Form & Database Designer

Customizing corporate data structure and interface

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Contents

1 Introduction

Using the Form & Database Designer you can extend CAS genesisWorld with new data record types. When new data record types are created for the CAS genesisWorld database they are subsequently available in all clients.

In addition, you can use the Form & Database Designer to customize the design of the data record windows in your Desktop Client so that they meet your requirements and are better adapted to your work processes. Likewise for the Desktop Client you can define functions using the Formula Editor so that they perform as you need them to, for example, for input values, the checking of input values and other processes in your company. Any customizing you perform for the data record window and changes you make using the Formula Editor will apply to the CAS genesisWorld Desktop Client.

Whereas for CAS genesisWorld Web and the Mobile Apps, you carry out customizations to the user interface and functions using the App Designer in CAS genesisWorld Web.

For more information see the Online Help for the App Designer.

Changes to the user interface in teamWorks are performed through forms in the **Portal** area of the Management Console.

When using the Form & Database Designer other modules and integrations may be affected. You can look up possible effects at hilfe.cas.de at **Working with several modules** on the Form & Database Designer.

Where can I find the functions?

The functions of the Form & Database Designer can be found in two areas of the Management Console.

- In the **Database** area, you can create additional fields and data record types.
- In the **Form Designer** are you can adapt the data record window and define functions using the Formula Editor.

1.1 Form Designer light - free

In the Standard Edition of CAS genesisWorld if you do not have a Form & Database Designer license, then you have the following options:

- You can create unlimited additional fields in the **Database** area for all data record types.
- In the **Form Designer** area you can insert an additional tab for each data record type.

- And per data record you can insert a total of up to 10 fields on to different tabs in the data record window.
- Additionally, you can add as many sections, placeholders and text elements as you wish.
- Creating a new data record type is also possible. The name of this new data record type in the Standard Edition of CAS genesisWorld is always **Test object**. The following settings are possible for this data record type:

  There are 2 options which can be used for this data record type on the **General** tab: **This data record type is user sensitive** and **This data record type is visible in CAS genesisWorld**. All settings can be adapted individually in the other tabs.
- You can customize the layout of additional tabs and the layout of additional fields on tabs in the Standard Edition, this applies to all data record types, for example, displaying new fields on the General tab with one or two columns.
- You can insert new names or descriptions into data records using titles for tabs and blocks, different field names and text elements so that they better suit your company's requirements.

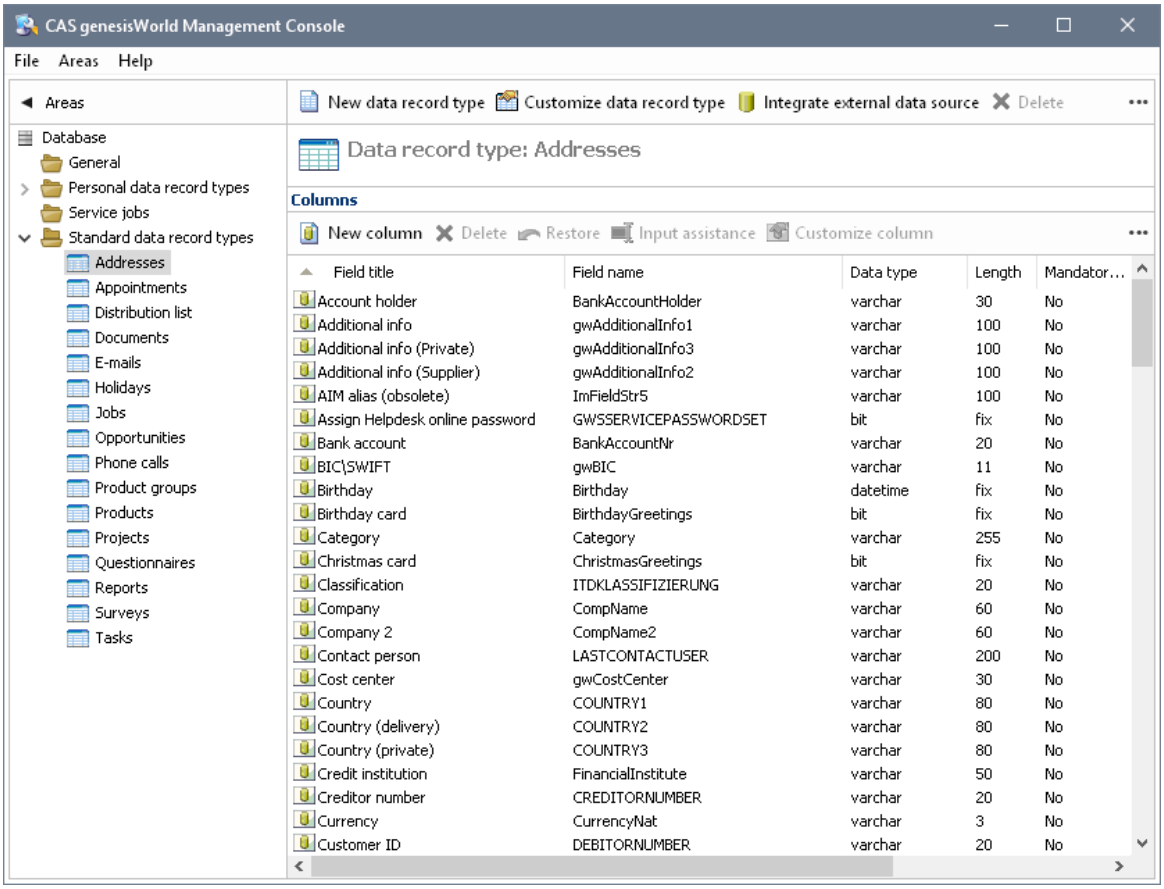
1.2 Entering licenses

You activate the functions for the Form & Database Designer via both the **Database Designer** and **Form Designer** licenses.

2 Creating your own data record types

With the Form & Database Designer any number of additional data record types are possible.

You create your own data record types and associated fields in the **Database** area of the Management Console. Almost all the same data record type functions which are available in CAS genesisWorld are available for your own data record types. This enables you to create, for example, names in different languages or rules.



2.1 Creating data record types - example

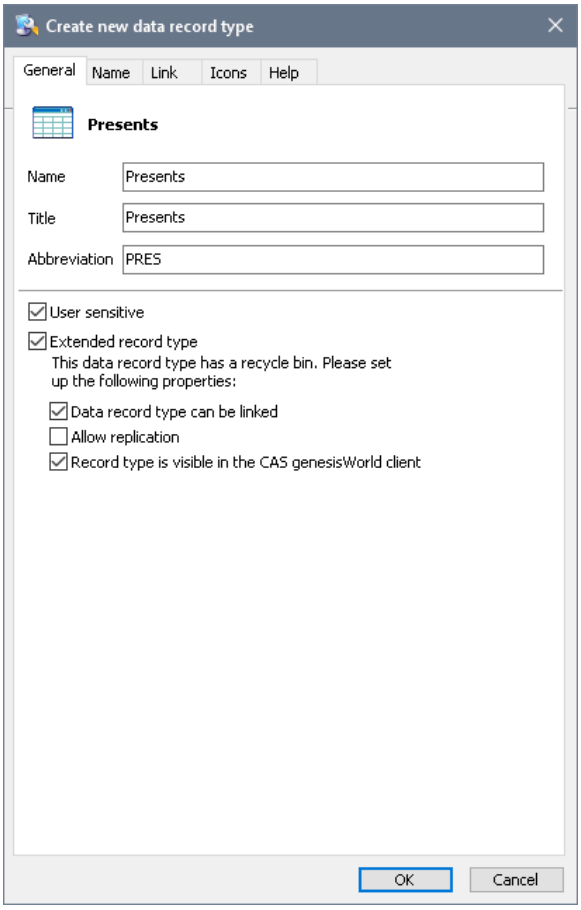
You can use new data record types to adapt CAS genesisWorld to your company's requirements. Existing structures are easily modelled and you have the flexibility to incorporate new developments as and when they occur.

The following example demonstrates how to create a new data record type entitled **Gifts** which includes the following fields: **Subject**, **Occasion** and **Price**. Once this is done, you can configure the fields in the Management Console after which they will be available to every CAS genesisWorld user.

2.1.1 Creating data record types

Open the **Database** area of the Management Console.

Click the **New data record type** button.



✓ Enter **Gifts** in the **Name** and **Title** fields.

> You should ensure that data record types are clearly named. Otherwise the allocation and analysis of formulas can go wrong.

✓ Enter **GESC** in the **Abbreviation** field.

The abbreviation you define cannot be changed once the data record type has been created. Users can enter abbreviations directly into the search field in CAS genesisWorld and use them as search parameters.

✓ Enable the **This data record type is user sensitive** option to add participants to data records and assign them access rights.

✓ Enable the **Extended data record type** option to ensure that the new data record type has a recycle bin.

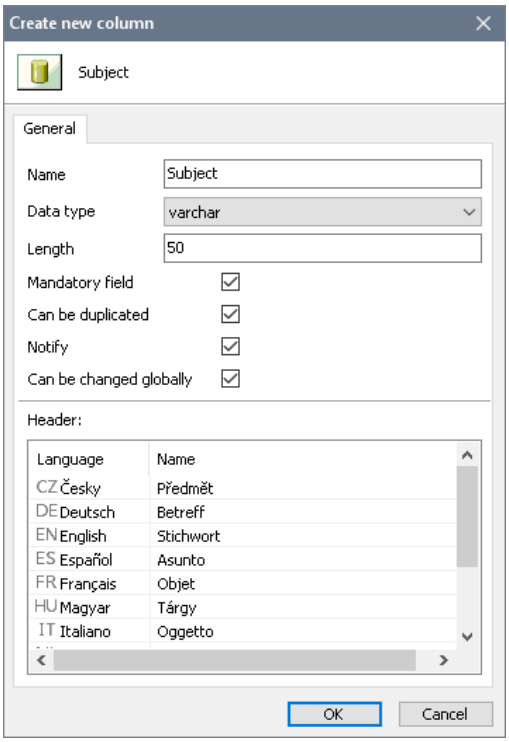
✓ The **Hide data record type in the CAS genesisWorld Client** option can be used if the newly created data record type will be used exclusively for programming and should remain hidden in CAS genesisWorld.

2.1.2 Creating columns

After creating the **Gifts** data record type, you have to create columns and fields for it.

✓ In the **Own data record types** folder, select the newly created **Gifts** data record type.

Click **New column**.



✓ Enter the **Subject** into the **Name** field.

The **varchar** data type and the length value of **50** can remain unchanged.

✓ Activate the **Mandatory** field option.

Using the Form & Database Designer module, you can define different types of mandatory fields. If you activate the **Mandatory field** option in the **Database** area, then you always have to enter something in the respective field. With the help of the Form Designer, you can define mandatory fields which depend on conditions and other fields using formulas. For such mandatory fields with formulas you do not have to activate the option in the **Database** area, see "Fields as elements" on page 20.

✓ Now, create the **Occasion** field also using the **varchar** data type.

✓ You create the **Price** field using the **Money** data type.

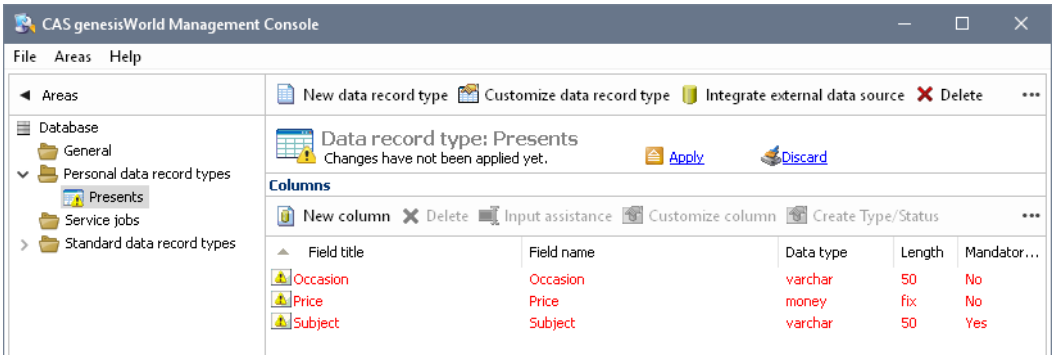
2.1.3 Adopting data record types

Your changes are only saved to the database when you click **Apply**.

In that way, you can first create or change several data record types and columns before changing the database structure.

After they have been transferred, you will see that the respective data record window is available in the Desktop Client. The tabs: **Details**, **Change log** or **Dossier** and their respective functions such as **New**, **Change**, **Link** and so on will all now be available.

You can now design the data record window for the new data record type using the Form Designer.



3 Functions in the Form Designer area

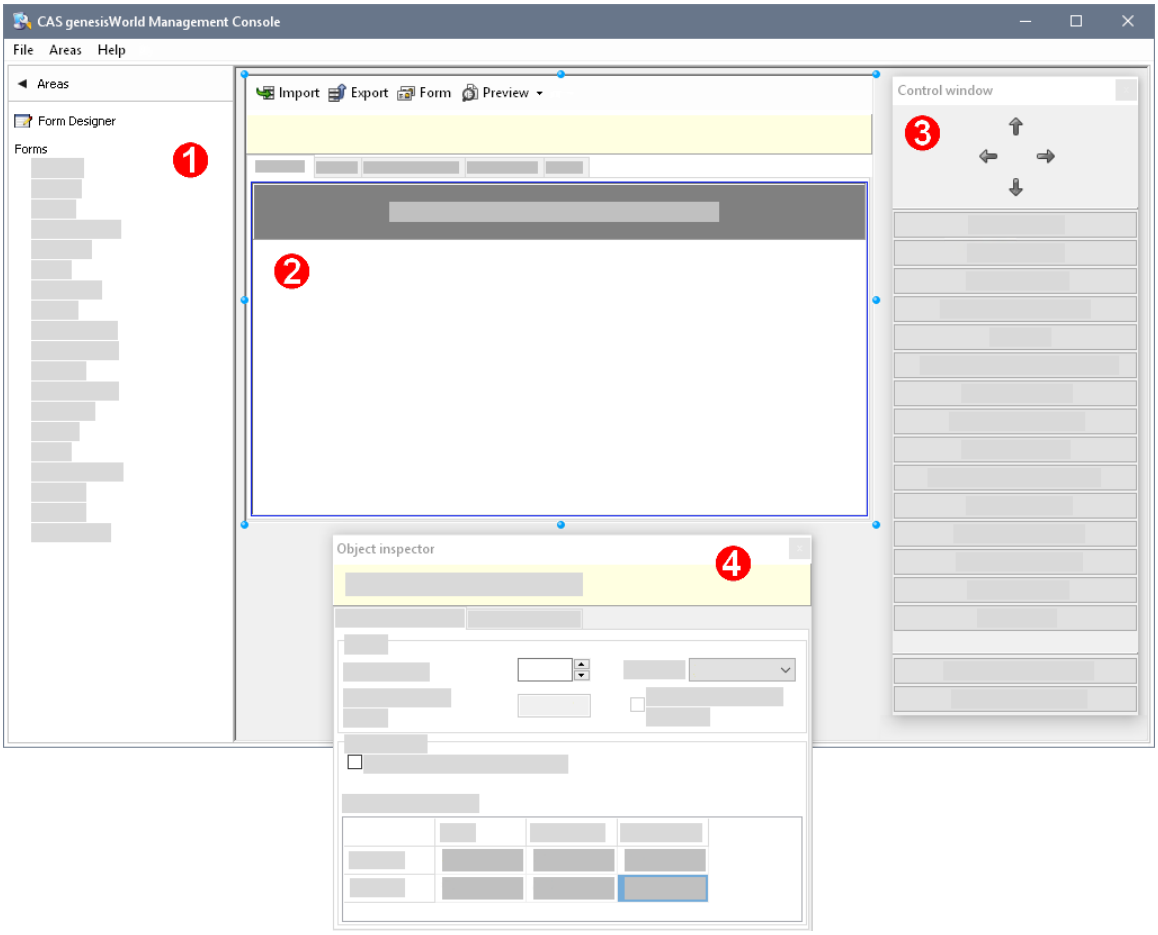
Using the functions in the **Form Designer** area, you can edit the data record window and functional dependencies for the Desktop Client.

- Using the Form Designer you can design data record windows for new data record types.
- In addition, you can customize the tabs for all existing data record types and create new tabs too. There are a number of different settings which you can use for tabs, for example, you can design your own layout, change the position of the tab or assign special access rights. New tabs can be exported and imported.
- You can insert default fields from CAS genesisWorld into tabs. As well as, changing specific properties and field formatting.
- You can also define multilingual labels and text for all user interface elements.
- Using the **Formula editor** you can use mathematical function and operators to insert various formulas. In the process, you can include fields from edited data records and from linked data records. Using formulas you can highlight specific fields in color, specify mandatory fields dynamically or automatically complete other fields with the help of specific values.

3.1 Functions at a glance

In the **Form Designer** area in the Management Console, you will find the functions for customizing data record windows as well as the Formula Editor.

All settings are made with the aid of a graphic user interface.



1. Selecting data record types

   In this area, you will find a list of all the data record types in the database to which you are registered. And the data record types you have created yourself are also displayed here.

   Here you can select the data record type which you wish to edit.

   Newly created data record types are only displayed in the Form Designer once the Management Console is restarted.

2. Form for the data record type selected

   Here you will see a preview displayed of the data record type with all available elements. This helps you to see, among other things, the order of the tabs and any newly inserted fields in the data record window.

3. Control window

   The functions in the control window let you create new tabs, blocks or fields and place them where you want.

4. Object inspector

With the object inspector, you change the properties of a tab, block or any other element that you have marked in the ❷ form.

Preview

With the **Preview** button in the toolbar, you open the **Search** window of the Desktop Client.

✓ Search and open a data record.

The data record window shows how your adaptations will be displayed in the Desktop Client after the changes have been applied.

> If while in preview mode, you decide to edit and save the open data record, then this data record will be saved to CAS genesisWorld as with every other data record. The preview data record is a normal data record and not a temporary model of the Form Designer.

Importing and exporting

Using the **Import** and **Export** buttons, you can import and export your customizations via an XML file.

- At **Export**, after clicking **Save**, a smaller window opens in the file selection box. All customized data record types and tabs are displayed in a tree structure. You activate the export of individual customizations with checkboxes.
- Once you have selected an **Import** file and customizations that you want to open, the Import window that contains the tree structure opens.

Default field values

✓ Using the **Form** button you open the Formula Editor and can then set preset values for new data records, see "Formula editor" on page 40.

3.2 Customization limits

Besides the options for customization, there are also some limits which you should take into consideration for the Form & Database Designer.

- Several users can edit different tabs in the Form Designer simultaneously.
- You can use the Form Designer to customize all the data record types. The data record types can vary depending on the extensions you deploy.
- You can always edit newly created fields for a data record type using the Form Designer.

- Customizing is only possible for default fields which have been released for customizing, see "Released default fields" on page 63. Fields that are not available for customizing are used for important functions, and as such, are often involved in dependencies with other fields. This restriction helps to prevent changes which could result in adverse effects.
- Standard fields which have been approved for the Form Designer offer - where applicable - special functions, for example, synchronous field values in addresses, dependencies to other fields or they display special buttons such as for a date.

  The most important functions are still kept after changes have been made with the Form Designer.

  Properties and functions like opening a link by clicking on a text or special field formats might not always be kept after changes have been made.

  If you do choose to customize such fields, then we recommend that run some tests to ensure that all is working as it should.
- Customizing e-mails as a data record type refers to archived e-mails. E-mails on the e-mail server and locally saved e-mails are not CAS genesisWorld data records.
- Some tabs, for example, the **Dossier** tab and the **Change log** tab cannot be changed using the Form Designer.
- With other registers available in the standard system, certain sections cannot be edited. This applies especially to the **General** and **Details** tab. If you want to add new fields to the **General** tab, you must create a new block.
- Changes will not be displayed for deleted data records in the recycling bin, they will only be applied once the respective files have been restored.

3.3 Control window

With the control window, you can call the functions for new and existing elements.

Each element, for example, a field or a formula field is found in a block and a block is found on a tab. When you customize the data record types which are included in the delivery of CAS genesisWorld, then these blocks and tabs will already be available.

When defining the GUI for your own data record types, you are simply adding an element. If no tabs or blocks are available, then a new tab or a new block will be created automatically.

> Changes for users will only be available once you have restarted the Desktop Client.

Control window functions

- You can change the position of the new tabs, blocks or fields with the arrows in the control window.
- ✓ If you click an entry, for example, on a **New tab** or **New block**, then the **Object inspector** will open. In the **Object inspector** you can define the properties for the new element, see "Object inspector" on page 14.
- ✓ In order to change an already existing element, mark the element in the GUI. Click **Change properties** to open the **Object inspector**, see "Object inspector" on page 14.
- ✓ Using the **New placeholder** function, you can lock a definable area of the block, so that no other fields can be inserted within that area. This allows you to sort and group fields.
- ✓ To remove an element or object you have to click **Remove object**.

3.4 Object inspector

Using the object inspector you define element properties.

3.4.1 Editing tabs and blocks

The settings in the **Object inspector** window for tabs and blocks are similar. There are some special considerations to bear in mind for tabs.

- The **Dossier** tab is predefined and cannot be changed with the Form Designer. The tab is only displayed in the Form Designer to help you determine the position of the other tabs more easily.

  The **Dossier** tab can be oved or hidden. Moving or hiding the dossier tab has no influence on other data record tabs.

- If no customizations are available in the Form Designer for your own data record type, then the **General** tab is displayed in the Desktop Client. On the **General** tab, all of the available fields for the data record type are arranged automatically. As soon as you use the Form Designer to create a new tab for the data record type, then the **General** tab is hidden for your own data record type.

- The **Dashboard** tab cannot be changed with the Form Designer, however it can be changed using elements which administrators or users have defined.

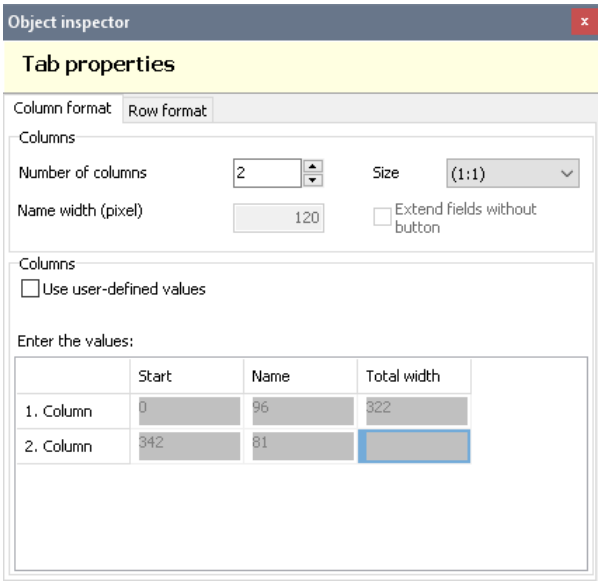
Display tab

… Name the element in the **Name** field and then enter the names in other languages using the button.

✓ Activate the **Hide block with category and tags** option.

Formatting columns tab

Each change made to the number and the width of columns on a tab influences all blocks on the tab. If you change these block properties, the changes do not affect other blocks. All values can be defined at random.



- ✓ In the **Number of columns** field you can define how many columns you wish to display on a tab or block.

  If you have defined two columns, then you can also define the **Partitioning** of the columns into the following proportions: 1:1, 1:2 and 2:1.

  The tab settings are inherited to the block.

  You can define any number of columns for tabs and blocks.

- ✓ In the **Width** field, you define the display width of a column.

  An input is only possible if you wish to display more than 2 columns. For 1 or 2 columns the **Width** is set to a default value of 120.

- ✓ Using the **Increase width of fields without a button** option, fields without buttons are set to the whole width of the column.

  Buttons can be displayed, for example, in a field for a date.

- ✓ Using the **Use user-defined values** option, you can enter individual values into the **Name** and **Total width** fields of the table in the lower pane of the window.

  If you deactivate this option, then the **Width** for 1 or 2 columns is set to 120 automatically. For more than 2 columns, the value you entered in the respective field is used.

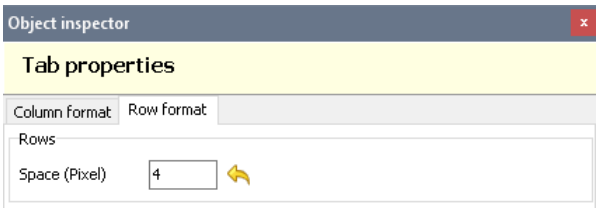
- ✓ The **Use column header** option is also available for blocks.

  When the option is active, you can enter a **Header** for each column into the table in the lower pane of the window.

... Click the button in the table to define multilingual column headers.

Formatting rows tab

On the **Formatting rows** tab in the object inspector, you define the line spacing for the block or tab.



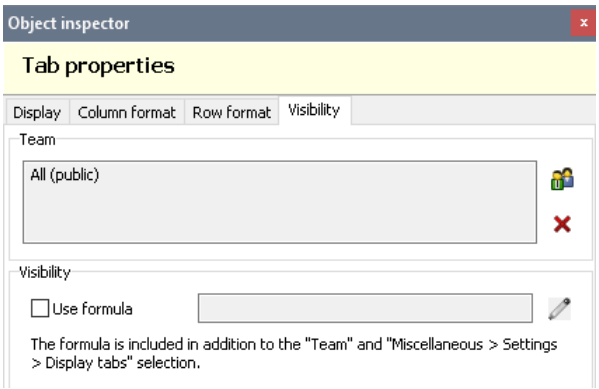
✓ In the **Space in pixels** field, entering a larger value improves legibility, a smaller value results in a more company view.

Using the button, you can reset the line spacing to the default 4 pixels value.

Visibility tab

On the **Visibility** tab in the object inspector, you can specify which users or groups are allowed to see the tab or block in the CAS genesisWorld Desktop Client for user-sensitive record types.

Thus, only certain users in an address data record will see, for example, when a customer has a birthday.



Click the button and select the user or group who should see the tab or block.

✓ In an **Address** data record, you can also define in the **Address types** area whether the tab or block is visible to companies, contact persons or individual contacts.

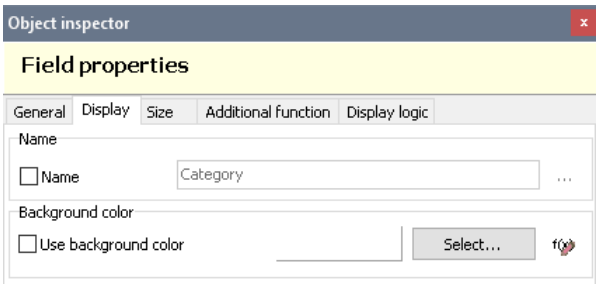
✓ With the **Use formula** option, you also have the option of controlling the visibility of the tab or block via a formula, see "Formula editor" on page 40.

In the block properties, the **Use formula** option is available on the **Display logic** tab.

3.4.2 Analog settings

You will find that for multiple elements in the Form Designer, the same tabs with similar settings are available. These settings, as described here, are valid for both fields and other elements. Additional settings are described in more detail for the respective element.

Display tab



... Name the element in the **Name** field and then enter the names in other languages using the button.

✓ With the **Use background color** option, you can highlight the field in the Desktop Client using color.

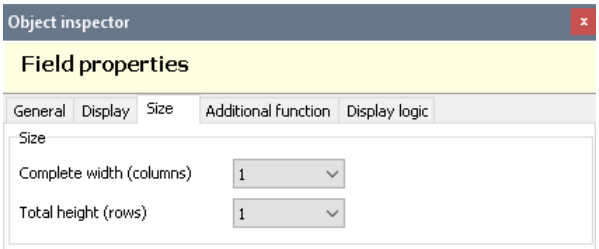
If you use a formula to control the background color, then the color can change independently of other fields, see "Formula editor" on page 40.

Positioning tab

If the last element on a tab is a notes field, a web element, a report or a link list, then the **Total height (rows)** property indicates the minimum height for this element. A scroll bar is displayed when this minimum height value is exceeded. If more space is available, the element is displayed with the maximum of available height.

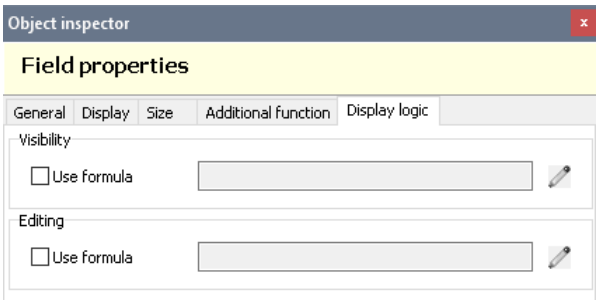
Some elements are relative large, that is they are resized automatically depending on the content. The **Total height (rows)** is ignored if the element is the last element on a tab.

✓ In both drop-down lists, you determine the width of the field by selecting the number of columns and rows you wish to use.



Display logic tab

You can use a formula to control whether the user can see and edit the element in the Desktop Client, see "Formula editor" on page 40.



In this way, for example, you can determine that a block will only be displayed if the data record is set to a certain status.

Formatting tab

You can determine how specific data types are displayed in the Desktop Client, such as whether to fewer or more decimal places with numbers, or a short or long date.

You define the display on the **Formatting** tab. The tab is displayed in the object inspector, as soon as a respective data record type has been set.

Formatting is possible for fields, when displaying the value of a link and also when displaying the result for a business metric and calculation field.

The following settings are possible depending on the data type.

- ✓ For a **Decimal** data type, you define the number of decimal places after the comma. Thousands separators can also be displayed.

  Please note that rounding errors may occur. We recommend you include at least ten decimal places in the database.

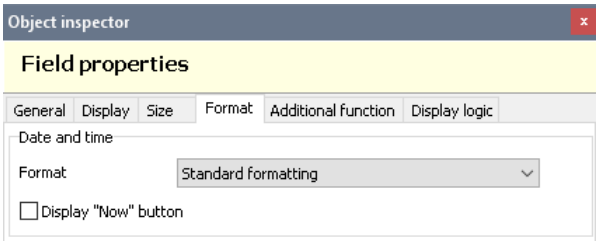
- ✓ Two decimal places is the default setting for the **Currency** data type.

- ✓ A **Date** can be set to be longer or shorter and displayed with or without the time.

  Standard formatting is set automatically for new fields.

  Using the **Display "Today" button** users can enter today's date with just one click.

  For **Date** and **Time** users can select the **Display the "now" button** option to enter today's date and the current time with just 1 click.



✓ For some extensions, like Helpdesk, time recording functions are available. In this case, you can define the duration of a person day in the **Time recording** area of the Management Console.

For fields with floating-point numbers or integers, you can set the duration using the person days format.

3.5 Fields as elements

Using the Form Designer you can insert fields and default fields which you created for your company, see "Released default fields" on page 63.

Fields with comprehensive settings, for example, the **Participant** field, or linking fields are displayed in the control window as separate entities.

There are some special considerations to consider depending on the field.

For fields without own entries in the control window, settings on the **General** tab are the same and, depending on the data type, different in the **Additional Functions** tab.

You will see that related settings are available for fields and other elements on multiple tabs, see "Analog settings" on page 18.

3.5.1 Special considerations for fields

Please be careful with any of the fields that are used for functions or calculations. Undesirable side effects can occur with these fields. As a result, please test such fields carefully.

- Fields which are connected to other fields by means of calculations or other dependencies, cannot be created and are thus not displayed in the control window. Such fields include, for example, **Start**, **End Duration** or **Reminder time**
- Fields which are included at delivery such as **General** and **Details** cannot be customized.

  Additional fields on these tabs are possible, if you insert a new block.

  A newly inserted block on the **General** tab will be automatically positioned above the **Notes** field. The **Notes** field is also always the last field on the **General** tab.

  You can enter a new block below the existing fields on the **Details** tab.

- Automatic number assignment is possible if the number field **GWAUTONUM** was created or already exists for a data record type in the **Database** section of the Management Console.

  If a number field, for example, **DOCNUMBER** is available, then the field can be used in conjunction with the button for automatic number assignment with the Form Designer.

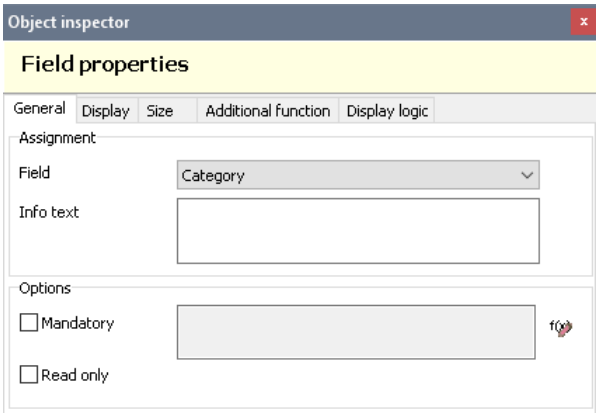
- If you insert a standard field with user selection onto your own tab, then user selection will be available automatically for the field. For example, the **Processed by** field for tasks.

  For your own fields, you can activate a user selection on the **Additional function** tab in the Object Inspector.

- If you insert standard fields including available input help options into a data record window, then the input help options can be selected for the respective field.

  Additionally, you can use a formula to define dynamic input help options on the **Additional functions** tab in the Object Inspector for your own fields in the **varchar** data type.

3.5.2 General tab



✓ In the **Field** drop-down list, select a database field.

✓ Content in the **Info-Text** field is displayed as a Quick info (hint) if a user moves their cursor over the field.

✓ After activating the **Mandatory field** option, you can define the conditions using a formula, see "Examples for formula fields" on page 59.

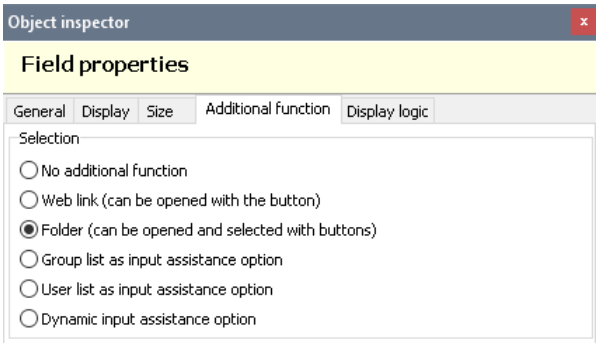
> Activation of the **Mandatory field** option is only saved when you also enter a formula. If you require that a field should always be completed then enable the **Mandatory** field option in the **Database** area, see "Creating data record types - example" on page 7.

✓ With the **Read only** option, the field only serves information purposes and cannot be changed by the user.

3.5.3 Additional functions tab

With an additional function you can, for example, choose to display a hyperlink, a folder or specific input help options for the field.

> Some options for some standard fields are deactivated on the **Additional functions** tab to avoid conflicts with existing functions.



✓ Using the **Weblink** option, users can open an Internet address via the respective field.

This additional function is available for newly created fields using the **varchar** data type.

✓ With the **Folder** option, buttons are displayed in the Desktop Client which users can use to open or select a folder.

This additional function is available for all newly created fields of the **varchar** data type.

Options with input help

✓ The **Group list/user list as input help option** options allow users to enter CAS genesisWorld groups or users in this field.

✓ You can combine a group list and a user list.

Next, select **Group list as input help**. Enter another field and select the **User list as input help** option. Activate the **Use group field** option.

Now, a group can be selected from the drop-down list in the Desktop Client. In the second drop-down list, you can then choose from the users in the group.

Special considerations when dealing with user lists as input help

If at least one input help source has been set for the field, then the input into the **Type** drop-down list is set automatically. The entries for the input help options are then available in the Desktop Client and users can be selected. If you change the type of input help, the user will be still be available. You do not have to make changes to the Form Designer. You will, however, have to restart the Application Server.

If no input help has been set for a **user list** field, then select the **Type** of input help you would like to use. In a user list, you will see that both a **Single selection list** and a **Checkbox list** with or without input options are available. If you use a **Selection tree** as an input help option, you cannot use the **User list as input help** option.

A group list is always a **Selection list** and cannot be combined with regular input help options. If input help and group list options have been set for a field, then you will only be able to select the input help values for users.

With **Restrict selection**, you can define that only certain users can be selected in the Desktop client. The **Administrator** user, created by the system, is not displayed in the list, even if you select this user here. With the **Enter current user automatically when creating a data record** option, you enter the user in the data record, who is currently logged on to the client.

For both user and group lists in the Desktop Client, the only entries which are displayed are those which the logged on user, depending on their access rights, is permitted to see or select.

- The **Enter current user automatically when creating a data record** option does not work with the archived e-mails data record type. An archived e-mail is created via an e-mail client. Consequently, a data record window is not available when creating the data record as, for example, for addresses which is why users cannot be entered.
- The **Enter current user automatically when creating a data record** option only works for documents under the following 2 conditions: Either a template is not used, or in the **Database** area this field is designated as none duplicable.
- If short notes are created via the **Short note** button, then the **Enter current user automatically when creating a data record** option does not work.

Special considerations when using group lists as input help

In a **Group list**, the button opens a window with all available groups. Select the groups from which the users can choose.

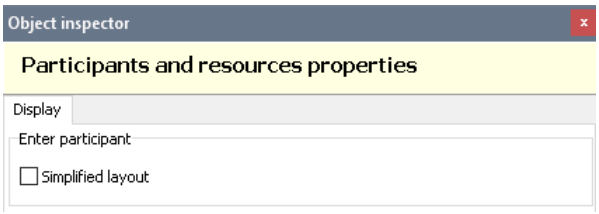
Dynamic input help

✓ With the **Dynamic input help** options, users can select other fields or a formula from input help options using a single selection list - depending on the value, see "Examples for formula fields" on page 59.

So for example, this enables you to use a user list and input help list simultaneously. In the Form Designer, the type of input help is recognized automatically.

3.5.4 Participant/Resources field

You can enter users or resources as data record participants using the **Participants/Resources** field in the Desktop Client.



✓ Using the **Compact layout** option, you can define whether participants are displayed with or without a photo.

This enables you to display more participants and resources.

The participant field has a fixed height of 2 rows and is displayed across the whole width of the window.

3.6 Link elements

Fields which display a single link, or lists with multiple linked data records can be displayed on tabs or in blocks in the data record window.

Direct links reference the open data record and any linked data records.

Indirect links reference the linked data records from the links of the open data record.

Primary links can be selected for direct and indirect individual links and link lists. This enables you, for example, to display all tasks and associated primary links for an address data record. Users can see and change all parent primary links when they insert a primary link element, for example, for a task, address, project or job.

For link fields for addresses users can select the address type when creating a link. This is not possible for lists with links.

3.6.1 Link field

Using link fields you can display a linked data record with specific fields in a data record and also change this link. Users can use links with a m:1 or 1:1 cardinality as these link types allow exactly one data record to be linked.

An element with these characteristics would be, for example, the **Customer** field in opportunities or the **Address short info** field in phone calls.

Similar settings such as those used for multiple elements are available, see "Positioning tab" on page 18, see "Display logic tab" on page 19.

The following describes the specifics for this element.

General tab

- ✓ You can select permitted data records from the **Data record type** drop-down list.
- If you only want to search for certain data records of this data record type using the link field search function, then you have to create a **Filter** via the button.
- ✓ Activating the **Use SmartSearch** option will display the link field as a search field.

  The search field only functions if SmartSearch has been activated in the **Database** area of the Management Console and the associated service has been started on the CAS genesisWorld Application Server.

  Users can search for the data record they wish to link to, by simply starting to type in the link field. Additionally, you can open the search via the respective button.

  If you use the SmartSearch, the you will not be able to apply a **Filter** to the link field.
- ✓ Select the **Link type** you wish to include.

  In the drop-down list only links with a cardinality of m:1 or 1:1 are displayed.
- ✓ If the you have enabled the **Only make contact persons available for companies/contact person data records**, then only contact persons of the company, to which the address with the link field belongs, can be entered in the link field.
- ✓ In the **Field** drop-down list, select a field from the current data record to which the value from the linked data record will be saved.

  If the value allows the field's data record type to be displayed different, then the **Formatting** tab will be available in the Object Inspector, see "Formatting tab" on page 19.

For example: Saving a field value from a link

In an address, create a link field for to show the price of a gift. The next step is to set a path for saving the prices, so that they are also saved to an address field, this is done in the link field properties. Now, the prices of gifts will be displayed in the normal address list views, and they can be filtered or grouped via this field by the users.

The default scenario is a field with the **varchar** data type. In the **Display** tab, under **Select field**, the field of the linked data record (from which the field value is adopted) is set automatically.

If you select a **Bit** field, a date field, a floating-point number field or an integer field, you must go to the **Display** tab. Go to **Select field** and select the field of the linked data record from which the field value is to be adopted.

A result with decimal places is not rounded, but cut off. Check in the **Database** area, how many decimal places should be displayed.

Display tab

- With the **Field list** option and a **Field selection** you can select specific fields in the linked data record type which should then be displayed in the field.
- With the **Formula** option and the **Formula editor** you can define the displayed fields via a formula, see "Formula editor" on page 40.
- ✓ Users can change values when the **Allow editing of the transferred value option** is active.

  The value from the link is always transferred if the link is changed through one of the buttons of the field. Then a user can edit the field independently of any linked data records. Changes to the link field have no effect on the linked data record.

Selection options tab

- ✓ **Default display** offers users the default buttons for entering a link.
- ✓ **Display history** displays all the data records and their links types in the data record window.

  Uses can now quickly find a suitable data record.
- ✓ **Drop-down list with available link elements** helps users to make a quick selection.

  Users must use the search function if they want more than 100 data records.
- ✓ In the **Buttons block**, you can define which buttons you wish to display, this could be the buttons for changing the link or for opening the linked data record.

Linking to documents

With links to **Documents** you can define more details for new creations such as for creating and opening linked documents.

- ✓ **Start the creation of a document via the file selection dialog** opens the file selection dialog if a document has been newly created via the link element.

  You specify an additional folder using a formula. If you do not specify a folder, the file selection always opens with the **Document** folder for the logged-on user.

If this option is not enabled then when creating the document, a user can select between a document template and a file via the link element.

✓ With **Adopt field values from the document template for a new creation** you can transfer all the field values from a saved document template into a new document automatically.

Select the desired document template. Only field values for the new document are adopted. The saved archive file in the document template is ignored.

✓ The **Open archive document directly and offer dropdown for opening options** function replaces the open document button with the edit document button.

Clicking the button opens the document data record and simultaneously, the archive file for editing with the respective application. In addition, a menu with the: **Open data record**, **Open archive file for reading** and **Open archive file for editing** options is available in the link element. This menu including this option is also available when the button for opening or editing the document has been hidden.

Additional functions tab

✓ With this tab, it is possible to define interdependencies between links. To use this function, you require two elements for **Links** in the respective data record window.

Users can then select a specific data record from a drop-down list which is linked to the open data record. The second drop-down list only displays data records which are linked with a certain link type to the first selected data record.

✓ We recommend that you activate the **Save values also in the field if the link field is not displayed** option.

Save values to the field even if the ... field is not displayed

With links, link values can be saved to the respective field.

With business metric and formula fields you can select the **Save result in field** option and also a field for the current data record type for the result on the **General** tab.

However, a link value and a result from a business metric or formula field cannot be displayed in the desktop client record for various reasons. The following examples show you possible usage scenarios:

- The tab with the field is hidden for certain entries in the **Type** field via **Tab visibility** in the **Other** section of the Management Console.
- You can use formulas in the Form & Database Designer to hide a tab or a block.
- The **Online** tab in Survey online is not displayed as the questionnaire is not available online.

If a link value, business ratio or formula field is not visible for a user and the **Save value to field even if the ... field** is hidden option is not active, then a field is not completed with the link value or result.

If the **Save values also in the field if the link field is not displayed** option is active and the respective tab or block is not displayed then the field is completed. There are 2 exceptions to this rule:

- When a **Team** has been defined on the **Visibility** tab in the Form & Database Designer, then the tab or block is not displayed for a user.
- You can set the visibility for the Address data record type via Address type in the Form & Database Designer.

The reason for the exceptions is that the user-dependent display of tabs and blocks usually considers user access rights. If tabs or blocks are not displayed for a user, then this simply shows that the user does not have sufficient rights to view or edit the data.

Similarly, this also applies where an address type tab or block is hidden. For example, if the current address is a contact person, then customizations for a company will have no effect.

We recommend that you activate the **Save values to the field even if the Save values to the field even if the ... field is not displayed is not displayed**.

This applies especially to mandatory fields: If the field is not visible to a user, then the field will still be completed, no message is displayed and the user can save the data record. If the field is visible and the tab has not been opened, then the user receives a message and can then complete the field.

For example: Saving a hidden link

The work is organized via projects. Every project has a client and this is always a company. A main contact person (on the client's side) has to be created for each project. You might often be running more than project for the same company, for which the main contact person can vary.

Projects and companies are linked m:1 with the **Client** link type. Projects and contact persons are linked with a **Project contact** link type, which also has an m:1 cardinality.

In projects, insert a block entitled **Contact person** and then two link elements: The first element is called **Client** and the second is called **Project contact**.

You define the corresponding data record type, the link type and other settings for each of the two **Link** elements.

If you are going to use the link field as a filter for selecting a company, then the **Project contact** link type is also available. If you are going to use the link field as a filter for selecting a company, then the Project contact link type is also available. In this case, the

second link field will only contain the central contact person for the company selected in the first link field.

- ✓ Open the **Projects** data record type in the Form Designer and insert a **New link**.
- ✓ On the **General** tab in the Object Inspector select the **Address** data record type.
- ✓ Now, define a filter so that only companies are included.
- ✓ Select the **Client** link type.
- ✓ Open the **Display** tab in the Object Inspector and enable the **Field list** option.
- ✎ Select, for example, **Person responsible**.
- ✓ Now, add a second **New link**, preferable next to the first element.
- ✓ For the second element, enable the **Use link field as additional filter** option on the **Additional function** tab in the Object Inspector.
- ✓ At **Link field**, select **client**.
- ✓ For **Link type** select **Project contact** as the unique link type.
- ✓ Open the **General** tab in the Object Inspector.
- ✓ From the **Save field value from link** drop-down list, select a field from the current data record type.
- ✓ In the Object Inspector, open the **Additional function** tab.
- ✓ Activate the **Save values also in the field if the link field is not displayed** option. This saves the field value even if the link field is not displayed in the Desktop Client.
- ✓ On the **General** tab in the Object Inspector, use the **Save field value from link** option, to select a field from the current data record type.

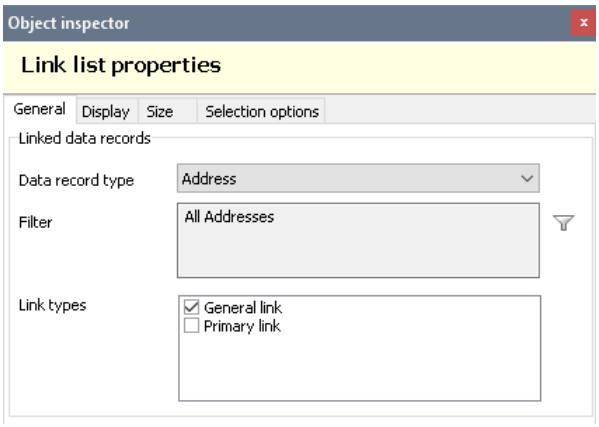
3.6.2 Link list

Using the **Link list** element, you can display multiple linked data records on the tab, either as a list or as a dossier.

Similar settings such as those used for multiple elements are available, see "Display tab" on page 18, see "Positioning tab" on page 18.

The following describes the specifics for this element.

General tab



✓ You can select permitted data records from the **Data record type** drop-down list.

If you only want to search for certain data records of this data record type using the link field search function, then you have to create a **Filter** via the button.

✓ In the **Link type** field, you can highlight the link types which you wish to display.

If you display more than one link type, users cannot create new links via the link list.

Example: the different contact partners of an opportunity can be displayed in a common list, regardless of the link type. In this case, users cannot enter new links as they would also have to enter a link type. This cannot be done with the Form Designer.

If a link list only displays data records with one link type, new links are automatically entered with this link type.

When using a **primary link** as a **link type** the indirect primary links are also displayed. If in an address data record a document is displayed, then next to the address a linked project is also displayed.

Users cannot remove indirect primary links for a link list created in the Form Designer area; they can remove them in the respective data record in the **Parent** field.

✓ For addresses as data record types, select the **Start view** with 3 options:

Company or contact person displays all links of the company address or the address of the contact person.

Overall dossier displays all linked data records of all contact persons and of the company.

Corporate group dossier: is comparable to an overall dossier. Additionally, the links of all companies and subsidiaries which are saved in the **Group structure** tab, under the address or the corresponding company, are displayed in the dossier.

Display tab

✓ If you select the **Display ... link types** option, then the link type is displayed as the first column in the link list.

✓ In the **View format** drop-down list, select an available public view format for the list.

✓ **Use dossier** displays a dossier to display the links instead of a list.

In the **High list** field, define the height of the dossier in pixels.

In the **Navigator** drop-down list select an available public link navigator as the preset.

Now, define the **Width of the navigator**.

Users can change the dossier settings if they have sufficient navigator rights.

Selection options tab

You can display more than link type on the **General** tab:

- The **Hide "New link" button** option is active and cannot be deactivated.
- The **Hide the "Remove link" button** option is always activated if in addition the **Display link types** option is not activated on the **Display** tab.

These settings can only be changed if you define that only one link type can be displayed in the **General** tab.

3.6.3 Indirect link

The **Indirect link** element displays: displays a :1 link of a record that is assigned to the current record by a :1 link. This could, for example, be the parent company of the parent company of one of your company addresses.

Similar settings such as those used for multiple elements are available, see "Display tab" on page 18, see "Positioning tab" on page 18.

The following describes the specifics for this element.

General tab

✓ In the **Data record type** drop-down list in the **Linked data record** block, you can select the data record type for the directly-linked data records.

These directly linked data records are not displayed, but instead the indirectly-linked data records are displayed which you selected from the **Indirectly-linked data record**.

✓ In the **Link type** drop-down list in the **Linked data record** block, you can select the link type you wish to use for directly-linked data records.

- ✓ In the **Data record type** drop-down list in the **Indirectly-linked data record** block, select the data record type and the link for the data record you first selected.
- ✓ In the **Link type** drop-down list in the **Indirect-linked data record** block, select the link type for the link you wish to display for the data record you first selected.
- ✓ In the **Field** drop-down list in the **Save link as text** area, select a field in which the value of the indirectly-linked data record can be saved.

  In the process, all the fields you selected to display on the **Display** tab are saved as text.
- ✓ Activate the **Hide button to open the linked data record** option if only one can be displayed.

Display tab

With the **Field list** option and a **Field selection** you can select specific fields in the linked data record type which should then be displayed in the field.

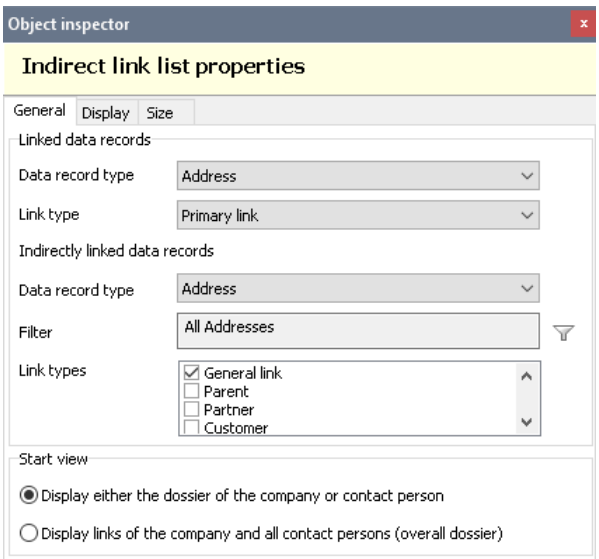
3.6.4 Indirect link list

If you insert the **Indirect link list** element, then you can display multiple indirect linked data records as a list or dossier in the data record.

Similar settings such as those used for multiple elements are available, see "Display tab" on page 18, see "Positioning tab" on page 18.

The following describes the specifics for this element.

General tab



✓ In the **Linked data records** select an entry from the **Data record type** drop-down list.

✓ In this block you can also select a **Link type**

The directly linked data records are not displayed.

✓ In the **Indirectly linked data records** area, you can select the indirectly linked data records that you wish to display.

If you only want to search for certain data records of this data record type using the link field search function, then you have to create a **Filter** via the button.

✓ For indirectly linked data records, you can select one or more **Link types** which you wish to include.

When using a **primary link** as a **link type** the indirect primary links are also displayed. If in an address data record a document is displayed, then next to the address a linked project is also displayed.

✓ For addresses as data record types, select the **Start view** with 2 options:

Company or contact person displays all links of the company address or the address of the contact person.

Overall dossier displays all linked data records of all contact persons and of the company.

Display tab

✓ If you select the **Display ... link types** option, then the link type is displayed as the first column in the link list.

✓ In the **View format** drop-down list, select an available public view format for the list.

✓ **Use dossier** displays a dossier to display the links instead of a list.

In the **High list** field, define the height of the dossier in pixels.

In the **Navigator** drop-down list select an available public link navigator as the preset.

Now, define the **Width of the navigator**.

Users can change the dossier settings if they have sufficient navigator rights.

3.6.5 Primary link element

This element is only visible to users of the CAS genesisWorld Premium Edition. The element is only of significance for data record types which can have primary links to parent data records.

Additionally, you have to ensure in the Management Console that primary links are possible for the respective data record types.

After creating this element, you cannot change any settings.

✓ Click **New primary link element** to insert the **Parent** element using the Link Wizard.

3.7 Elements with input help

The two-phase input help for the **Type** and **Status** fields and the automatic allocation of addresses to distribution lists can both be inserted using 2 elements.

3.7.1 Type/Status Element

This element is only visible to users of the CAS genesisWorld Premium Edition. The **GWSTYPE** and **GWSSTATUS** fields must be created for data record types in the **Database** area of the Management Console.

You will see that the same settings are available as for other elements, see "Positioning tab" on page 18.

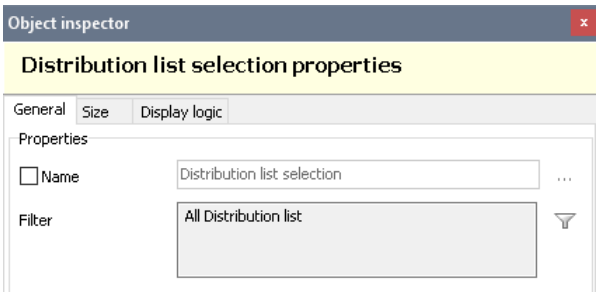
3.7.2 Distribution list selection

The **distribution list selection** is an input help option comprising a **checkbox list without an input option**.

If users select an item and save the data record, then the respective address is entered in the selected distribution lists and/or removed from deactivated distribution lists.

… On the **General** tab you can name the element in the **Name** field if necessary with a different name than that in the database. You can enter the names in other languages via the button.

Using a **Filter**, you can restrict the displayed distribution list, for example, according to **Distribution type**



Similar settings such as those used for multiple elements are available, see "Display tab" on page 18, see "Display logic tab" on page 19.

3.8 Text, Web element, notes field

With the following elements, you can display text or content from the web or users can insert notes.

3.8.1 Text

Using the **Text** element you can display a text in a data record.

… On the **General** tab, you can enter content into the **Text** field and using the button, you can enter multilingual content.

Similar settings such as those used for multiple elements are available, see "Positioning tab" on page 18, see "Display logic tab" on page 19.

3.8.2 Notes field

A notes field can only be created once in the database for each data record type. You can create missing notes fields in the **Database** area using a new column entitled **NOTES2**, see "Creating your own data record types" on page 6.

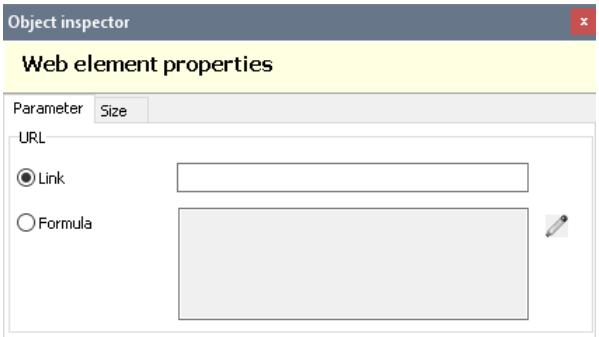
A **Notes** field can only be inserted once into a data record.

You will see that the same settings are available as for other elements, see "Positioning tab" on page 18.

3.8.3 Web element

With Web Elements you can display Internet pages in a data record.

The URL can include both static and dynamic content. Dynamic content stems from the field value in a data record field. You can, for example, display the homepage on your own tab for addresses or link directly to the respective product pages for gifts.



✓ On the **Parameters** tab, you can display specific content via a static **Link**.

Alternatively, you can enable **Formulas** and thus define dynamic URL content in the **Formula editor**, see "Formula editor" on page 40.

If you have entered a formula or link then preference is always given to the formula. If you want to use the link, you must delete the formula.

You will find a simple example in the **Formula editor** under **Data record fields** entitled selecting a **Homepage** in addresses.

You will see that the same settings are available as for other elements, see "Positioning tab" on page 18.

3.9 Elements with functions

The following business metric, formula field and report display values which are dependent on other fields and calculations.

3.9.1 Business metric field

With a business metric field you can calculate, for example, values such as **Minimum**, **Maximum**, **Average** or **Sum**, these figures are taken from multiple linked data records. You can select the linked data record via the **Filter**, **Participants** and **Link types**. You can save a value from a business ratio field to a field in the current data record.

For example, you can display the sum of all turnover for all the linked projects in an address data record.

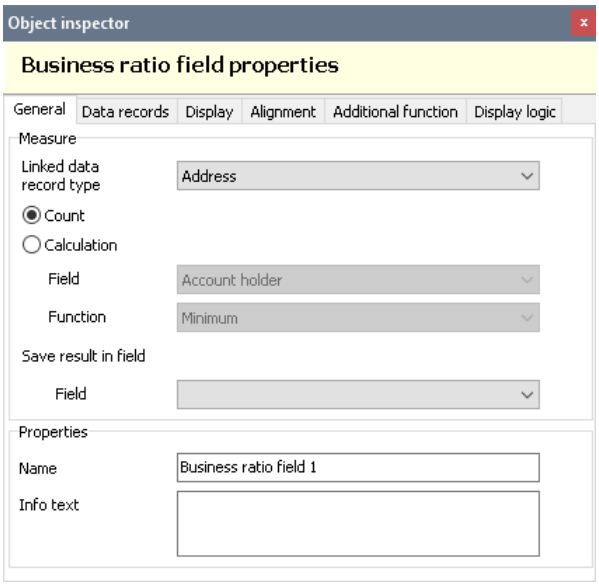
Similar settings such as those used for multiple elements are available, see "Display tab" on page 18, see "Display logic tab" on page 19.

Please note

Include business ratio fields and deactivated addresses through linked addresses in the default setting. Excluding deactivated addresses using a filter condition on the **Data records** tab

When creating a data record, you will see that the business ratio fields are not yet available, even if links have already been entered and are displayed in the dossier. Business ratio fields and maybe also linked target fields are only available once the data record is saved for the second time or if the user has selected the **Update values** action.

General tab



- ✓ In the **Linked data record type** field you can select which linked data records you wish to use for the business ratio field.
- ✓ If you enable the **Number** option, then the number of linked data record will be displayed in the business ratio field.
- ✓ If you enable the **Calculation** field, then you select the **Field** and the **Function** for the linked data record type.

  Most arithmetic functions such as **sum, minimum and maximum** or **average** are possible. The display depends on the field. For fields with a date, the **Average** function is not displayed.

  If you have selected receipts in the **Linked data record type** field, all fields for money amounts are available with and without the inclusion of the statistic factor. The statistic factor is used to, for example, add bills, subtract credit notes, and exclude quotes or delivery notes. Bills have a statistic factor of 1, credit notes a statistic factor of -1, and quotes and delivery notes 0.
- ✓ In the **Save result to field** area, you can select a **Field** in the current data record type.

  A result with decimal places is not rounded, but cut off. Check in the **Database** area, how many decimal places should be displayed.
- ✓ Content in the **Info-Text** field is displayed as a Quick info (hint) if a user moves their cursor over the field.

Data record tabs

You can define which data records you wish to take values from to calculate the value for the business ratio field.

Select data records using a filter.

Select data records from specific **Participants**.

✓ Select one or more **Link types**.

✓ With the **Include system link** options, you include internal link types.

Additional functions tab

✓ We recommend that you activate the **Save values also in the field if the link field is not displayed** option, see "Save values to the field even if the ... field is not displayed" on page 27.

3.9.2 Formula field

Using the **Formula field** element, you can insert a virtual field which is not saved to the database and which is only available in the GUI. The result, that is, the value of a formula can be saved in the database if desired, see "Formula editor" on page 40. You can insert the virtual field on to any tab and into any block, this is the field saved in the database.

The value in the formula field, or the value resulting from the functions performed for this field is determined by the formula you constructed and the specific fields it references.

> Circular references cannot be ruled out between 2 formula fields, this can sometimes have technical reasons. We strongly recommend that you avoid circular dependencies between formula fields. For example, if you have 2 formula fields which both write to a special field. Each formula uses the special field for each of the other formula fields. As a result, a circular reference is created between the two formula fields which can lead to unwanted side effects.

Similar settings such as those used for multiple elements are available, see "Display tab" on page 18, see "Positioning tab" on page 18.

Controlling user interfaces using formula fields

Results (values) taken from formula fields can be used to control user interfaces, for example:

- to display other fields,
- the background color of other fields,
- the display of fields from linked data records,
- to determine whether other fields can be processed or edited,
- to enable input into other specific fields,

- to define whether a field is transformed into a mandatory field when certain data is entered, or
- to determine whether specific input help options for users should be displayed depending on field values.

General tab

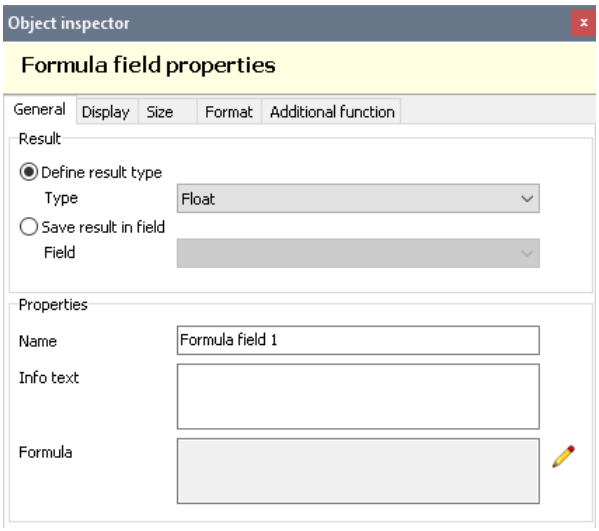
✓ After activating the **Define result type** option, you use the **Type** drop-down list to define the result format, for example: a Boolean value, a float number, a date/time, an integer or a string value.

The **Formatting** tab in the object inspector is available if you wish to change the way values are displayed, for example, if the field data type is displayed differently to the result of the formula, see "Formatting tab" on page 19.

✓ After activating the **Save result in field** option, you can define a field in which the result of the formula is saved.

In the **Field** drop-down list, you can select the current data record type below the fields. The data type for the selected field determines the formula result type.

A result with decimal places is not rounded, but cut off. Check in the **Database** area, how many decimal places should be displayed.



✓ In the **Name** field, set the name of the formula field.

✓ Content in the **Info-Text** field is displayed as a Quick info (hint) if a user moves their cursor over the field.

✎ The display in the **Formula** field is a result of the definitions used in the **Formula Editor**.

Additional functions tab

✓ We recommend you enable the **Save values even if the formula is hidden**, see "Save values to the field even if the ... field is not displayed" on page 27.

3.9.3 Report

The **New Report** element is available if you are using the Report module.

This element lets users display analysis functionalities. The current data record can be used as filter for the query. The display of the report always refers to the opened data record and differs for each record.

> A report is only displayed for those users who have activated a relevant license.

General tab

Select the **Edit** button.

The **Edit template button** opens when you select the respective data and define settings.

> The report presets in the Form Designer can only be changed via the Management Console. Changes made to the configuration in the Desktop Client cannot be saved.

4 Formula editor

Using the Formula Editor you can create formulas from:

- current data record fields,
- linked data record fields,
- the results of existing formulas,
- mathematical expressions such as specific date values and
- operators such as more than, less than, addition and so on.

Using formulas to manage user interfaces and operation

Using the results of formulas you can carefully control the user interface and operation of CAS genesisWorld, for example to determine:

- the display of fields,
- the background color of other fields,
- the display of fields from linked data records,

- whether a field can be edited,
- possible input,
- to define whether a field is transformed into a mandatory field when certain data is entered, or
- to determine whether specific input help options for users should be displayed depending on field values.

In addition, you can insert a formula with a **Formula field** into a user interface and use the values from this field to carry out more functions, see "Formula field" on page 38.

Please note

When creating a formula, the system checks to see if permanent loops are created.

Example

Formula fields A and B, formula A = B + 1; formula B = A + 1

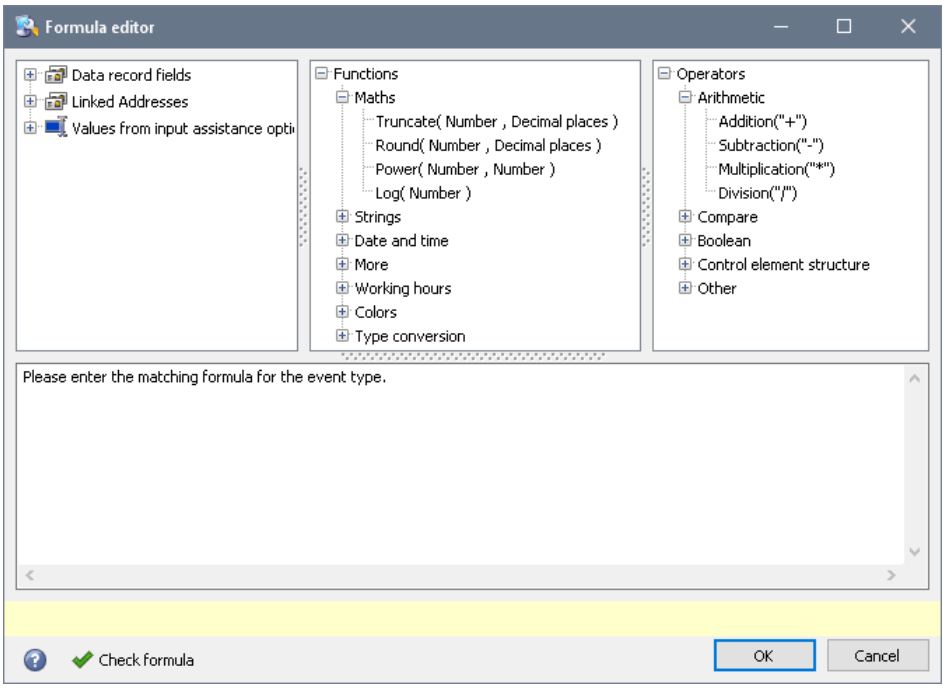
Such definitions result in cycles or loops which makes them invalid.

Please remember that hidden fields with formulas are checked for loops.

Results of different formulas can be saved in the same field of a data record. Please ensure that only one result is saved in one field before using that function.

4.1 Entering formulas

Formulas can be created from CAS genesisWorld fields, functions and operators.



Checking formulas

✔ You run a check using the **Check formula** button or when applying the formula using **OK**.

The system checks whether the result type for the formula is correct and whether functions and operators contain suitable parameters, as well as whether all quotation marks and brackets have been closed.

Possible errors are displayed and your cursor will jump automatically to the first error.

Results

Formula fields can have different data types as results each of which has some specific characteristics that have to be taken into account.

4.1.1 Available fields

The data record type defines which fields are available in a formula. You can use:

- all the fields of the current data record type,
- all the fields of the linked data records with a cardinality of n:1, for example, the headquarters of a company structure,
- all the fields of the employee data record for the selected user for data records with user selection fields,
- variables for fields with international input help options and
- all formula fields which have already been created.

Please note

> Using the **Data record ID** field, enter the GGUID (Globally Unique Identifier), this is the unique name of the current data record or linked data record. So for example, you can use IsNull() to check whether a linked data record is available.
>
> If you use your own data record types in formulas, then the data record types have to be clearly named. If this is not the case, then the allocation and subsequent analysis of formulas can fail.

4.1.2 Available functions

Calculations include functions for numbers, characters, the date and time, colors as well as functions for null values, the current user and the current language. The different data

record types can be combined with different operators. A result can be another data type.

Some mathematics

Truncate (Number, Decimal places) truncates the specified **Number** to the specified **Decimal places**.

- Example: **Truncate (999,999.2)** = 999.99
- **Number (floating-point number)**: the number to be cut.
- **Decimal places (integer number)**: the number of decimal places to remain.
- Output: **Number** with the specified decimal places (floating-point number).

Round(Number, Decimal places) rounds the specified **Number** to the specified decimal places.

- Example: **Round (123,4567.3)** = 123.457
- **Number (floating point numbers)** is the number that you want to round up or down.
- **Decimal places (integer number)**: the number of decimal places to remain.
- Output: **Number** rounded to the specified **Decimal places**.

Log (number) returns the natural logarithm for **Number** you entered. Using the log(x)/log(y) formula, you can calculate the logarithm of x to the base y.

- For example: **Log(199)/Log(10)** = 2
- **Number (floating point number)** is the number you require the natural logarithm for.
- The output is the natural logarithm for the **Number** you entered.

Power (number, number) returns to the first number, the base, the power of the second number, the exponent (base high exponent).

- Please note that calculations using large numbers can be used as argument for memory overflow in CAS genesisWorld.
- For example: **Power (1.1, 3**= 1.331
- **Number (floating point)** is the basis.
- **Number (floating point)** is the exponent.
- The output is the result of the calculation base high exponent.

Strings

Strings always have to be enclosed in quotation marks in the formula editor, for example: **"my string"**.

Length(string): returns the length of the string (integer).

- Example: **Length("Hello")** = 5
- **String**: the string whose length is to be determined.
- **Output**: length of the specified string (integer number).

Trim(String) cuts off leading spaces and the spaces at the end of the string.

- Example: **Trim(" Hello ")** = "Hello"
- **String**: the string to be shortened.
- **Output**: length of the specified string without space.

LowerCase(String) transforms all capital letters in the string to lower case.

- Example: **LowerCase("Hello")** = "hello"
- **String:** the string to be transformed.
- **Output**: the specified string in lower case.

UpperCase(String): transforms all lower cases into upper case strings.

- Example: **UpperCase("Hello")** = "HELLO"
- **String:** the string to be transformed.
- **Output**: specifies the strings in upper and lower case.

Left(String, Length) returns as many characters as specified in **Length**, starting to count from the left.

- Example: **Left("Hello", 3)** = "Hel"
- **String**: the string to be shortened.
- **Length (Integer number)**: number of returned characters.
- **Output**: the first length characters of the specified string.

Right(String, Length) returns as many characters as specified in **Length**, starting to count from the right.

- Example: **Right("Hello", 3)** = "llo"
- **String**: the string to be shortened.
- **Length (Integer number)**: number of returned characters.
- **Output**: the first length characters of the specified string.

Replace (Input string, Search string, Replace string) searches in a string and replaces a specific occurrence of a string by another string.

- For example: **Replace("FOOfoo", "foo", "bar")** = "barbar"
- **Input string**: the string to be searched.
- **Search string**: the string to be replaced.
- **Replace string**: the string to be inserted.
- **Output**: input string, where each occurrence of search string has been replaced by replace string. Upper and lower case is ignored.

Search(Input string, Search string) returns the first position of a string that is searched for in a specified string.

- For example: **Search("Hello World", "world")** = 7
- **Input string**: the string to be searched.
- **Search string**: the string that is to be searched for.
- **Output**: first position of search string in input string or 0 if search string is not contained in input string. Upper and lower case is ignored.

Contains(Input string, Search string) specifies whether one string is contained in another string (Boolean value).

- For example: **Contains("Hello world", "world")** = true
- **Input string**: the string to be searched.
- **Search string**: the string that is to be searched for.
- **Output**: returns **true** if search string is included in input string, else **false** (Boolean value). Upper and lower case is ignored.

Substring(String, Start, Length) partially returns a string.

- Example: **Substring("Hello World", 7, 4)** = "World"
- **String**: the string to be searched.
- **Start (Integer number)**: first character to return.
- **Length (integer)** is the number of returned characters.
- **Output**: the string starting at start with the length which is contained in the input string.

Date and time

Here, you can enter certain entries for the current date, the current time, day, week, month, year, hour, minute or second.

In each of those examples, the **CurrentDate()** and **CurrentTime()** functions are used. In this case, Monday, 31 July, 2017 is taken as the current date and 08:32:57 as the current time.

You can also calculate date and times. For example, you can subtract 2 dates or times from each other to arrive at the difference in the 24 hour time format, this number will be expressed as floating point number. Or, you can add a specific number of 24 hour days, in floating point format, to a date or time.

CurrentDate() returns the current date. The time is not returned.

- Example: **CurrentDate()** = 31.07.2017 00:00:00
- **Output**: Current date.

CurrentTime() returns the current time. The date is not returned.

- Example: **CurrentTime()** = 12.30.1899 08:32:57
- **Output**: Current time.

YearOf(Date/time) returns the year in a date as a number.

- Example: **YearOf(CurrentDate())** = 2017
- **Date/Time**: date/time value to process.
- **Output**: Year (Integer number)

MonthOf(Date/time) returns the month in a date as number.

- Example: **MonthOf(CurrentDate())** = "October"
- **Date/Time**: date/time value to process.
- **Output**: Name of month.

MonthName(date/time) returns the name of the month in a date.

- Example: **MonthName(CurrentDate())**= "July"
- **Date/Time**: date/time value to process.
- **Output**: name of month as a string.

DayOfTheMonth(Date/time) returns the day of the month of a date as number.

- Example: **DayOfTheMonth(CurrentDate())** = 31
- **Date/Time**: date/time value to process.
- **Output**: day of the month (Integer number).

DayOfTheWeek(Date/time) returns the week day of a date as number.

- Example: **DayOfTheWeek(CurrentDate())** = 1.
- **Date/Time**: date/time value to process.

- **Output**: week day (Integer number).

WeekDayName(Date/time) returns the name of the week day in a date.

- Example: **WeekDayName(CurrentDate())** = "Monday"
- **Date/Time**: date/time value to process.
- **Output**: name of week day (String).

HourOfTheDay(Date/time) returns the hours of a time as a number value.

- Example: **HourOfTheDay(CurrentTime())** = 8
- **Date/Time**: date/time value to process.
- **Output** is the hour written as an integer.

MinuteOf(Date/time) returns the minutes of the time as a number value.

- Example: **MinuteOf(CurrentTime())** = 32
- **Date/Time**: date/time value to process.
- **Output** is minutes written as an integer.

SecondOf(Date/time) returns the seconds of a time as number value.

- Example: **SecondOf(CurrentTime())** = 57
- **Date/Time**: date/time value to process.
- **Output** is seconds written as an integer.

AddDay(Date/time, Number) add the specified number of days to the entered date.

- Example: **AddDay(CurrentDate(), 1)** = 01-08-2017 00:00:00
- **Date/Time** is the value that is processed for date and time.
- **Number(Integer number)**: number of days to add.
- **Output**: input date plus number of days.

AddMonth(Date/time, Number) adds the specified number of months to the entered date.

- Example: **AddMonth(CurrentDate(), 1)** = 31-08-2017 00:00:00
- **Date/Time** is the value that is processed for date and time.
- **Number(Integer number)**: number of months to add.
- **Output**: input date plus number of months.

AddYear(Date/Time, Number) adds the specified number of days to the entered date.

- Example: **AddYear(CurrentDate(), 1)** = 31.08.2018 00:00:00
- **Date/Time**: date/time value to process.

- **Number(Integer number)**: number of years to add.
- **Output**: input date plus Number of years.

AddInterval(Date/Time, Interval) adds the string of numbers for the stated interval to the input date. When using CAS genesisWorld in German, the strings for Month, Quarter, Semester and Year are supported. For other languages, you have to enter the corresponding translation, for example, via a field with international input help options such as **Invoice per** in service agreements. In the Formula Editor you will see the possible character sets displayed when you call the respective language.

- For example: **AddInterval(CurrentDate(), "Half year")** = 31.01.2018 00:00:00
- **Date/Time**: date/time value to process.
- **Interval** is a character set which includes the following values: month, quarter, half year or year, or the corresponding translations.
- **Output** consists of the date you entered plus the interval.

EncodeDate(Year, Month, Day) returns a date: **Year (integer number), Month (integer number), Day (integer number)**.

- Example: **EncodeDate(2017, 7, 31)** = 31.07.2017 00:00:00
- **Output**: Date from Year, Month and Day.

More

These functions are available to test for NULL and to read out the user name and the language.

IsNull(Value) specifies whether a value is NULL. The value to be checked can be any data type.

- Example: **IsNull("Hello World")** = false
- **Value (any data type)**: value to test.
- **Output** is the Boolean value true, if the value to be checked is NULL, otherwise the value is false.

NULL() returns the NULL value.

- Example: **IsNull(NULL())** = true
- **Output**: NULL for all data types.

CurrentUser() returns the user name for the current user.

- Example: **CurrentUser()** = "Peter Grayhound".
- **Output**: user name of the current user (String).

UserNameForID(User ID) returns the username for an colleague's address ID.

- Example: **UserNameForID(23)** = "Peter Grundmann"
- **User ID** This is the colleague's address ID.
- **Output** is the user name associated with the ID as a string. If a user name was not allocated to the address of an ID, then the Value NULL function will return it.

IsCurrentUserInGroup(Group) checks whether the user, who is currently logged-on to the client, belongs to a group. A text indicates the group. The return value is a Boolean type value.

- For example: **IsCurrentUserInGroup("Sales")** = true, IsCurrentUserInGroup(\\Sales) = true, **IsCurrentUserInGroup("Duisburg\\Sales")** = false.
- **Group (string)** is the value that needs to be checked.
- **Output** is true if the user is a member of the group, otherwise false.

> **Please note when replicating data:** The domain can be written with a double backslash character in front of the group name, for example, **"Domain\\Group"**. The local domain can be indicated without using the domain name by using just a double backslash character, for example, **\\Group**. Has no domain been specified, the condition is fulfilled if a group with the entered name exists in any domain and if the user is member of this group.

CurrentLanguage() returns a two-digit ISO code for the language that the user logged on with.

- Example: **CurrentLanguage()** = "de"
- **Output** is the name of the current user as a string.

ToBaseCurrency(value, currency) converts the stated amount of the currency entered into the base currency.

- For example: **ToBaseCurrency(100, "USD")** = 74,12
- **Value (number)** is the amount to be converted.
- **Currency (string)** is the currency from the amount that is to be converted.
- **Output** is the amount in the base currency (floating point), rounded up to 2 decimal places.

FromBaseCurrency(value, currency) converts the amount you entered from the base currency into the target currency. Currencies are enter as in CAS genesisWorld using the 3-digit ISO code. You can enter currencies and conversion rates in the Management Console in the **Miscellaneous** area under **Currencies**.

- For example: **ToBaseCurrency(100, "USD")** = 134,92
- **Value (number)** is the amount to be converted.
- **Currency (String)** this is the target currency, into which the amount will be converted.

- **Output** is the amount in the target currency (floating point) rounded up to 2 decimal places.

Working hours

WorkingTimeForUser(user ID, start date, end date) calculates the working hours for a given period and user without the end date in 24-hour days format.

- For example: **WorkingTimeForUser({Users addresse.ID}, {Addresses.Hiring date}, {Addresses.Leaving date})** = 80.5
- **User ID (string)** is the GUID for the desired user. The field is available in addresses.
- **Start date (Date/Time)** this is the start date.
- **End date (Date/Time)** this is the end date.
- **Output** this is the sum of working hours for a given period and user, without the end date in 24-hour days as a floating point number.Output this is the sum of working hours for a given period and user, without the end date in 24-hour days as a floating point number.

Colors

With this formula, you use a formula to assign a specific background color to a field.

- Example: **if {Address.TestField} < 50 then clGreen else clRed**

Type conversion

The following type conversion functions are available in the formula editor.

ToString(Value) transforms any value into a string.

- Example: **ToString(1/8)** = "0.13"
- **Value (any data type)**: the Value to be transformed.
- **Output**: value (String). If an input value is a floating-point number, the value is shortened by two decimal places during transformation.

ToInt(Value) transforms any value to an integer number.

- Example: **ToInt(23.456)** = 23
- **Value (number)** is the value to be converted.
- **Output**: value (Integer number).

ToFloat(Value) transforms the value into an floating-point number.

- Example: **ToFloat(23)** = 23.00

- **Value (number)** is the value to be converted.
- **Output**: value (Floating-point number).

StringToFloat(String, Thousands separator, Decimal separator) transforms a string into a floating-point number.

- For example: **StringToFloat("3.000,23", ".", ",")** = 3000.23
- **String** the string to be transformed.
- **Thousands separator**: the character to use as thousands separator.
- **Decimal separator**: the character to use as decimal separator.
- **Output**: the number contained in the string (Floating-point number).

ToBool(Value) transforms a value into a Boolean value.

If a string is specified as a value, then all of the following strings are interpreted as **true**: **true**, **yes** and **true**. All other strings are interpreted as **false**.

- For example, **ToBool("true")** = true; **ToBool("true")** = true; **ToBool("yes")** = true; **ToBool("Hello World")** = false
- **Value (any data type)**: The Value to be transformed.
- **Output** is the value expressed as a (Boolean value).

DateToString(Date/time, Output format) transforms a date or time value into a string.

Please note

> For the month and day fields, one-digit values are displayed as single digits and two-digit values are displayed as double digits.
>
> Any dates entered before 1753 cannot be converted.
>
> The input field has to contain a date which has a four-figure year. Times which do not have dates cannot be converted.
>
> Incorrect input values will result in NULL outputs.

- Example: **DateToString(CurrentDate(), "dd.mm.yyyy hh:nn:ss")**= "31.07.2017 08:32:57"
- **Date/Time** this is the value which has to be converted to data and times.
- **Output format (String)**: Format of the string. You can use either upper or lower case letters. You have the following options.

  yy: Year (two digits).

  yyyy: Year (four digits).

  mm: Month

  dd: Day

hh: Hours

nn: Minutes

ss: Seconds

- **Output** Date/time (String).

StringToDate(String, Input format) transforms a string into a value for a date or a time.

- For example: **StringToDate("04. 10. 2014 08:32:57", "dd.mm.yyyy hh:nn:ss")** = 31.07.2017 08:32:57
- **String** the string to be transformed.
- **Input format (String)**: format of the String. The options are the same as for the DateToString function. You can use either upper or lower case letters.
- **Output**: Date/time.

ToCurrencyString(Value) This functions transforms a number into a string which represents a sum of money. Floating point numbers are rounded up to just 2 decimal places when there are more decimal places. Thousand separators are used with larger amounts.

- Example: **ToCurrencyString(1999.999)** = "2.000,00"
- **Value** can be either an integer or a floating point number and is the value to be formatted.
- **Output** is the value as a character string, formatted as a sum of money.

4.1.3 Available operators

The following operators are available.

- Addition, subtraction, multiplication or division
- Comparing greater or lesser than
- Boolean values such as **true** or **false**: These are coded with true and false without using quotation marks, they can be linked with **AND** or **OR** and negated with a preset **NOT**.
- Control element structures: **IF x THEN y ELSE z** as well as
- parentheses and comments.

In formula fields that contain field assignments, you can now enter the **NoChange** comment in the **THEN** or **ELSE** branch of an IF branch. Thus, the previous field value is not changed by the formula.

The different data types of the fields in CAS genesisWorld are supported by different operators.

4.1.4 Results in formula fields

The result in a formula field can have the following values:

- Boolean value,
- Date/Time,
- Floating-point number (decimal, currency or duration in person days/24 hours),
- integer values, or
- strings.

Important to know

- Country settings used for the display of numbers and date values are adopted from the Windows settings. This especially applies to decimal separators and the thousands separator for floating-point numbers.
- When entering floating-point numbers in the formula editor, the decimal point is always used as separator. Thousands separators are not supported when entering data.
- The permissible range of values for floating point number and integers is −2.147.483.648 to 2.147.483.647. Larger numbers are possible, however, when using very large numbers on the limit of the int64-type inaccuracies can occur due to internal rounding.
- Calculated fields cannot contain any quotation marks or commas, for example: **{Addresses.discount}*"1.19"** is false, **{Addresses.discount}*1.19** is correct.
- When using quotations marks **"** in formulas you have to enter the backslash sign directly in front of them: **\ \"**.
- If you need a backslash \ for a folder, then enter an additional backslash character. Thus, for example, you can transform \\public\Documents to \\\public\Documents or C:\Documents to C:\\Documents.
- When marking line breaks, they are entered as "\n", for example, line1\nline2.
- Constants are written into double quotation marks, for example, "Constant".
- Fields and constants are interconnected with a "+" sign, for example, {data record type.field} + "Constant".

4.2 Default field values

You can set default value fields for new data records. The fields are then already completed when a user creates a new data record.

Predefined values cannot be exported or imported.

✓ In the **Form Designer** area select the data record type you require.

✓ On the toolbar, click the **Form** button with the icon of the data record type.

A list of all the available defaults for the selected data record type will open.

✓ Select the field you wish to use for a preset value from the left-hand side of the window.

✓ In the formula editor, enter the initial value you wish to use for the field on the right-hand side of the window.

Fields which you cannot use presets for

Apart from a few fields, all fields that can be edited can be predefined. The exceptions are:

- The values for the **Participants**, **Number** and **Keyword** fields cannot be predefined; as using predefining values for these fields would negatively affect the connected functionality.
- The same applies to **Subject** and **Date** fields in documents.

  The subject will be adopted from the used document template or from the file that you want to enter. The current date is always used for the date.
- The **Active** option for products is always active for new data records.

  This exception applies to the Sales pro, Helpdesk and Project modules.
- You will not be able to predefine all of the **Report** and **E-mail** data record type fields.

  The **Form** button to enter predefined field values is not available when selecting this data record type.

Possible content

You define default values in the formula editor. You can access all fields of the current data record and also those data record fields which are already linked with a 1:1 or 1:n cardinality with the data record you are currently creating.

Please note the following restrictions:

- Defaults are always entered exactly as they are defined.

  input help options are automatically translated if variables are used.
- When using the Helpdesk module, links which were set when creating a ticket such as **Customer**, **Submitter** and **Service agreement** and all other ticket links, cannot be used for preallocating field values for technical reasons.

However, primary links for a new job can be used as default values for all types of jobs.

When do I use default values?

Predefined values are typically used in the following instances:

- In the Desktop client, new data records are created using functions such as: **New** or **New link**.
- New linked data records are created through a linked element that has been placed in the **Form Designer** area.
- A data record is duplicated.

Predefined values cannot be used

Predefined values are not transferred in the following cases.

- Data records are created in the Desktop client through **Other actions** or the notification and action service.
- Data records are created via the CAS genesisWorld Web or the CAS genesisWorld app.
- When deploying the Project or Helpdesk modules, data records are created via a project or job template.

Predefined values when duplicating data records

In the **Database** area of the Management Console, fields that use the **Can be duplicated** option have been configured to either accept or reject the value they contain when duplicating the data record.

When duplicating, defaults via the formula editor are only transferred for the fields which do not originate from the original data record. These are the fields for which the **Can be duplicated** option in the **Database** area has not been activated. Predefined fields are never transferred if the **Can be duplicated** option is active. This also applies if these fields are empty in the original data record.

4.3 Data types and operators in the formula editor

The following data types are supported in the formula editor.

> The binary and varbinary data record types are not supported.

The following table shows which data types in the Formula editor can be used for CAS genesisWorld data types.

Data types in the Formula editor	Data types in CAS genesisWorld
Floating-point number	decimal, float, money, real
Integer	bigint, int, smallint, tinyint
Boolean value	bit
Character string	char, varchar, text
Date/Time	datetime

4.4 Minus operator

4.4.1 Minus operator before a data type

Available prefix operators

- Integer
- Floating-point number

The following values cannot be used:

- Date/Time
- Character string
- Boolean value
- Color

4.4.2 Result for Minus before a data type

Combining the **Minus** operator and data types

- Integer returns integer
- Floating-point number returns Floating-point number

There are no results for

- Date/Time
- Character string
- Boolean value
- Color

- Integer (NULL)
- Floating-point number (NULL)
- Date/Time (NULL)
- String (NULL)
- Boolean value (NULL)
- Color (NULL)

4.4.3 Minus between data types

	Integer	Floating point number	Date/Time	Color
Integer	Yes	Yes		
Floating point number	Yes	Yes		
Date/Time	Yes	Yes	Yes	
Color				Yes

4.4.4 Result for Minus between data types

	Integer	Floating point number	Date/Time	Color	Integer (null)	Floating point number (null)	Date/Time (null)	Color (null)
Integer	Integer	Integer			Integer	Integer		
Floating point number	Integer	Integer			Integer	Integer		
Date/Time	Date/Time	Date/Time	Floating point number		Date/Time	Date/Time	Floating point number (null)	
Color				Color				Color
Integer (null)	Integer	Integer			Integer (null)	Floating point number (null)		
Floating point number (null)	Integer	Integer			Floating point number (null)	Floating point number (null)		
Date/Time (null)	Date/Time (null)	Date/Time (null)			Date/Time (null)	Date/Time (null)	Floating point number (null)	
Color (null)				Color (null)				Color (null)

4.5 Plus operator

4.5.1 Plus operator before a data type

Available prefix operators

- Integer
- Floating-point number

The following values cannot be used:

- Date/Time
- Character string
- Boolean value
- Color

4.5.2 Result for Plus before a data type

Combining the **Plus** operator and data types

- Integer returns integer
- Floating-point number returns Floating-point number

There are no results for

- Date/Time
- Character string
- Boolean value
- Color
- Integer (NULL)
- Floating-point number (NULL)
- Date/Time (NULL)
- String (NULL)
- Boolean value (NULL)
- Color (NULL)

4.5.3 Result for Plus between data types

	Integer	Floating point number	Date/Time	String	Color	Integer (null)	Floating point number (null)	Date/Time (null)	String (null)	Color (null)
Integer	Integer	Floating point number	Date/Time			Integer	Floating point number	Date/Time (null)		
Floating point number	Floating point number	Floating point number	Date/Time			Floating point number	Floating point number	Date/Time (null)		
Date/Time	Date/Time	Date/Time				Date/Time	Date/Time			
String				String					String	
Color					Color					Color
Integer (null)	Integer	Floating point number	Date/Time			Integer (null)	Floating point number (null)	Date/Time (null)		
Floating point number (null)	Floating point number	Floating point number	Date/Time			Floating point number (null)	Floating point number (null)	Date/Time (null)		
Date/Time (null)	Date/Time (null)	Date/Time (null)				Date/Time (null)	Date/Time (null)			
String (null)				String					String (null)	
Color (null)					Color					Color (null)

4.6 Examples for formula fields

You can enter the formulas on the following pages into the Formula Editor or copy them via the clipboard.

4.6.1 Controlling mandatory fields via a formula field

Using a formula you can designate a specific field as a mandatory field depending on other field values. For example, the **Sector** field can be transformed into a mandatory field if the data record's subject contains a certain term, or a value in the **Turnover** field is overwritten.

Please note

> You can only use this field as a mandatory field if the field is also displayed in the data record. It is not enough to adopt a value through a link or formula.
>
> In the **Form Designer** area, you can only define a field as a mandatory field if the **Mandatory field** option in the **Database** area of the Management Console is not active for a field.

The mandatory field options in the **Database** area and the settings in the **Form Designer** area are all taken into account. A suitable formula returns the Boolean values of TRUE or FALSE as the results. The result is true if certain values in a field or in a combination of

fields are entered. For example, a specific field is transformed into a mandatory field when the TRUE value is returned. You can define more conditions in the **Form Designer** area.

If you define a mandatory field via the **Type** and **Status** fields, you can vary the **Mandatory field** option with a formula field. The options for a mandatory field in the **Database** module of the Management Console must also be deactivated for the **Type** and **Status** fields. The **Type** and **Status** fields are only available in the Premium Edition.

You can define mandatory fields and formulas for fields on the **General** tab in the object inspector, see "General tab" on page 21.

4.6.2 Controlling the display of fields from linked data records

The displayed fields in a link can be defined via a formula on the **Display** tab, see "Link field" on page 25.

By default, a list of comma-separated values is displayed. If you define the display of fields from a linked data record via a formula, you can display a text in an extra format without commas between the fields.

Example

Let's say you would like to display the first contact date and the permitted contact methods for linked addresses. In addition, you would like to display when these linked addresses were last checked. The field is to be marked red if no check run has been made during the last year.

- ✓ Add a **Link** element in a block.
- ✓ Set the settings you wish to use on the **General** tab in the Object Inspector in the **Linked data record** area, for example, the data record for the linked data record and the link type, see "Object inspector" on page 14.
- ✓ Select the **Formula** option on the **Display** tab.
- ✓ Enter the following formula:

```
"if {Address.Checked on} < CurrentDate()-365 then cRed else
cNoColor"
```

A formula with these settings lets you display the fields of the linked data record. The result of the formula should always be a string.

If you go back to the **General** tab and select a field from **Save link information as text** and if the respective field is not of the varchar type, then you must enter the value of the respective field as a **Result type** in the formula in the Formula Editor.

4.6.3 Control input assistance options with the formula field

The **Additional function** tab contains the **Dynamic input assistance** option. With this you control the input assistance options from the **Single selection type** depending on the value of other fields and/or formulas.

> Use variables for input assistance options to guarantee the multilingual use of the program.

Example

```
IF {Address.Type} = {^Address.Type.Customer} THEN
{^Address.Status.NewCustomer} + "," +
{^Address.Status.ExistingCustomer} + "," +
{^Address.Status.SupportContract}
ELSE IF {Address.Type} = {^Address.Type.ProspectiveCustomer} AND
{Address.Classification= "A" THEN [...]
```

4.6.4 Colored mark if a task exceeds the deadline

When the deadline for a job has been exceeded (is overdue) you want to display it in another color.

- If the deadline has already been exceeded, the field should be displayed in **red**.
- If the job is due today, then the field should be marked and displayed in **yellow**.
- If the deadline is not yet due, the the field should be displayed in **green**.
- If the **Due** field is empty, then the field should be displayed in **blue**.

Therefore you must enter two formulas:

✓ Create a new data record type for the **Task** data record type.

✓ Select **floating point number** in the formula field properties on the **General** tab for **Define result type**.

✓ Enter the **due date** at **Name**.

✎ Now, open the formula editor and enter the following formula:

```
{Task.End}-CurrentDate()
```

✓ Activate the **background color** option on the **Display** tab.

✎ Now, open the formula editor and enter the following formula:

```
if {Task.End}-CurrentDate()<0 then CRed
else if {Task.End}-CurrentDate()=0 then CYellow
else if {Task.End}-CurrentDate()>0 then CGreen
else CBlue
```

4.6.5 Analyzing project profit

For projects the new **Profit/Loss** field displays how successful a project has been. To calculate this, the costs are deducted from the project turnover. Additionally, the field is displayed in green to represent profit and red to represent loss. And if neither profit nor loss has been achieved then the field is displayed in yellow.

✓ Create a new formula field in the **Projects** data record.

✓ Select **floating point number** in the formula field properties on the **General** tab for **Define result type**.

✓ Enter **Profit/Loss** in the **Name** field.

Now, open the formula editor and enter the following formula:

```
{Project.turnover}-{Project.costs}
```

✓ Select **Currency** from the **Format** drop-down list on the **Formatting** tab in formula field properties.

✓ On the **Display** tab enable the **Use background colors** option.

✓ Open the formula editor and enter the following formula:

```
if {@Profit/Loss}>0 then cGreen
else if {@Profit/Loss}=0 then cYellow
else if {@Profit/Loss}<0 then cRed
else cBlue
```

4.6.6 Displaying fields depending on status

With opportunities, you set the **Status** to **Open**, **Won** or **Lost**. As soon as the status is set to **Lost**, however, the **Reason** field is also displayed.

✓ In the **Database** area of the Management Console, create the **Reason** field for the **Opportunity** data record type.

Apply the changes in the **Database** area.

✓ Now, open the **Form Designer**.

✓ Insert the new **Reason** field, you have just created, on to the **Opportunity** tab.

✓ Enable the **Use formula** option on the **Display logic** tab, in the **Visibility** area.

Now, open the formula editor and enter the following formula:

```
if {Opportunities.Status} = "Lost" then true else false
```

The formula can be shortened to:

```
{Opportunities.Status} = "Lost"
```

5 Released default fields

Default fields in the Form Designer

Data record type	Field names
address	Department, Department internal, AIM Alias, District court, Form of address, Number of employees, Leaving date, BIC, Preferred contact method, Preferred language, Sector, Form of address, EBID Information, EBID Status, Start of employment, E-mail (business), E-mail (business 2), E-mail (private), E-mail (private 2), E-mail (central), Permitted contact methods, First contact, First contact date, Company, Company 2, Function, Internal function, Place of birth, Birthday, Birthday card, Verified on, Verified by, Gifts, Not entitled to support, Companies' register, Main postal code, Helpdesk online, Homepage, Homepage private, IBAN, ICQ number, Instant messaging, Category, Classification, Religious denomination, Contact person, Account holder, Account number, Cost center, Credit institution, Country, Country (delivery), Country (private), Last contacted on, Last contact via, Link, Link 2, Link 3, Employee status, MSN identification, Name, Number, Town, Town (delivery), Town (private), PO Box, PO Box (delivery), PO Box postal code, Discount, Tags, Skype username, State/region, State/region (delivery), Nationality, State/region (private), Street, Street (delivery), Street (private), District, District (supplier), District (private), Title, Turnover, Turnover group, Responsible for, Responsible, Preferences, First name, Christmas card, Payment method, Additional info, Additional info (delivery), Additional info (private). Depending on the address type, you may only have read access to some fields.
Logon	Registration date, Anonymous registration, Accompanying persons, Comments, Notes, Cancellation date, Participation
Task	Processed by, Category, Keywords, Subject
Receipts	Date, Supplementary invoice text, Category, Tags, Subject
Report	Subject
Document	Date, Valid from, Valid to, Category, Costs, Number, Keywords, Subject, Turnover
E-mail	Subject, Category, Keywords

Questionnaires	-
External service	Receipt number, Date, Subject
Campaign	Category, Number, Deputy, Subject, Person responsible
Lead	Address information, Action, Assessment, Entered on, Entered by, Number, Product, Source, Subject, Person responsible, Volume, Timeline
Item	-
Price	-
Product	Active, Description, Category, Benefit to customer, Available until, Available from, Unit, Product manager, Product number, Keywords, Deputy, Subject, Technical details
Product use	Adaptation exists, Delivery on, Description, Terminated on, Serial number, Start of maintenance, End of maintenance, Maintenance rate
Product group	Description, Category, Number, Keywords, Subject
Project	Start, Reason, Comment on status, End, Locked for time recording, Category, Contact person, Last contacted on, Last contacted via, Number, Project directory, Reference number, Reference mark, Tags, Deputy, Subject, Person responsible, Person responsible (comm.)
Discount	-
Resource plan	-
Risk	Impact, Indicators, Subject, Person responsible, Probability
Service agreement	Area, Terminated on, Number, Service level, Subject, Start of maintenance, End of maintenance, Status
Expenses	Number, Subject
Phone call	-
Appointment	Start, End, Category, Comment, Mandatory appointment, Keywords, Nominal costs, Subject
Survey	Closing text, Start, Opening text, End, Notes, Subject, Participation with registration, Responsible

Holiday	Category, Comment, Keywords, Subject, Holiday type
Event	Permit registration to individual appointments, Registration deadline, End, Category, Maximum number of accompanying persons, Maximum number of attendees, Minimum number of attendees, Number, City/Town, Start, Subject, Specialist area, Target group
Opportunity	Start, End, Number, Source, Status, Deputy, Subject, Person responsible
Distribution list	Description, Category, Subject
Job	Locked for time recording, Origin, Category, Comment, Number, Reference (producer), Reference (submitter), Tags, Subject, Value date by working time
Time record	-
Target	Description, Subject, Person responsible, Set on, Set for

Default fields which can be prefilled in the Form Designer

The following default fields cannot be inserted with the Form Designer, or be filled in through links or formula fields, but they can be prefilled:

Data record type	Field names
Receipt	Language

Default fields which cannot be prefilled in the Form Designer

The following free default fields cannot be prefilled:

Data record type	Field names
Product	Active
Document	Subject, Date
Survey	Notes, Person responsible

6 Expandable tabs

The following tabs can be expanded with the Form Designer:

Data record type	Tabs
All in the Standard edition	General
Addresses	Billing, Details, Employee data
Registration	Resources
Tasks	Details
Receipts	Details, Document items
Documents	Details, FAQ
E-mails	Notes
Questionnaires	Online
Items	Details
Projects	Order, Details
Product uses	Maintenance
Service agreements	Maintenance
Appointments	Details
Holiday	Details
Events	Registration
Jobs	Details, Ticket

7 Time-triggered updates

With the time-delayed update mechanism in the **Form Designer** area, you can update formula and business ratio fields as well as direct or indirect link fields in selected data records according to an individual schedule.

In the Desktop Client you will see that a similar function **Update values** is available which can be called by users who have sufficient rights.

The fields of deactivated addresses are not updated.

The update is carried out by a service running on the Application Server. Private and confidential data record are also updated. Data records can be read and edited through the services.

The **Action service** is entered as the user on the **Change log** tab.

Checking user accounts and language using formulas

If the current user account is checked using formulas, then the following values will be returned:

- **CurrentUser()** returns **Action service** as the result.
- **IsCurrentUserInGroup(GROUP)** always returns **false** as the result.
- **CurrentLanguage()** always returns the DatabaseLanguage as the result.

Server settings

In the **Server settings** block, you can define the Application Server and the schedule.

✓ Enter the **Application Server** address you want to use to carry out the update.

✓ Define the **Start time**.

The start time is checked in two minute intervals. After starting the Application Server, you may have to wait up to five minutes after the set time until the service starts.

Please note that the update ends at midnight and then starts again on the day you selected for the start time.

✓ Select the **Interval** for updates

✓ Select the **Day of the week** you wish the update to be performed on, the update will then be carried out on that day and at the time you defined.

✓ Activate the **Resume any unexpectedly aborted updates at next start up** option.

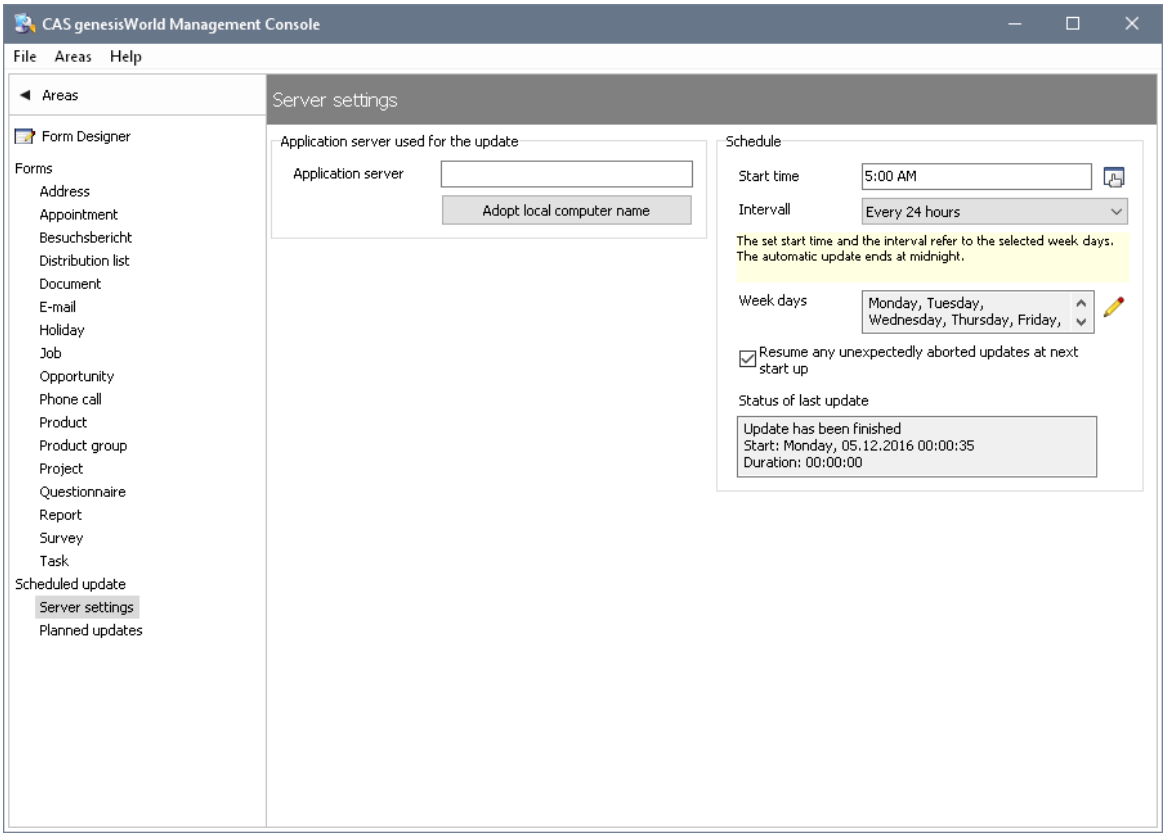
Last update status

In the **Status of last update** field, information on scheduled, current or unexpectedly stopped updates is displayed.

If an update involving large quantities of data takes longer than 24 hours, then the next update will not be started if it is scheduled for the next day.

A new update will be started at next start up, if the following apply:

- The update was not aborted unexpectedly.
- The update is not currently running.



Planned updates

In the **Planned updates** block, you can select which data records are to be updated and also create new updates. The service edits the lists of updates in the order displayed. You can create as many updates as you want for each data record type.

We recommend you use a filter to limit the data, which will help to keep the time required for the update as short as possible.

The order of the updates can be changed using the arrows.