.
- **CHAR_NO**

- Number of the characteristic.
- **CHAR_VERS**
Number of the characteristic version.
- **SAMPLE_NO**
Number of the sample.
- **RES_NO**
Contains the number of the individual result within the sample.
- **RES_NO_C**
Contains the number of the individual result within the characteristic.
- **INSPECTOR**
Name of the inspector.
- **EXTERN_NO**
External number of the inspection result.
- **RES_REMARK**
Inspection description of the original value.
- **CREAT_DATE**
Date of creation of the original value record in QM.
- **CREAT_TIME**
Time of creation of the original value record in QM.
- **CHNGE_DATE**
Date of last change to the original value record in QM.
- **CHNGE_TIME**
Time of last change to the original value record in QM.
- **ERR_CL_TXT**
Text for the defect class (ERR_CLASS) in the logon language. The defect class of the inspection result is transferred in the original value record.
- **ATTR_TEXT**
Text for the attribute (RES_ATTR). The attribute itself and the validity of the result are transferred in the original value record.
- **RES_ORG**
Data origin in coded form.
- **RES_ORG_T**
Text for the data origin in the logon language.
- **USERC1, USERC2, USER C3**

Table of Additional Data for the Original Values

These fields are not used by QM. They can be used however in customer enhancements to transport additional data.



You can use SAP enhancement QIST0008 to influence the creation of entries for this table. The customer function is called after the data fields are filled. In this way, you can either modify the contents of the data fields or fill the user fields. The key fields are not filled at this point and cannot be changed.