# Data Quality

Always the right data at your fingertips
with CAS genesisWorld

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**July 2013**

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# 1 Basics

Customers – and therefore customer data – are key assets of any business. Data quality – and in particular the quality of address data – is increasingly being seen as critical to business success. Most of the data processed by businesses is address data. It is the foundation of efficient and successful customer relationship management, invoicing, cost calculation, analysis and so on. But data is only useful if it is correct. Address data, especially, ages rapidly. Over a million items of business data change every year in Germany alone, due to changed company names, new management personnel, relocation, insolvency, and so on. In fact, a quarter of all company data records are incorrect.[1]

In view of this, it is essential for companies to give due consideration to the issue in order to ensure good data quality. A one-off cleansing is not enough; data must be regularly updated. It is important to establish structures and processes which safeguard data quality. But how is data quality achieved?

Firstly, a wide range of organizational measures can be implemented – from the drafting of process specifications to the appointing of a Data Quality Representative.

Secondly, on a technical level, state-of-the-art CRM/XRM software helps businesses administer their data in a professional manner.

This guide demonstrates how CAS genesisWorld can be used to ensure that all data – from addresses, through projects to sales leads – is properly collected and efficiently processed.

## 1.1 What is data quality?

A single definition of the term "data quality" is difficult.

Wikipedia defines information quality – synonymously with data quality – as follows:[2]

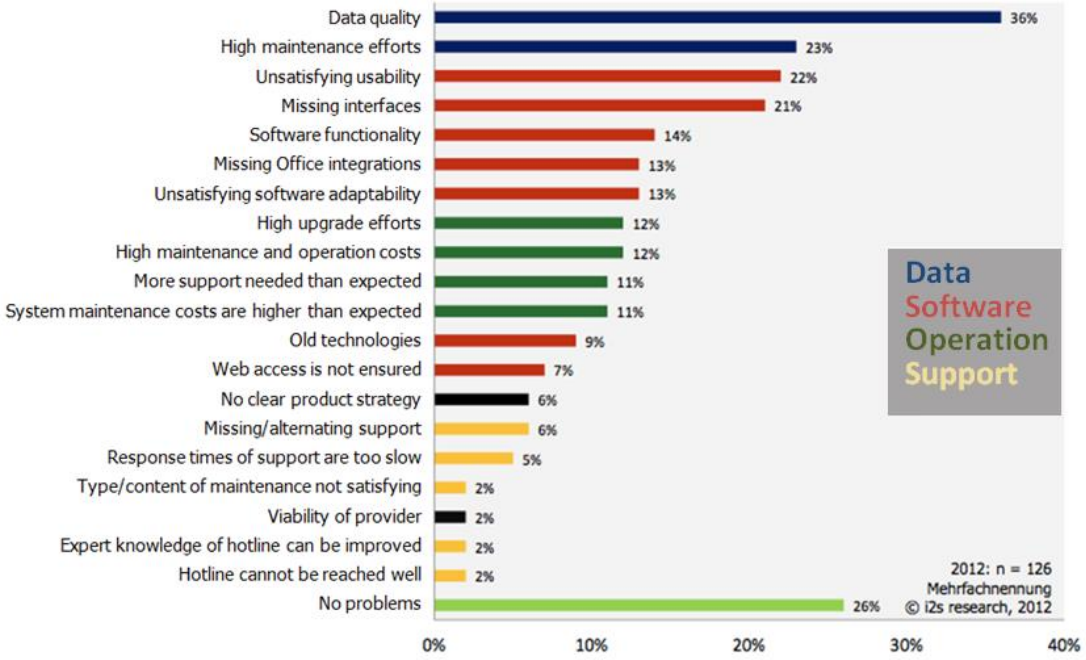
"The fitness for use of the information provided." It describes how well suited information (or data) is to describe reality – that is to say, to what extent it presents a model of actual situations. It indicates in particular how reliable information is, and to what extent it can be used as the basis for planning action.

This definition indicates that data quality (information quality) is defined on the basis of various criteria. Relevance, correctness and accuracy, for example, are key criteria. This approach – defining specific criteria – is detailed further in section 1.3.

[1] bedirect study: Address data quality as a factor in business success (2012)
[2] http://en.wikipedia.org/wiki/Information_quality – Accessed on Oct.15, 2013

## 1.2 Why data quality?

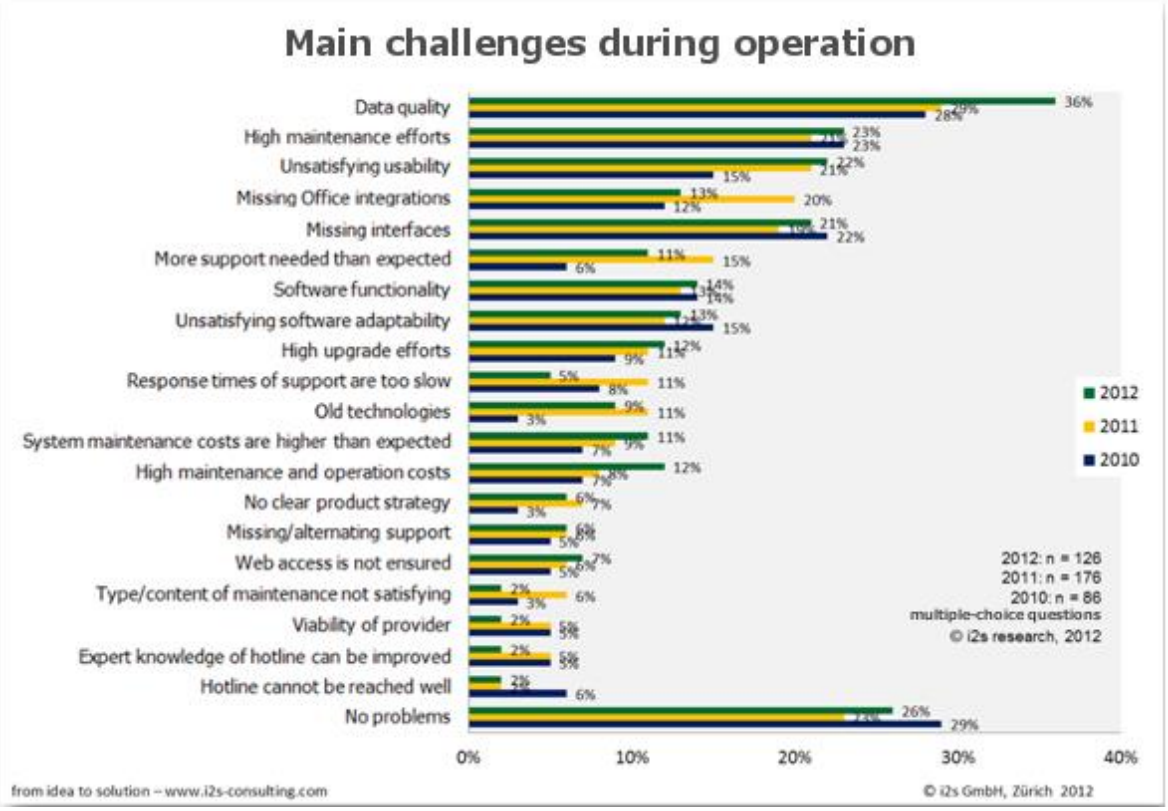
Why should companies be concerned about data quality? According to a 2012 study by i2s consulting,[3] data quality is the main problem when operating CRM systems. And the trend is rising, as the following charts show.




A study by bedirect[4] found that 24 % of all addresses in company databases contained errors. The consequences of outdated or incorrect addresses are:

- ☐ Loss of revenue due to customers not being supplied
- ☐ Money being wasted on correcting data
- ☐ Damage to corporate image
- ☐ Infringement of privacy and civil rights
- ☐ Incorrect evaluation
- ☐ Marketing & Sales: Additional cost due to returns, mailshot wastage, and so on
- ☐ Inefficiency in communications with customers and potential leads
- ☐ Strategic decision-making errors and misjudgment of the customer base
- ☐ Insolvency due to unexpected payment defaults

[3] http://www.i2s-consulting.com/
[4] bedirect study: Address data quality as a factor in business success (2012)




The subject of data quality is therefore key to any business.

## 1.3 Criteria for good data quality

In an article in "Computerwoche"[5], the leading German magazine for the ICT market, on October 12, 2012, Martin Bayer defined the following criteria for good data quality:

- ☐ Correctness: the data must conform to reality.
- ☐ Consistency: a data record must not be inconsistent in itself or in relation to other data records.
- ☐ Reliability: the origins of the data must be traceable.
- ☐ Completeness: a data record must possess all necessary attributes.
- ☐ Accuracy: the data must be as precise as specified, including with regard to the number of decimal places.
- ☐ Actuality: all data records must conform to the latest state of the reality being mapped.
- ☐ No redundancy: there must be no duplicates within the data records.
- ☐ Relevance: the information content of data records must meet the relevant need.

[5] http://www.computerwoche.de/a/gute-daten-schlechte-daten,1931857

- ☐ Uniformity: the information content of a data record must be uniformly structured.
- ☐ Uniqueness: each data record must be capable of unambiguous, unique interpretation.
- ☐ Comprehensibility: the data records must conform to the terminological and structural needs of the specialist departments."

Meeting these criteria poses an enormous challenge for businesses. Yet they are ultimately the key to success, saving costs and ensuring process safety.

Section 2 demonstrates how these criteria can be met using CAS genesisWorld.

# 2 Support from CAS genesisWorld

This section demonstrates how you can use CAS genesisWorld to meet the challenges posed. The functions presented embody ideas and suggestions which should be adapted and combined specific to the company, its needs and goals.

## 2.1 General data quality

The quality of general (CRM) data relates to projects, tasks, appointments or sales leads for example. The quality of addresses is considered separate in section 2.2.

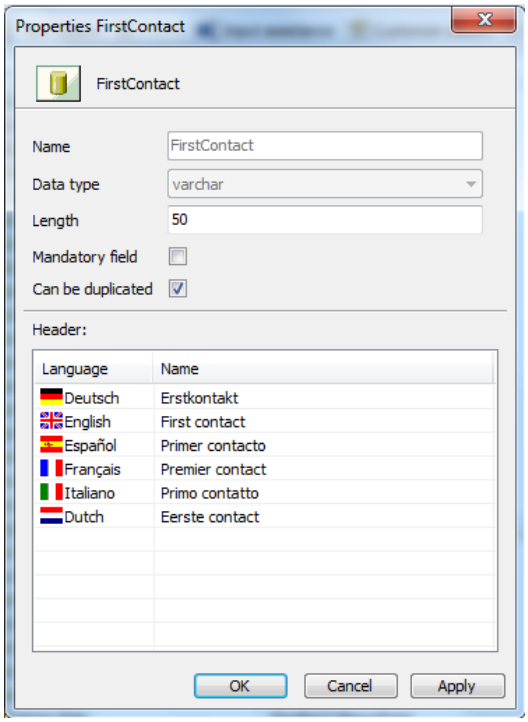
The following sets out functions of CAS genesisWorld which enable you to ensure precise and complete collection and maintenance of data in your CRM system.

### 2.1.1 User-defined fields

Custom user-defined fields are key requirements for a CRM system. CAS genesisWorld incorporates them as a matter of course. User-defined fields allow you to customize addresses, projects and so on according to your needs, enabling you to fully record all fields of relevance for you.

- ☑ Create an address field named **First contact** as shown in the screenshot for example. In this field you record when your company first contacted the customer.

  This enables you to reliably trace when and how specific items of data were created. This may be relevant in meeting some documentation obligations.




User-defined fields meet the criteria of **completeness** and **reliability** of data.

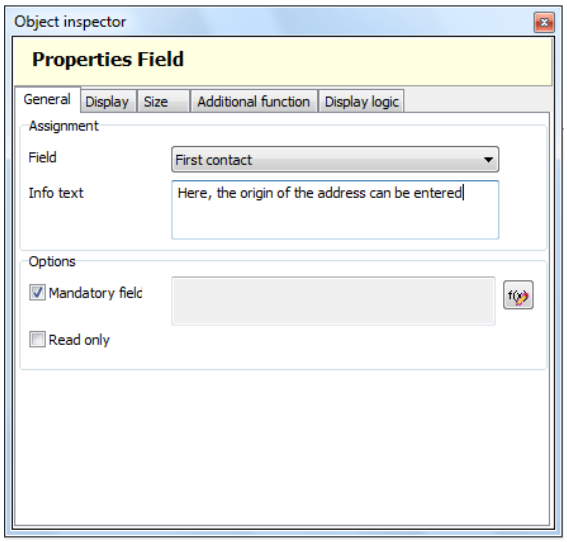
## 2.1.2 Mandatory fields

Some information has to be collected and stored in compliance with legal requirements. Data protection laws, for example, stipulate that the origin of an address, and any forwarding of it, must be documented. It may also be important to assign a designated person to handle a specific task, or to enforce a budget on a project.

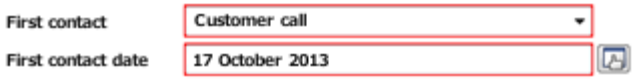
CAS genesisWorld offers the facility to specify fields as mandatory. They may be static, meaning always mandatory, or dynamic, meaning mandatory dependent on context.

☑ As shown in the Form Designer screenshot, in the **First contact** field check the **Mandatory field** option.

This sets the field as permanently mandatory. This is useful for all fields which always have to be filled out regardless of context, as in the example.



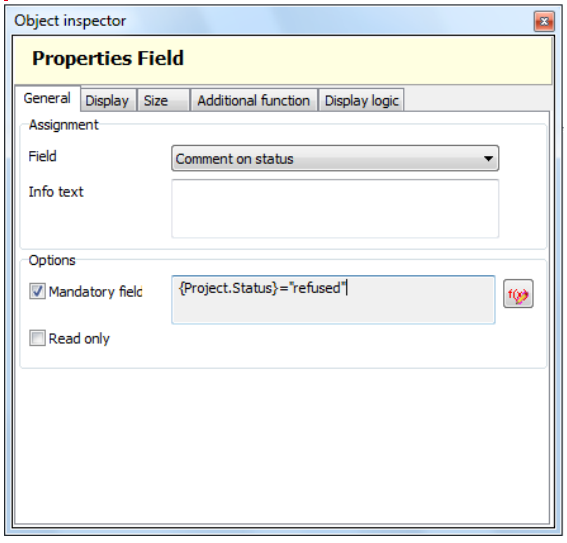

The following screenshot shows how mandatory fields are displayed in the Windows Client. When a new data record is created or changed, it cannot be saved until all mandatory fields have been filled out.




In some cases a field might only be set as mandatory under certain preconditions. In the case of a project with the status **refused**, for example, the **Comment on status** field might have to be filled out.

- ☑ To stipulate that a field is only set as mandatory under certain preconditions, use the Form Designer **Mandatory field** option as for a static field.
- ☑ But then add a condition in the form of a formula. If this formula condition is met, the field automatically becomes mandatory; otherwise not.

> Mandatory fields meet the criterion of **completeness**.



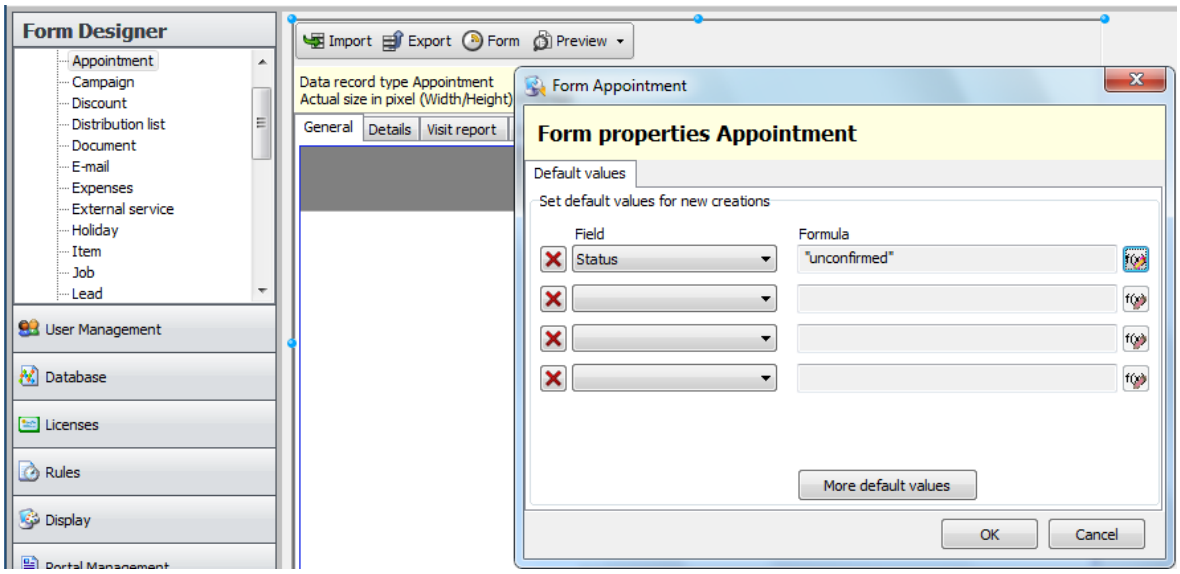
## 2.1.3 Pre-assigned fields

It may be important, and helpful, to assign new data records default values. This avoids the risk of leaving fields relevant to evaluations blank because employees forget to fill them out for example.

☑ In the Form Designer, click the **Form** button to define the default values you want to be automatically entered when creating a new data record.

In the example, all new appointments are assigned the status **unconfirmed**.

Pre-assigned fields meet the criterion of **completeness**.




## 2.1.4 Input assistance

CAS genesisWorld offers numerous ways of defining input assistance. Options are:

☐ Single selection list
Exactly one pre-determined entry can be selected. Manual input is not possible.

☐ Single selection list editable
Exactly one pre-determined entry can be selected. Manual input is possible.

☐ Checkbox list
Multiple pre-determined entries can be selected. Manual input is not possible.

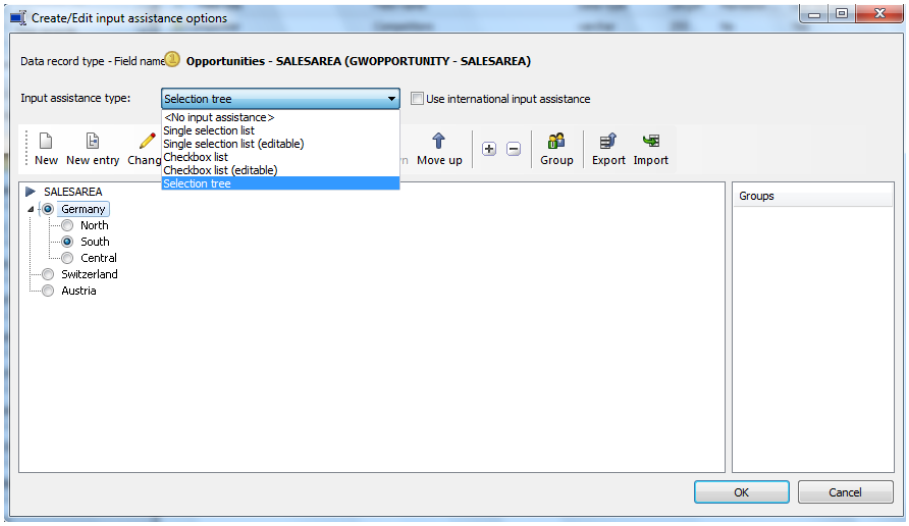
☐ Checkbox list editable
Multiple pre-determined entries can be selected. Manual input is possible.

☐ Selection tree
The selection tree provides hierarchical input assistance – pick list and/or multi-selection. Manual input is not possible.

Of particular interest here are the input assistance options which do not permit manual input, such as a single selection list, checkbox list and selection tree. This ensures that field values are only selected from a defined value range. This enables unique assignment and informative, comprehensive evaluation.

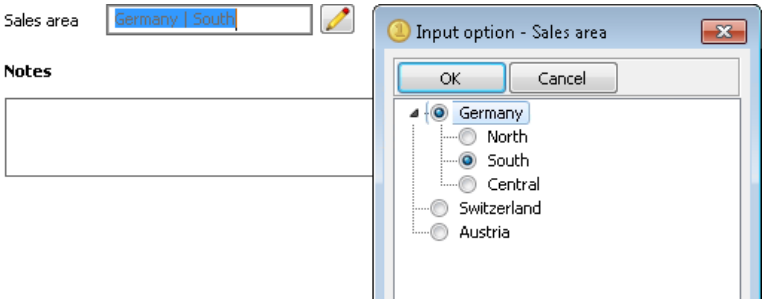
☑ Define a selection tree for the **Sales area** field under Sales opportunities.

Here "Sales area" is a previously created user-defined field.

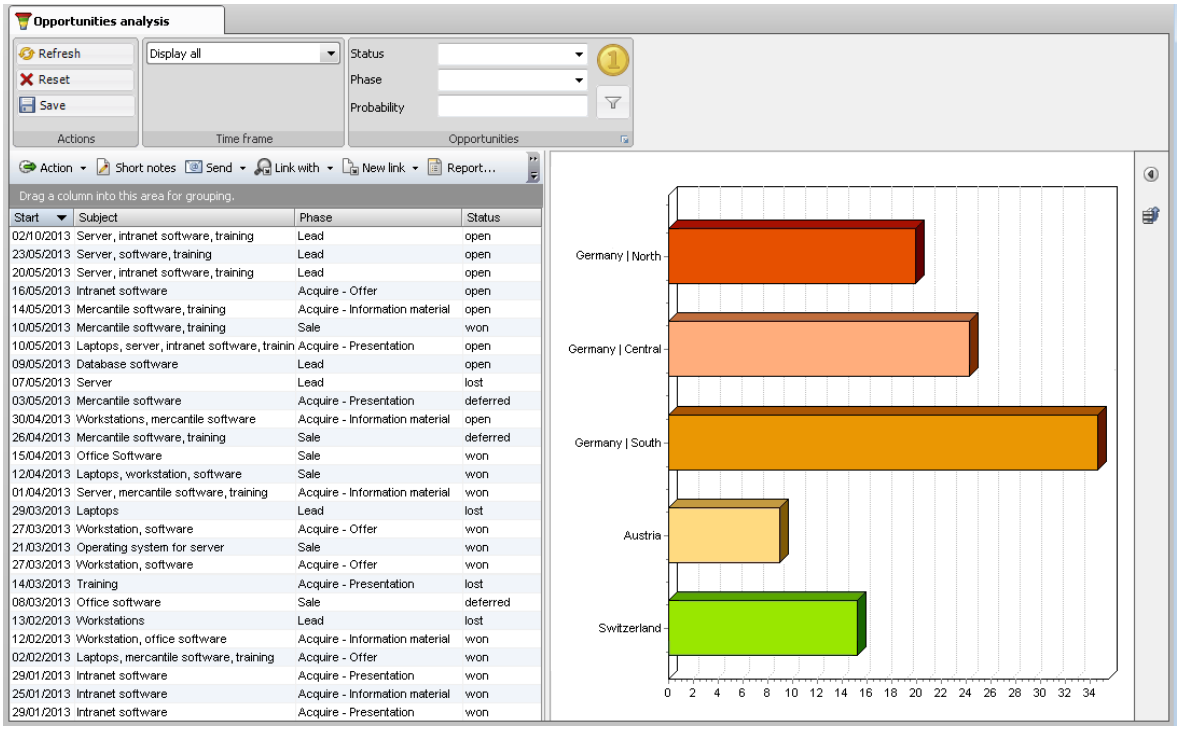



Users who fill out this field in the CAS genesisWorld Windows Client can only select one entry from the selection tree. Free input is not possible.

Input assistance meets the criterion of **uniformity**.




This ensures consistent, comprehensive evaluation.



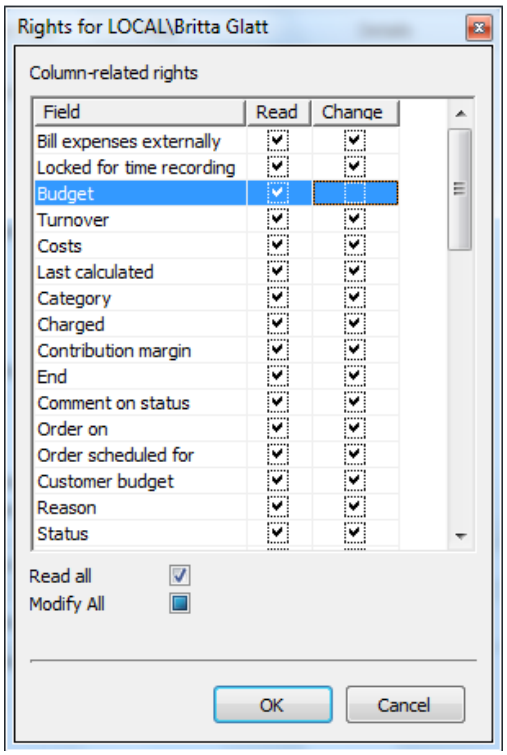

## 2.1.5 Rights system: Rights at field level

CAS genesisWorld features a detailed rights system mapping virtually all requirements of everyday business practice. Rights can be set, for example, to prevent specific people from seeing certain fields at all, and can see other fields but not change them. Or put the other way round: Certain fields may only be viewed and/or changed by a selected group of staff.

This prevents field values being changed unintentionally, or by employees without detailed knowledge.

☑ Restrict project rights, for example, so that specific financial fields, such as budget, sales turnover, costs and so on, can be viewed but not changed by some staff. Allow only management to make changes for example.

> Rights at field level meet the criterion of **correctness**.



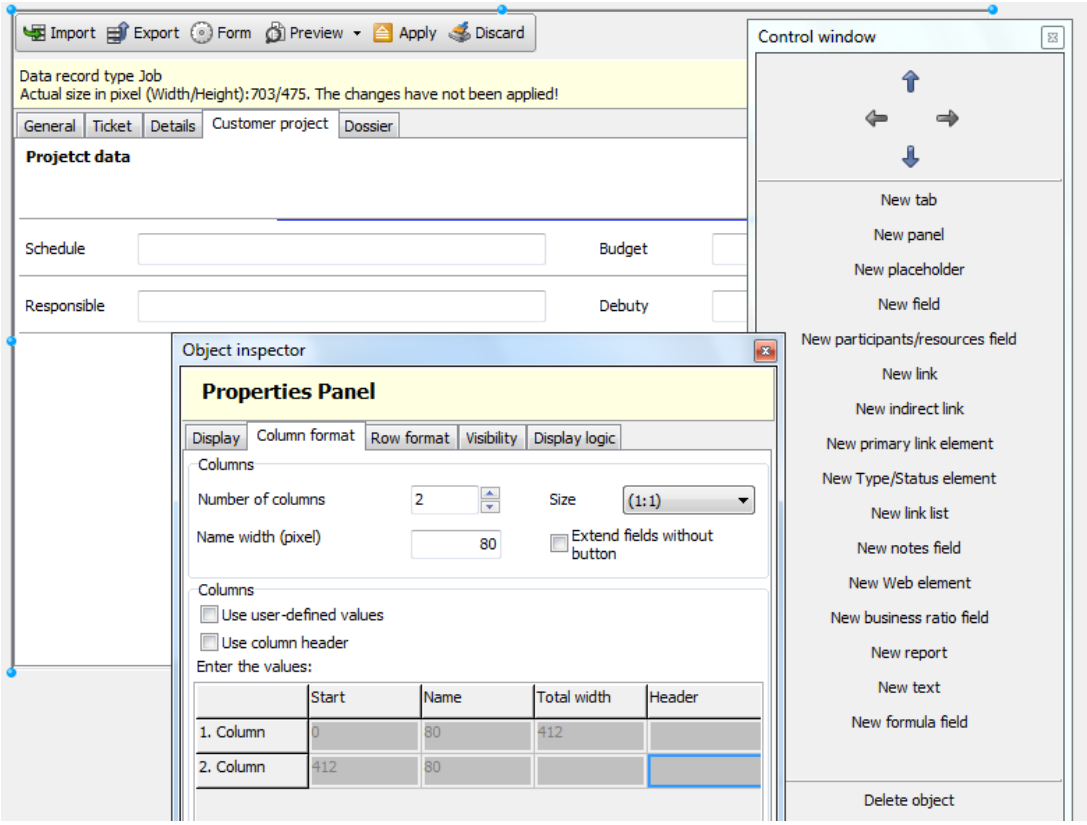

## 2.1.6 Customizable data record windows and tabs

With the CAS genesisWorld Form Designer, fields can be arranged freely within data record windows. New tabs can be created in order to group fields thematically. Tabs can be structured further with sections and placeholders. The appearance of the tabs, including the number of columns or their layout, can also be defined. A large number of elements ensure that you can display all required information in a tailored way. This aids quick and easy working with data records, in line with your business needs.

A particular benefit is the facility to show and hide tabs dynamically.

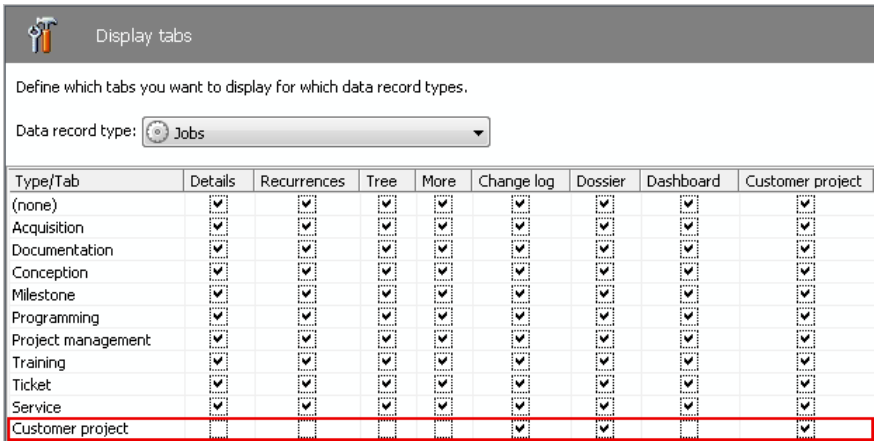
- ☑ Define different tabs for different application cases containing only the fields relevant to the specific application case.
- ☑ Also show or hide individual tabs dependent on type.

In the following screenshot a new type **Customer project** has been created for jobs. A tab of the same name bundles all fields and information relevant to customer projects. If a job becomes a customer project (production order) – by simply setting the type accordingly – only the **Customer project**, **Change log** and **Dossier** tabs are displayed. All other tabs are hidden.




This ensures that users focus fully on the concrete application case and are not confused and distracted by a lot of additional fields and information.

> Data record windows and tabs meet the criteria of **comprehensibility** and **relevance**.

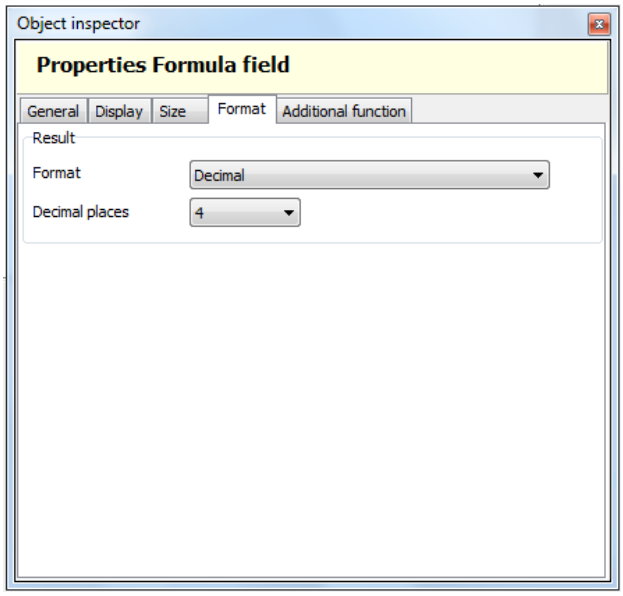



## 2.1.7 Formatting fields

Values should be entered as precisely as necessary. The Form Designer offers the facility to define different formatting for each field. This means, for example, formats such as decimals, text, dates etc. can be preset and the number of places for decimal fields or the date format can be specified.

☑ In order to record prices, dimensions and the like precisely, configure decimal fields with four decimal places.

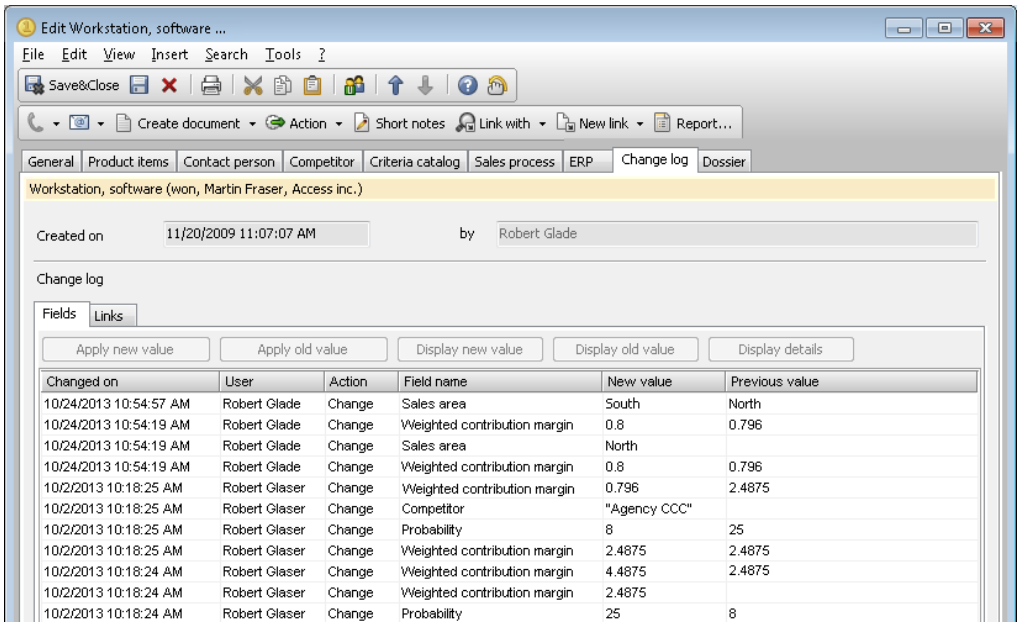
Field formats meet the criterion of **accuracy**.




## 2.1.8 Change log

The change log documents any changes to a data record, and is available for any data record type in CAS genesisWorld, including custom ones. The change log documents who created or deleted a data record when, and who changed which field with which value when. An undo function makes it very easy to cancel unintended changes.

The change log meets the criterion of **reliability**.



## 2.1.9 Notification and action service

The CAS genesisWorld notification and action service provides powerful workflow and process control and monitoring functionality. Data records can be monitored and checked for the occurrence of certain events. If such an event occurs,

- ☐ either someone can be notified by e-mail – via the notification service – or
- ☐ data records can be changed or new data records created – with the action service.

### Examples

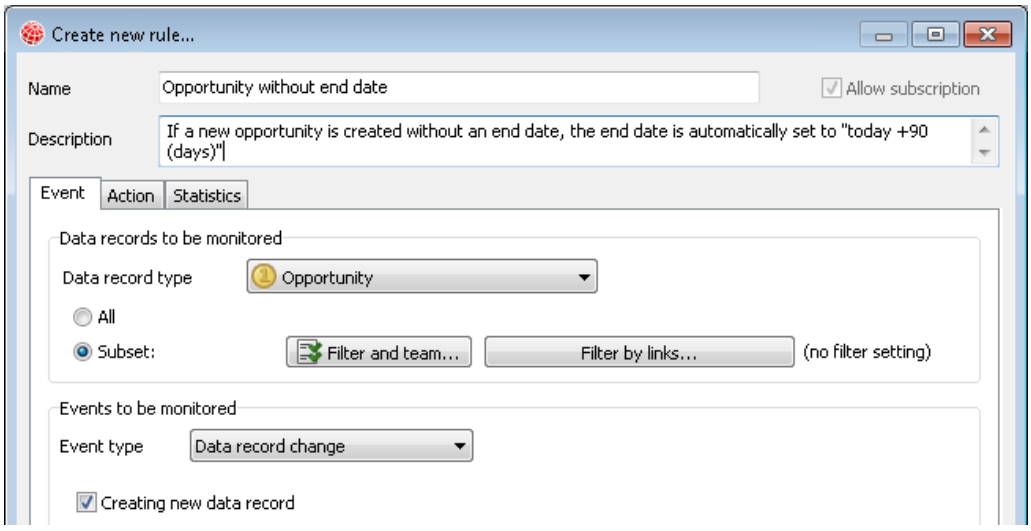
- ☐ Ensure consistency: If the payment method=direct debit is set and the bank details entry is blank, inform person X within the company.
- ☐ Check plausibility: If a bank sort code > 99999999 is entered, the Finance team is notified to check the entered values.
- ☐ Address data quality: When a customer address is changed, the Data Quality Representative receives an e-mail. He/she checks the changes to ensure that all addresses have been entered in accordance with the applicable rules.

### Example of action service

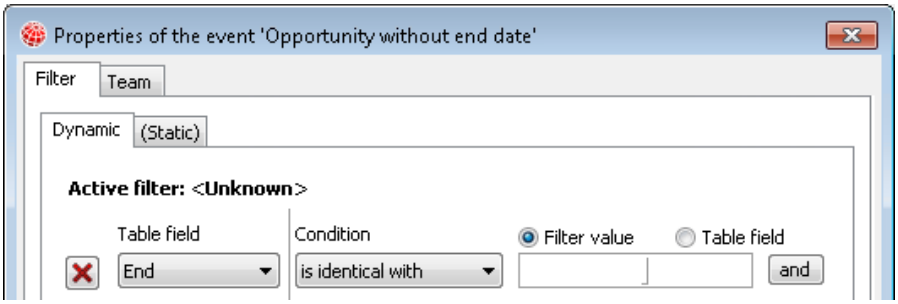
If the **End** field of a sales opportunity is not filled out, the field is automatically set to three months ahead.

Create a relevant rule in the notification and action service, for sales opportunities.

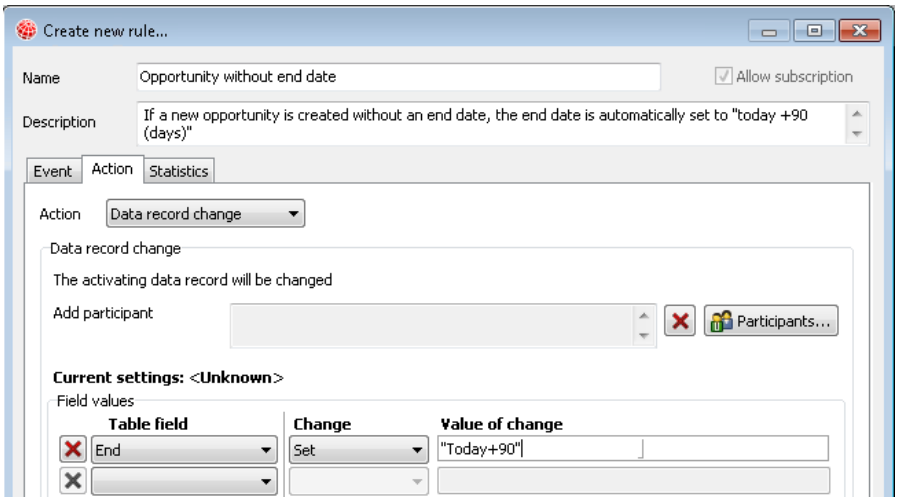
☑ First specify the event: Sales opportunities are monitored.




☑ Specify monitoring of only a subset, defined by a filter.

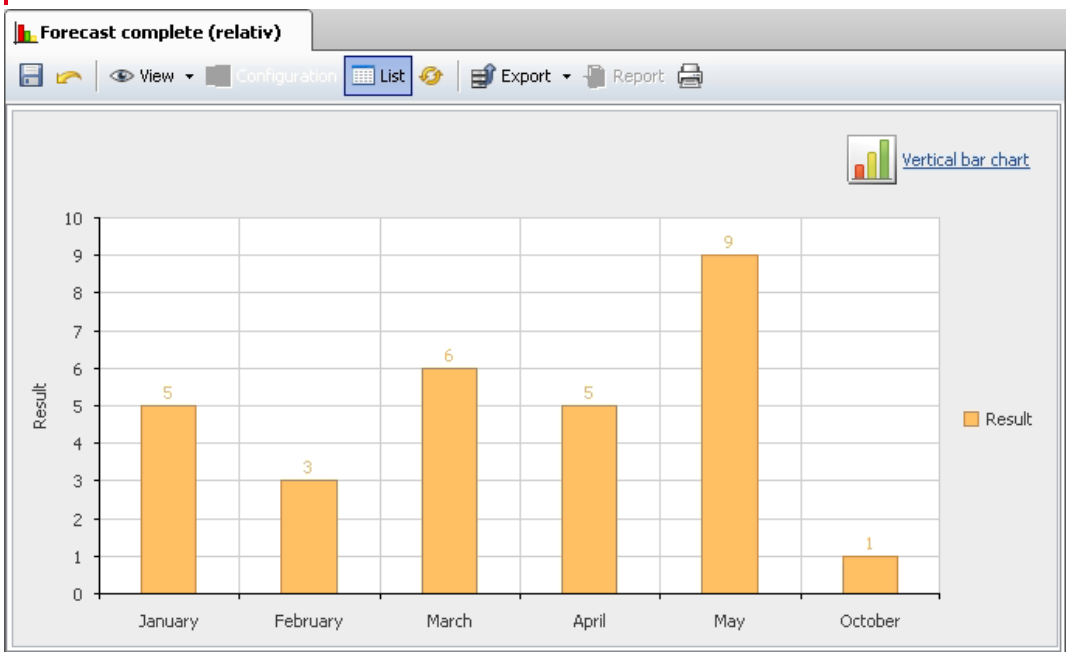



Then specify the action: in the case of the new sales opportunity with no value in the **End** field set the field to **Today+90 (days)**.




This ensures that a deadline is always set for all new sales opportunities. Consistent, comprehensive and realistic forecasting is made possible as a result.

> The notification and action service meets the criterion of **consistency**.

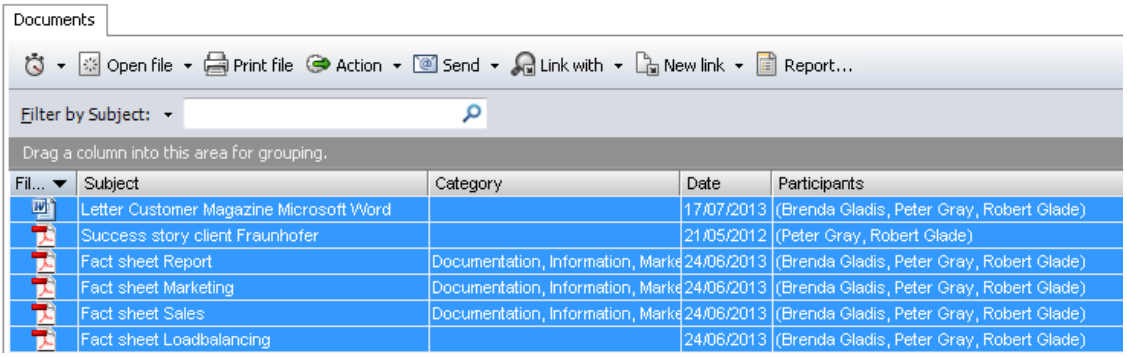


## 2.1.10 Actions

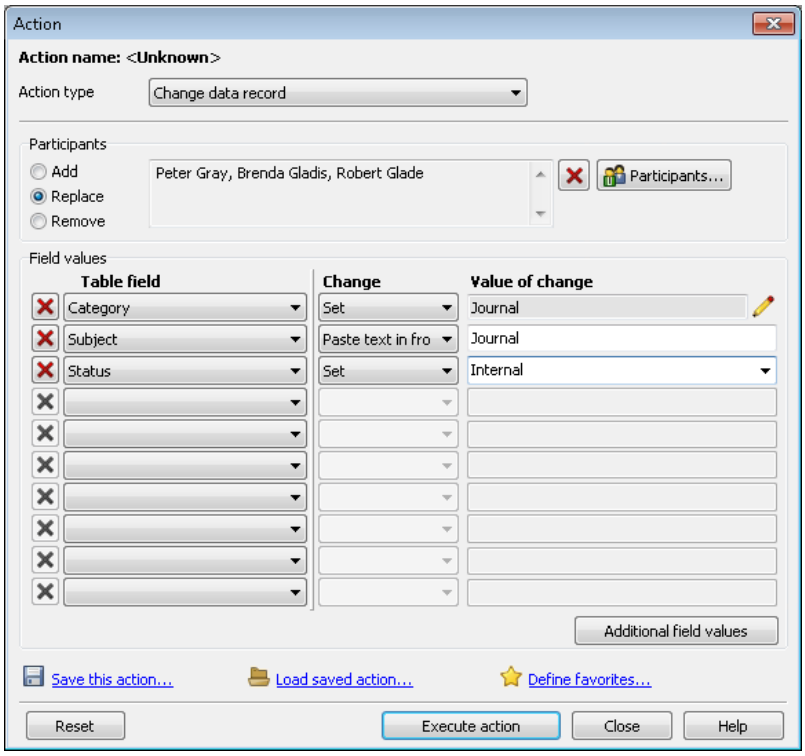
Sometimes requirements change, or a workflow is modified. Then existing data records should also meet the new conditions. For example, a new field is introduced for a data record type which is of course not yet filled out with inventory data. Or the category or some other attribute of data records of a specific type is to be changed.

So field values should be simultaneously set or changed by means of an efficient mechanism even in the case of multiple data records. CAS genesisWorld provides such a tool through so-called actions.

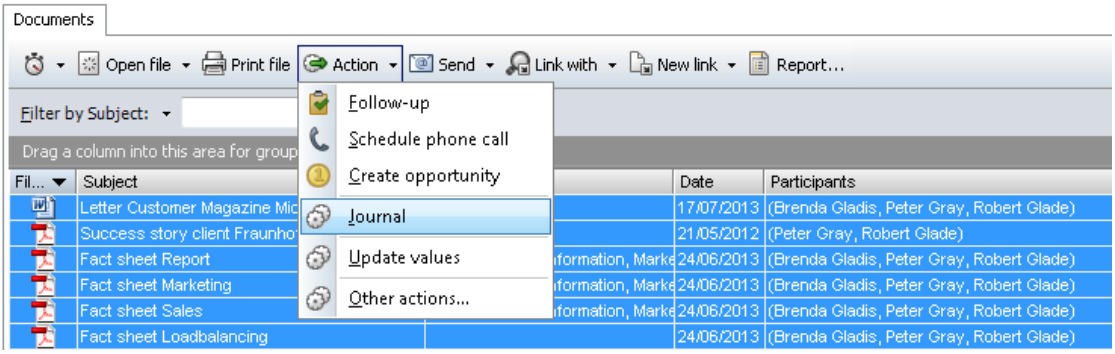
For example, you have a number of logs with widely differing update states: The keyword is inconsistent, important fields such as the category, document language and status are missing, and the participants are likewise inconsistent.




☑ To change multiple documents in line with your wishes and corporate rules, define an action.

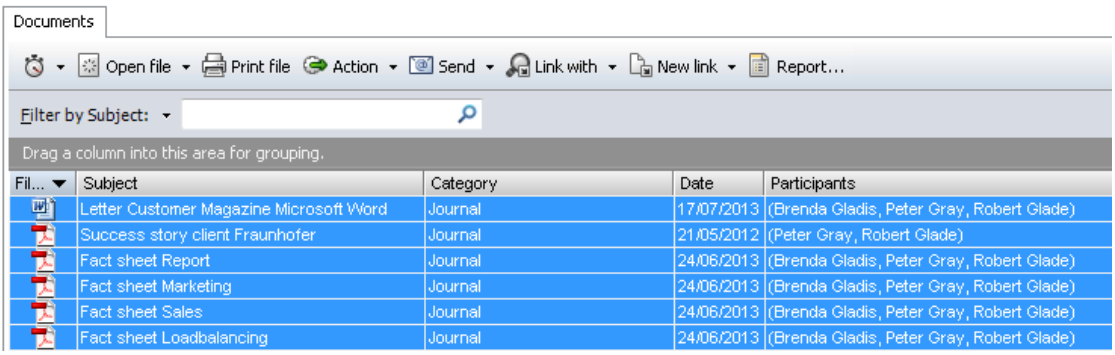


- ☑ At the same time you change multiple field values in the case of multiple data records here: The category, document language and status fields are set. Each keyword is prefixed by **Log:** and the participants are entered in a uniform way.
- ☑ Then you call the action in the document list for example. In the example only marked data records are changed. Alternatively, you can also view the data records to be changed based on a search or in a list.




The result is consistent documents.

> Actions meet the criteria of **completeness** and **uniformity**.

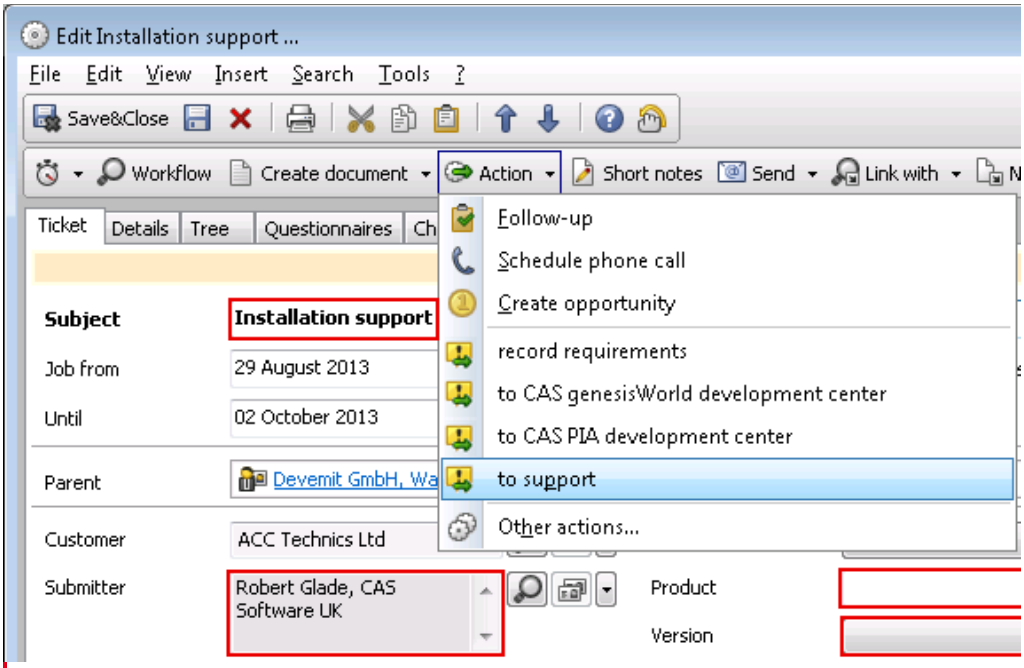


### 2.1.11 Helpdesk module: Ticket actions

The CAS genesisWorld Helpdesk module helps you to provide professional service and support within your company. A key demand in this context is to process support requests quickly and efficiently. In particular, it must be possible to transmit support requests smoothly between company staff. To do so, the Helpdesk module features so-called ticket actions, which are roughly comparable to the actions described in section 2.1.10.

Ticket actions link a number of data record changes. These may be changes to field values, or to participants. When a ticket action is executed, all changes are made at once.

A major advantage of such ticket actions is that they reduce the risk of human error, such as failing to fill out key fields. Process errors are effectively eliminated. Tickets are always assigned a uniquely identified person to handle them for example. Ticket actions additionally enable newly recruited staff to be inducted more quickly, and also save time in day-to-day operations.




Ticket actions meet the criteria of **completeness** and **uniformity**.

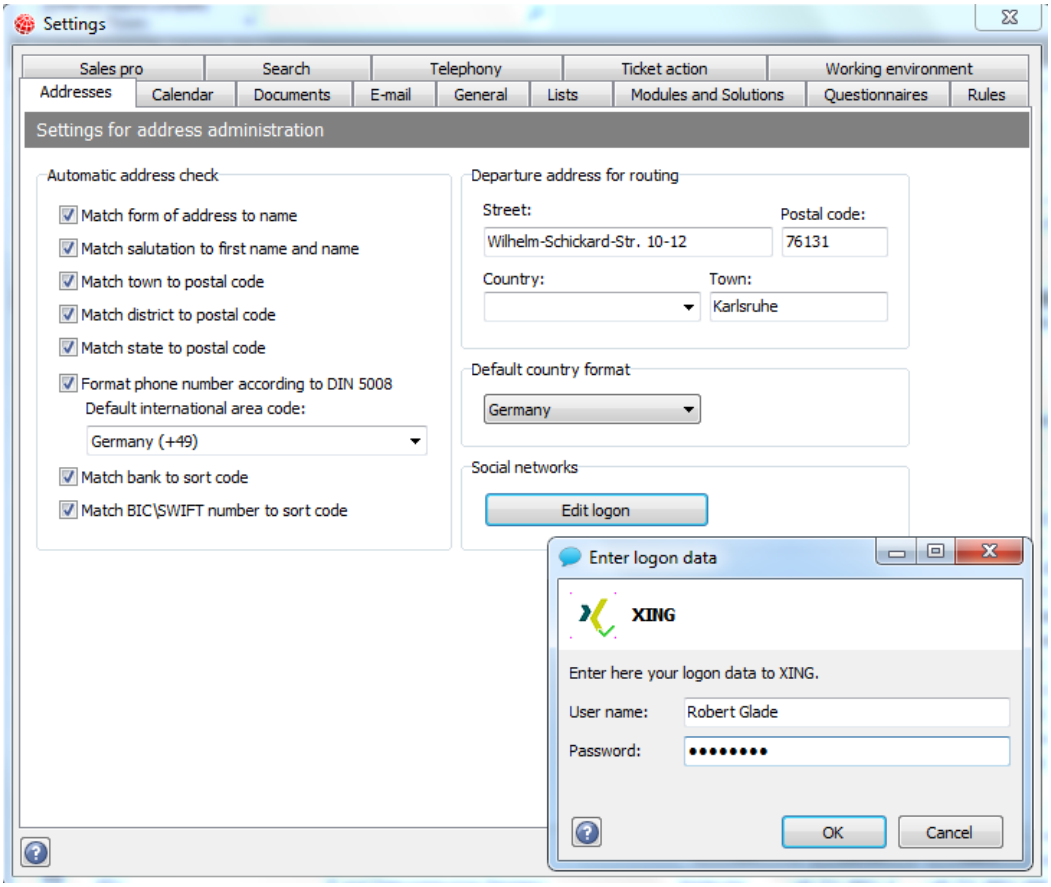
## 2.2 Address data quality

The aforementioned methods of assuring the quality of general CRM data can also be applied to address data. Special additional functionality is available for addresses however.

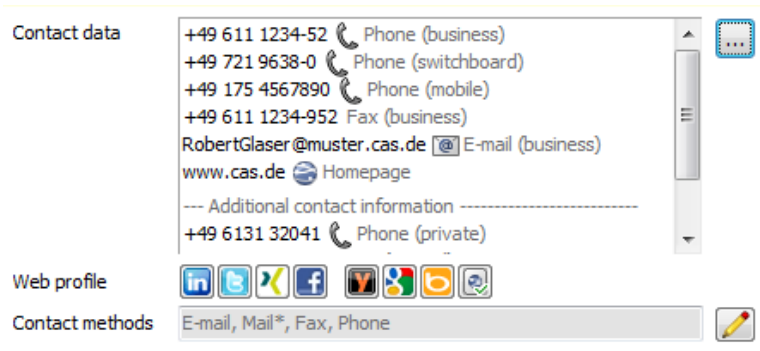
## 2.2.1 Social networks

CAS genesisWorld incorporates interfaces to various social networks. Users can save their login details for a range of social networks in their personal preference settings.

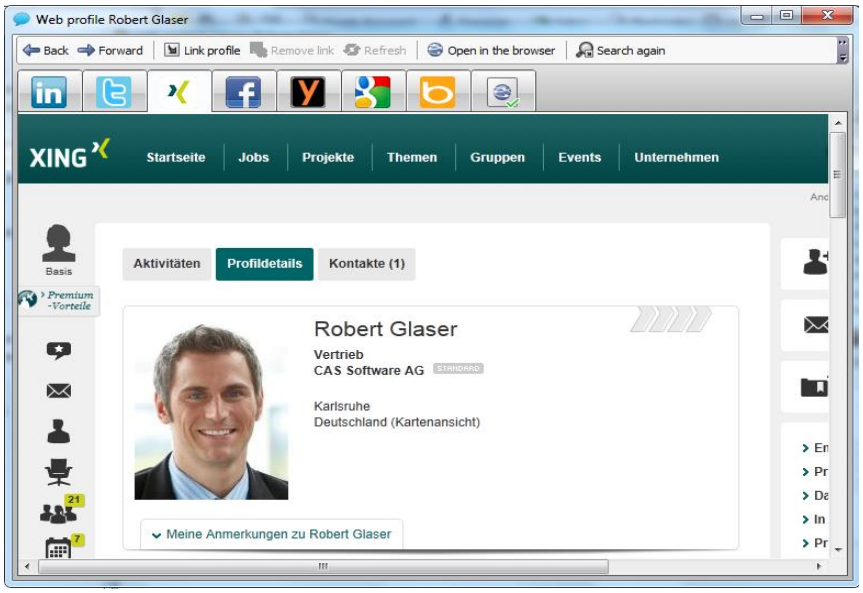
If a user is able to additionally access a contact within a social network, that link can also be made in CAS genesisWorld.




☑ Once the link has been made, a user can call up the contact profile in the network concerned at any time directly from CAS genesisWorld.



When doing so, only the information which the contact has disclosed to a user through the social network is displayed. In particular, the information from the social network is not stored in CAS genesisWorld, and so may show different content for different users.

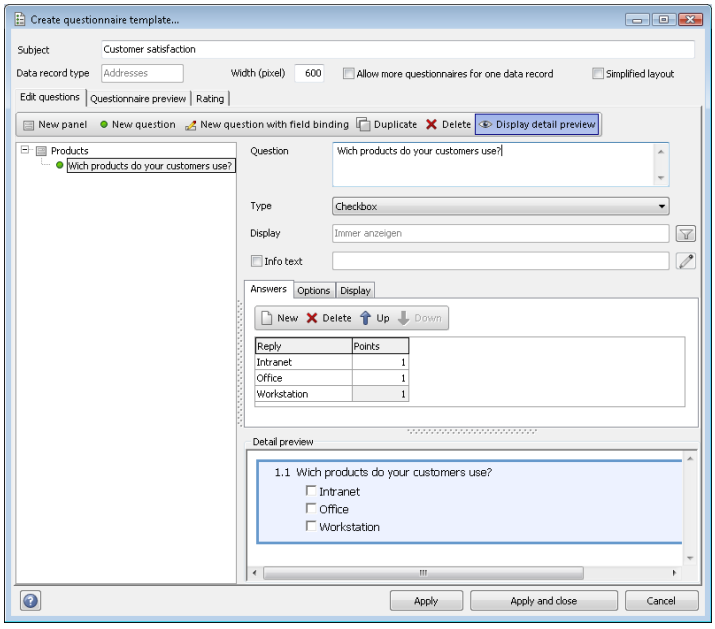



One of the advantages of this linkage is that contacts maintain and update their information in the social networks themselves. Variations from the data in CAS genesisWorld can be easily detected and eliminated as necessary.

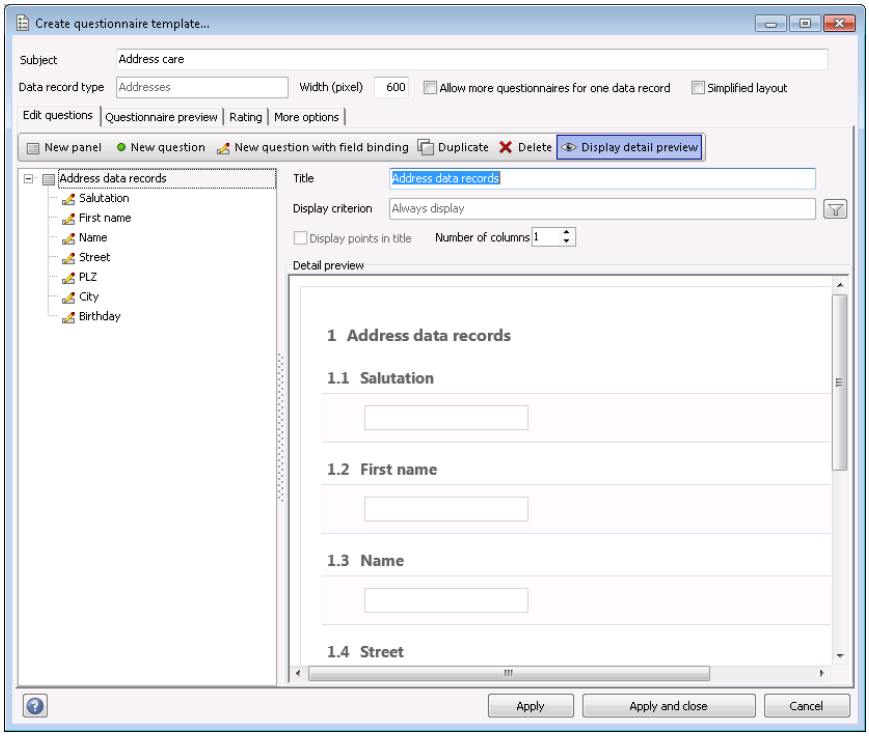
> The link to social networks meets the criteria of **correctness** and **actuality**.

## 2.2.2 Survey module for address maintenance

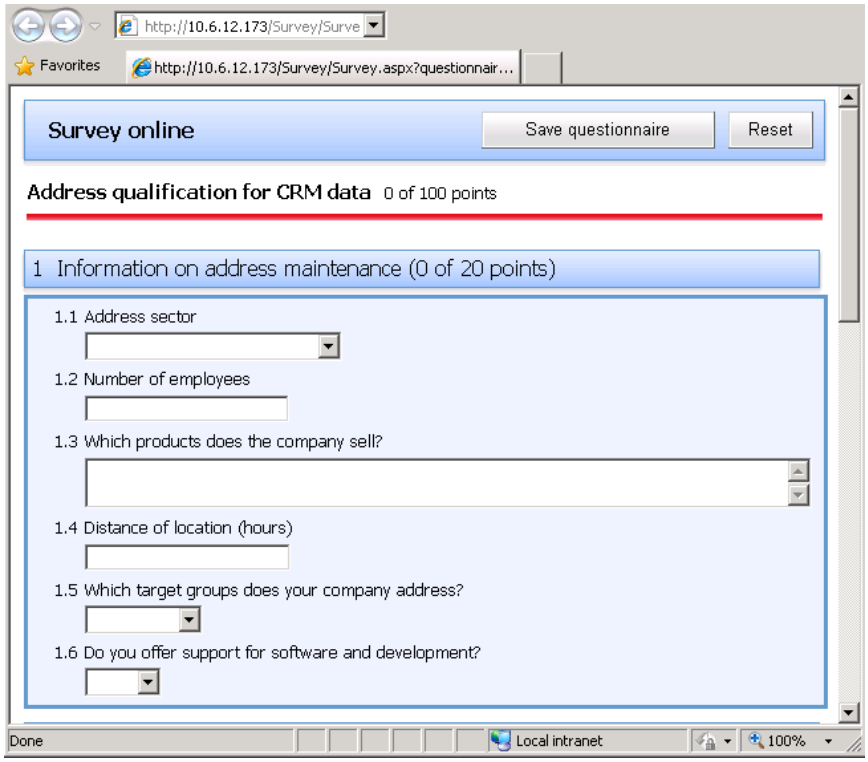
Survey is a module for CAS genesisWorld used typically to conduct surveys.



They may provide feedback on a customer event, rating of a service rendered, or the like. The Survey module is well suited to structured data acquisition too. Forms can be created to document purchase orders, claims, visit reports and the like. A form allowing key address data to be viewed and maintained is also conceivable. A particular advantage of this is that customers can view and correct their own data if they wish.




☑ Define an address form for example, using the so-called "Questions with field binding".



You can then make the form available to any customer, sending a custom link to each in a personalized e-mail. The link opens up the customer's personalized form in a web browser. Customers can then check their data and correct it as necessary.
This not only provides correct data, but also reduces staff commitment for address maintenance. Moreover, it enables the company to present itself as a modern, transparent, customer-friendly organization.

> The Survey module meets the criterion of **correctness**.

### 2.2.3 "forum!" module measures customer loyalty

Desirable aims in assuring fruitful business for all the parties involved are customer satisfaction and also customer loyalty. The "forum!" module measures overall satisfaction and feelings of loyalty based on a questionnaire.

The module was created in cooperation between CAS Software AG and market research company forum! Marktforschung GmbH. It enables you to identify

- ☐ dissatisfied customers,
- ☐ customers who might easily look to change supplier,
- ☐ customers who are "only" satisfied,
- ☐ and customers prepared to recommend your company to others.

Integration of the survey, its evaluation and presentation of the results delivers useful information from the CRM system's address data: How many of your customers might recommend you to others?

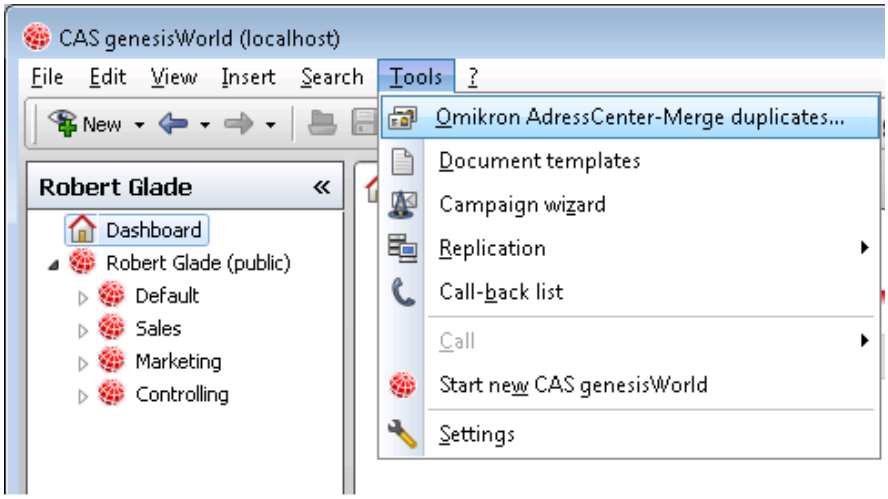
Which customers are loyal to you, and how strong is their loyalty? How can you enhance those customer relationships?

> Customer loyalty information meets the criterion of **relevance**.

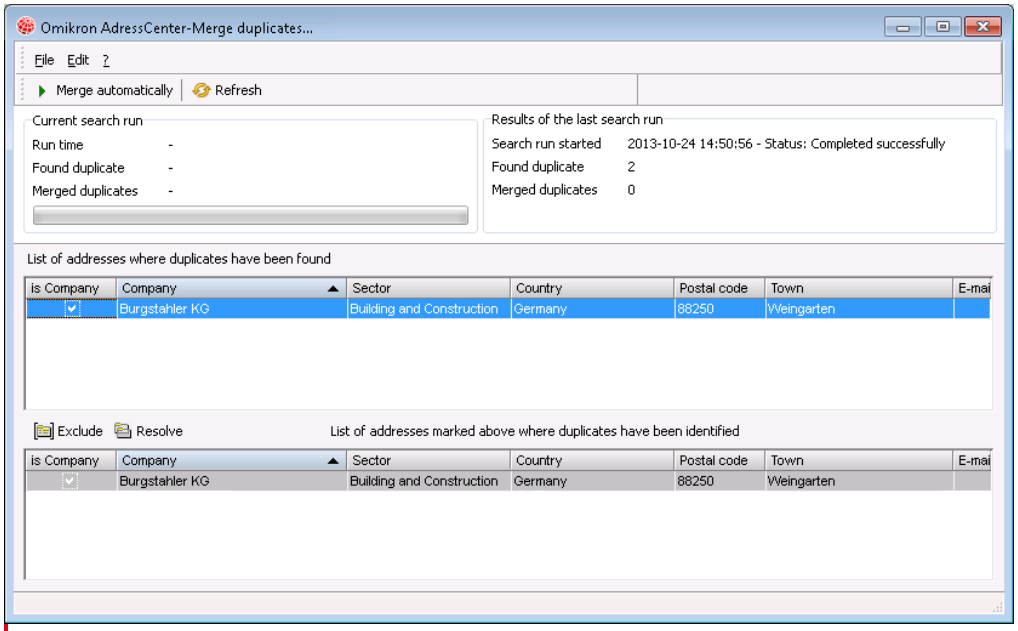
### 2.2.4 Duplicate check

A key concern in relation to address data quality is checking for duplicates. This is an area in which CAS Software AG has a strong partner, offering a powerful solution. The Address Center operated by Omikron Data Quality GmbH enables addresses from CAS genesisWorld to be checked for duplicates. The process is quite simple.

- ☑ In CAS genesisWorld you specify which addresses you want to check.
- ☑ In the Address Center you specify the relevant conditions – that is to say, how you want the check algorithm to identify duplicates.




☑ After the check, the duplicates found are displayed and can be easily eliminated from CAS genesisWorld.




The duplicate check meets the criterion of **no redundancy**.

## 2.2.5 ERP connect and other connectors

ERP connect is a CAS genesisWorld module by which addresses, receipts and products can be synchronized between CAS genesisWorld and an ERP system. Whereas receipts and products are typically transferred unidirectionally from the ERP system to CAS genesisWorld, addresses are often synchronized bidirectionally between the two systems.

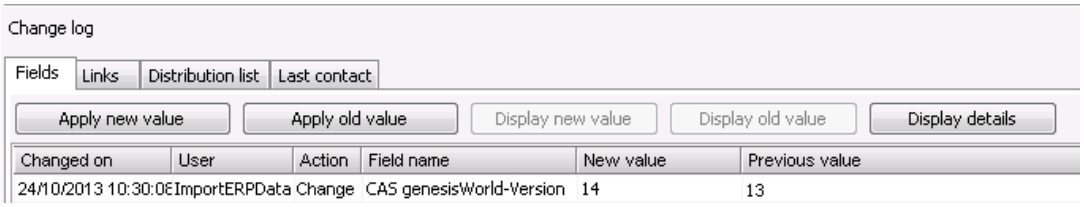
If a user changes the delivery address in CAS genesisWorld for example – after being notified by the customer by phone for example – the change is automatically synchronized

into the ERP system. This ensures that the next delivery note generated from the ERP system to the customer concerned will be sent to the correct address.

Conversely, changes within the ERP system flow back into CAS genesisWorld.

The change log of an address indicates, for example, that the **CAS genesisWorld version** field has been automatically updated in CAS genesisWorld by synchronization with the ERP system. Consistent data is available in both systems as a result.

> Connectors meet the criterion of **consistency**.




# 3 Conclusion

Data quality – and especially the quality of address data – is key to business success. High data quality provides a competitive edge, saves money, and avoids trouble. So the aim of every business must be to obtain "good" data.

A CRM system such as CAS genesisWorld

☐ allows you to meet those challenges

and

☐ relieves all staff from carrying out tedious but frequently recurring routine activities

and

☐ allows committed staff to focus on profitable processes throughout the company.

CAS genesisWorld offers lots of powerful functionality enabling you to achieve those goals. Each company can assess which of the measures might be beneficial within their own organization as a means of meeting their specific requirements. There is often more than one way to reach a goal. To ensure that all necessary fields in a data record are filled out, for example, mandatory fields, pre-assigned fields or automatic entry by the action service can be used. Multiple measures can of course also be combined – in fact, that is normally useful.

The following table sets out which measures are fundamentally suitable to meet which requirements/challenges. The criteria for good data quality set out in section 1.3 are key to this.

| | | | |
|---|---|---|---|
| Correctness | The data must conform to reality. | ✓ | ☐ Rights<br>see section 2.1.5<br>☐ Social networks<br>see section 2.2.1<br>☐ Survey module<br>see section 2.2.2 |
| Consistency | A data record must not be inconsistent in itself or in relation to other data records. | ✓ | ☐ Notification and action service<br>see section 2.1.9<br>☐ Connectors<br>see section 2.2.5 |
| Reliability | The origins of the data must be traceable. | ✓ | ☐ User-defined fields<br>see section 2.1.1<br>☐ Change log<br>see section 2.1.8 |
| Completeness | A data record must possess all necessary field values. | ✓ | ☐ User-defined fields<br>see section 2.1.1<br>☐ Mandatory fields<br>see section 2.1.2<br>☐ Pre-assigned fields<br>see section 2.1.3<br>☐ Actions<br>see section 2.1.10<br>☐ Ticket actions<br>see section 2.1.11 |
| Accuracy | The data must be as precise as specified, including with regard to the number of decimal places. | ✓ | ☐ Field formatting<br>see section 2.1.7 |
| Actuality | All data records must conform to the latest state of the reality being mapped. | ✓ | ☐ Social networks<br>see section 2.2.1<br>☐ Live access |
| No redundancy | There must be no duplicate addresses. | ✓ | ☐ Duplicate checking<br>see section 2.2.3 |

| | | | |
|---|---|---|---|
| Relevance | The information content of data records must meet the relevant need. | ✓ | ☐ Separate tabs - Show/hide dynamically see section 2.1.6<br>☐ Identifying satisfied and loyal customers see section 2.2.3 |
| Uniformity | The information content of a data record must be uniformly structured. | ✓ | ☐ Input assistance see section 2.1.4<br>☐ Actions see section 2.1.10<br>☐ Ticket actions see section 2.1.11 |
| Uniqueness | Each data record must be capable of unambiguous interpretation. | ✓ | ☐ Each data record in CAS genesisWorld has its own unique identifier (ID). |
| Comprehensibility | The data records must conform to the terminological and structural needs of the specialist departments. | ✓ | ☐ Customizable data record windows see section 2.1.6 |