

---

Department of Geoinformatics, Friedrich-Schiller-University, Jena

# RBIS Manual

---

---

## Table of Contents

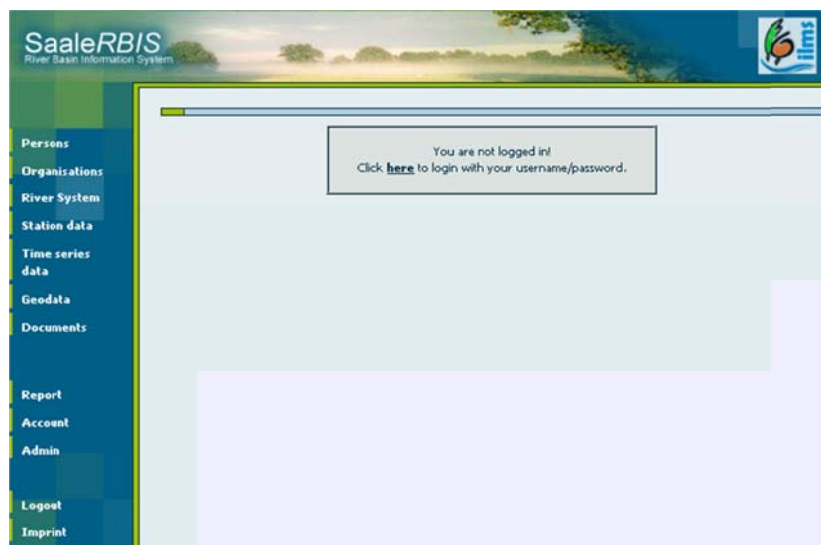
1	Login / Logout .....	3
2	Menu Navigation and Menu Structure .....	4
3	Data Overviews .....	6
3.1	Displaying and Arranging Overview s .....	6
3.2	Display of Single Data Sheets .....	7
4	Searching and Filtering Data.....	8
5	Creating New Data .....	11
6	Deleting and Editing Data.....	14
7	Time Series Data .....	17
7.1	Import/Export of Time Series Data.....	17
7.2	Generating nearby Stations .....	30
7.3	Interpolation / Filling Data Gaps .....	34
8	Geo Data.....	38
8.1	Importing New Geo Data – Summary.....	38
8.2	Import of Data .....	42
8.3	Creating and Editing Maps .....	58
8.4	Editing Data.....	72
8.5	DB Operations .....	80
8.6	Editing Data.....	80
8.7	Query of Data .....	90
8.8	Map Navigation and Map Functions.....	97

---

# 1 Login / Logout

## Login

On the homepage of RBIS all available menu items are already displayed (see Figure 1). In order to use them, you have to login at first. If you are not logged in, a window with a link will appear which leads you to the login page.



*Figure 1: Homepage of SaaleBIS with the window and link which leads you to the login page. On the left side the menu items are already listed. However, you can only use the menu items after your login.*

If you follow the link, you can login on the page that will appear next.

After logging in successfully, you can use the functions of RBIS according to your authorization.

## Logout

You can logout yourself at all times by clicking the menu item “Logout”.

Note: After a certain period of inactivity, i.e. you do not perform any action, you get auto logged out.

---

## 2 Menu Navigation and Menu Structure

Data capture and menu items of RBIS are arranged according to the following categories:

- “Persons”: collaborating and attending persons of data acquisition and data management
- “Organizations”: contributing organizations, which provide, collect or manage data
- “River System”: river segments to which data can be allocated
- “Station data”: data about the stations which provide time series data
- “Time series data”: time series data and their metadata
- “Geo data”: geo data and its visualization
- “Documents”: e.g. project descriptions, help documents, etc.

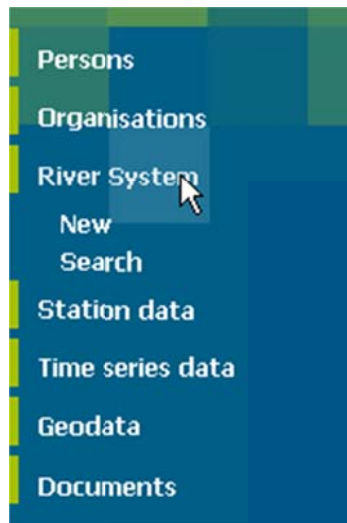
For data input it is advisable to follow this order, i.e. corresponding to the menu items from “Persons” to “Time series data”, in order to allow for a data acquisition which is as complete as possible.



*Figure 2: Menu structure and data classification of RBIS*

---

If you click on the menu items, you get an overview of the recorded data for each category (see **Data Overviews**). Furthermore, two subitems appear: one to search for data (“Search”: see **Searching and Filtering Data**) and one to set up new data (“New”: see **Creating New Data**).



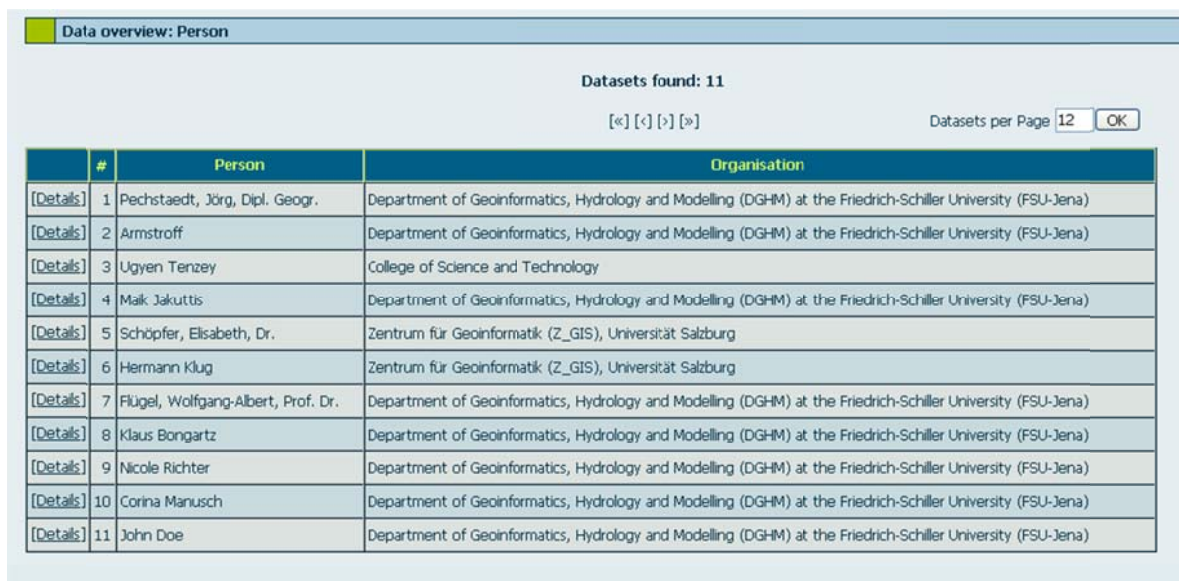
*Figure 3: Here you can see the subitems “New” and “Search” of the menu item “River System”, which are available for each other menu item.*

## 3 Data Overviews

Data overviews (see **Displaying and Arranging Overview**, Figure 4) give you an overall view of a data category's dataset. From these overviews you can call up the data sheets of the single entries (see **Display of Single Data Sheets**).

### 3.1 Displaying and Arranging Overview s

Figure 4 is an example of a data overview. It displays the list of recorded persons. To access the data overview click on the menu item of the corresponding data class, e.g. "River System" in Figure 2.



	#	Person	Organisation
[Details]	1	Pechstaedt, Jörg, Dipl. Geogr.	Department of Geoinformatics, Hydrology and Modelling (DGHM) at the Friedrich-Schiller University (FSU-Jena)
[Details]	2	Armstroff	Department of Geoinformatics, Hydrology and Modelling (DGHM) at the Friedrich-Schiller University (FSU-Jena)
[Details]	3	Ugyen Tenzey	College of Science and Technology
[Details]	4	Maik Jakuttis	Department of Geoinformatics, Hydrology and Modelling (DGHM) at the Friedrich-Schiller University (FSU-Jena)
[Details]	5	Schöpfer, Elisabeth, Dr.	Zentrum für Geoinformatik (Z_GIS), Universität Salzburg
[Details]	6	Hermann Klug	Zentrum für Geoinformatik (Z_GIS), Universität Salzburg
[Details]	7	Flügel, Wolfgang-Albert, Prof. Dr.	Department of Geoinformatics, Hydrology and Modelling (DGHM) at the Friedrich-Schiller University (FSU-Jena)
[Details]	8	Klaus Bongartz	Department of Geoinformatics, Hydrology and Modelling (DGHM) at the Friedrich-Schiller University (FSU-Jena)
[Details]	9	Nicole Richter	Department of Geoinformatics, Hydrology and Modelling (DGHM) at the Friedrich-Schiller University (FSU-Jena)
[Details]	10	Corina Manusich	Department of Geoinformatics, Hydrology and Modelling (DGHM) at the Friedrich-Schiller University (FSU-Jena)
[Details]	11	John Doe	Department of Geoinformatics, Hydrology and Modelling (DGHM) at the Friedrich-Schiller University (FSU-Jena)

*Figure 4: List of the recorded persons.*

If you open one of the menu items for the first time, data entries will be listed according to the point in time of your data input. Each column of the overviews can be arranged in descending and in ascending order.

- To alphabetize columns, click on the name of the corresponding column
- If you click on the name of the column again, the entries appear in reversed order

The number of entries that shall be displayed on one page can be set via the entry field "Datasets per page", which is located right above the table.

## 3.2 Display of Single Data Sheets

You can view single entries/data sheets with the help of the button “Details”.

- Click on “Details” in the respective row of a data overview (see Figure 5).

	#	Organisation
[Details]	1	Department of Geoinformatics, Hydrology and Modelling (DGHM) at the Friedrich-Schiller University (FSU-Jena)

Figure 5: “Details” displays the data sheet of the row entry.

[<](#) [1](#) [2](#) [3](#)

#1 of 4

EDIT	
[Edit]	[Delete]
Contact	
Organisation	Department of Geoinformatics, Hydrology and Modelling (DGHM) at the Friedrich-Schiller University (FSU-Jena)
Function	point of contact
Position	Scientific research and development; Academic education
Contact Address	Institute of Geography; Department of Geoinformatics; Löbdergraben 32
Postcode	D-07743
City	Jena
State	
Country	Germany
e-Mail	cSwafli@uni-jena.de
Telephone	
Telephone	+49 - (0)3641 - 948859
Fax	+49 - (0)3641 - 948852
Mobile	
Online Resource	
Linkage	http://www.geoinf.uni-jena.de
Name	www.geoinf.uni-jena.de
Description	Home page of the Department for Geoinformatics
Function	information

Figure 6: Sample of a organization's data sheet and the links for navigation.

If you view a data sheet (Figure 6), you can use the buttons above the table to navigate between the single data sheets of the data overview.

Data overviews of e.g. stations and time series data contain a link to “Details” as well as links to further data sheets and forms. The link “Show” in the column of “TS-Data” in the time series data overview leads you to the time series data.

---

## 4 Searching and Filtering Data

RBIS enables you to search for data of a selected data category.

- To begin with you have to retrieve the search form of the respective data category, e.g. the search form of the category “Organizations” in Figure 7. → **Retrieving a Search Form**
- Afterwards you can choose the type of search form to enter data. → **Choosing the Type of Search Form**
- When you enter data you can search the database entries for the exact search item or for an entered string → **Column “Exact**

### Retrieving a Search Form

- Click on the menu item “Search” of a data category to search for data of this category



*Figure 7: “Search” leads you to the search form.*

A search form as in Figure 8 will open.



Search data: Organisation		
Search with selection list		
Attribute Name	Attribute Value	Exact
<b>Contact</b>		
Organisation	<input type="text"/>	<input type="checkbox"/>
Function	<input type="text"/>	<input type="checkbox"/>
Position	<input type="text"/>	<input type="checkbox"/>
Contact Address	<input type="text"/>	<input type="checkbox"/>
Postcode	<input type="text"/>	<input type="checkbox"/>
City	<input type="text"/>	<input type="checkbox"/>
State	<input type="text"/>	<input type="checkbox"/>
Country	<input type="text"/>	<input type="checkbox"/>
e-Mail	<input type="text"/>	<input type="checkbox"/>
<b>Telephone</b>		
Telephone	<input type="text"/>	<input type="checkbox"/>
Fax	<input type="text"/>	<input type="checkbox"/>
Mobile	<input type="text"/>	<input type="checkbox"/>
<b>Online Resource</b>		
Linkage	<input type="text"/>	<input type="checkbox"/>
Name	<input type="text"/>	<input type="checkbox"/>
Description	<input type="text"/>	<input type="checkbox"/>
Function	<input type="text"/>	<input type="checkbox"/>

Figure 8: The search form for Organizations.

### Choosing the Type of Search Form

You can choose between two search forms:

- Search with free text or
- Search with selection lists, which includes only possible search hits

You can switch between these two modes by clicking either “search with free text” or “search with selection list” (see

Figure 9).

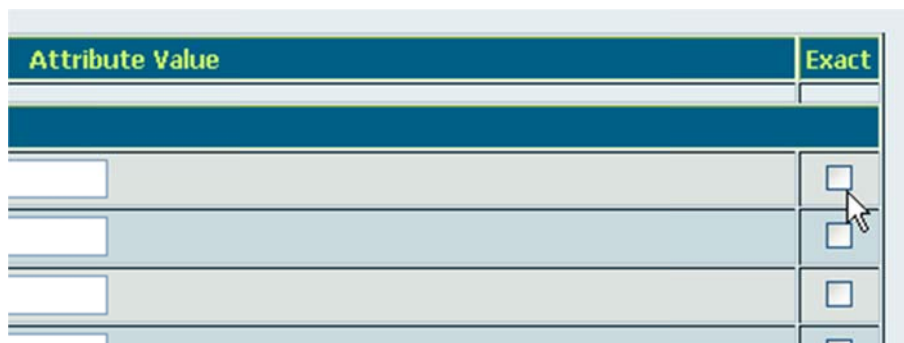
Search data: Time series data	
Search with free text	
Attribute Name	Attribute Value
<b>Title</b>	
Dataset Title	<input type="text"/>
Dataset Description	<input type="text"/>
<b>TS Information</b>	
Kind	<input type="text" value="v"/>

---

*Figure 9: The function "Search with" enables you to switch between search modes of free text or selection lists.*

### **Column "Exact"**

If you tick the checkbox in the column "Exact", the search will be carried out without wildcards. If you do not tick the checkbox, the search items entered in the entry field will be searched for as a string in the data entries irrespective of case sensitivity.

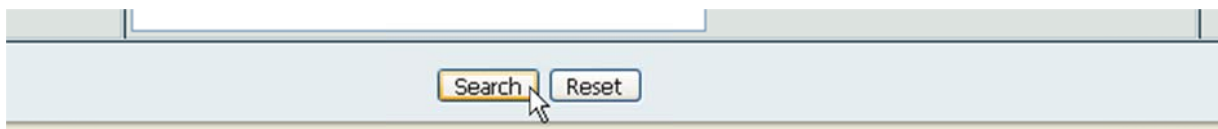
A screenshot of a search form. It features a table with two columns: 'Attribute Value' and 'Exact'. The 'Attribute Value' column contains several rows of data, some of which are partially visible. The 'Exact' column contains checkboxes. A mouse cursor is pointing at one of the checkboxes in the 'Exact' column.

*Figure 10: Detail of a search form with the checkbox "Exact".*

### **Run Search Process**

To start your search click the "Search" button at the end of the search form. Hereupon, the result will be given in an overview.

In order to clear all of your entries click the button "Reset".

A screenshot of the search form showing the 'Search' and 'Reset' buttons at the bottom. The 'Search' button is highlighted with a yellow border, and a mouse cursor is pointing at it.

*Figure 11: The "Search" button serves to start a search. The "Reset" button serves to clear the entries.*

---

## 5 Creating New Data

New data needs to be entered via a data entry form. Since the particular data categories' organization and layout look similar (see Figure 12), the example of the data category "Persons" is used to describe how to enter data. The data entries for persons, organizations and river systems are basically the same and can be entered on a single data sheet. For station data and time series data entries you need to enter rather extensive information which, if necessary, needs to be split on several data sheets.

Templates that have been created beforehand can be used for data entries.

### Retrieving Data Entry Forms

Persons who edit or provide data or who work on the database should be within reach as contact person. For this purpose you need contact information which can be viewed and edited under "Persons".

- Click "Persons"
- Select the subitem "New"



*A data entry form will open (see Figure 12).*

### Filling out Data Entry Forms

In a data entry form red fields indicate necessary entries that need to be filled out in order to continue. Orange fields signal necessary missing entries. Grey fields are filled out automatically.

- You need to fill out at least the red fields

Figure 12: Form to create a new person. Red fields signal necessary entries, orange fields indicate missing necessary information. If any of this information is missing, these colored fields appear after clicking the button "Submit".

In case you have questions about data fields and how to enter information, use the help symbols (?) which can be found next to the data entry fields. Here you can get further information.

### Data Entry Confirmation

The data entry needs to be saved and transferred to the database.

- Press enter or click "submit" at the end of the data entry form.

Figure 13: You need to confirm your entry by clicking "submit". Hereupon, the entry will be taken over to the database.

---

You get informed whether the process has been successful. If any necessary information is missing, data cannot be stored. In this case the form will be loaded again and the particular data field will be highlighted in orange.



*Figure 14: Correct data entry.*

### **Creating Templates**

Several data entries differ only slightly in some data fields, i.e. often similar information needs to be entered. For this reason, entries on some dataset types can be saved as template. These templates can be loaded and data fields can be filled out automatically (see **Use of Templates**).

- Fill out data fields which shall serve as template.
- Name the template by using the entry field at the end of the entry form.
- Save your template: “save as template”

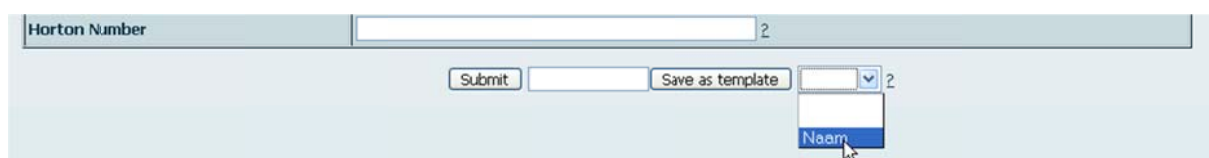


*Figure 15: Save an entry form as template.*

### **Use of Templates**

Templates already contain filled out data fields which can be used when you for example enter data that is predominantly alike.

- Select the template from the pull down menu next to “save as template” (see Figure 16).



*Figure 16: Select the template with the pull down menu.*

---

## 6 Deleting and Editing Data

Data that has been stored in the database can be edited (→ [Edit Data](#)) and deleted (→ [Delete Data](#)) afterwards. Call up an overview of the data category and go to the data sheet where you like to edit an entry by clicking “Details” (see [Display of Single Data](#) SheetsDisplay of Single Data Sheets ).

On each data sheet there are buttons available to delete and edit data.

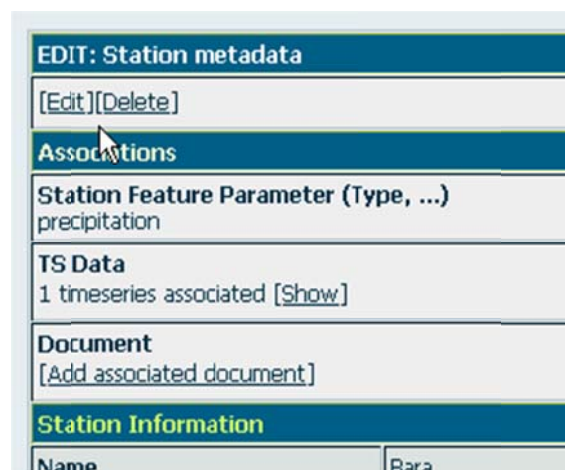


Figure 17: “Edit” and “Delete” are available on each data sheet.

### Edit Data

If you wish to edit and modify an entry:

- Click the button “Edit”.

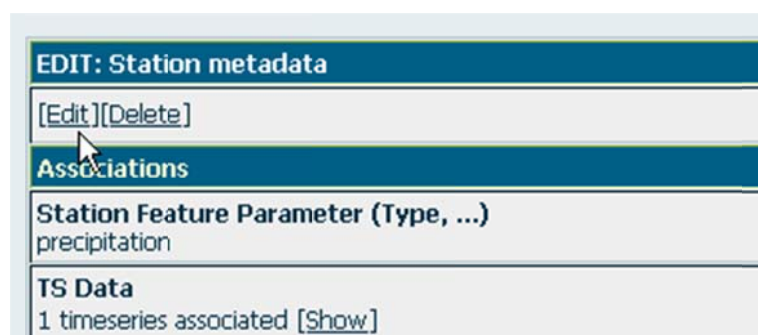
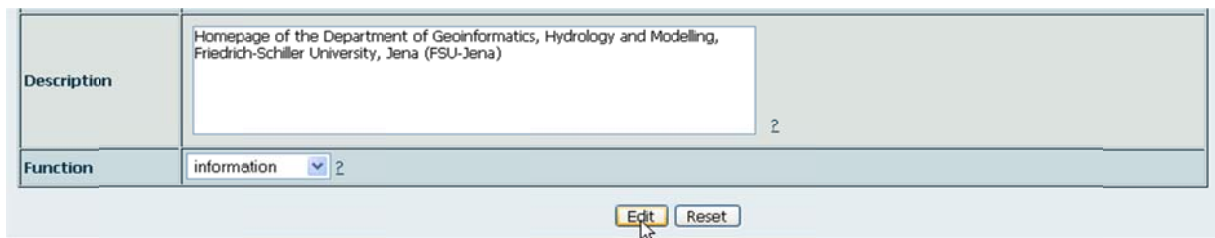


Figure 18: Data sheets can be edited and deleted with these links (see cursor).

---

This step takes you to the data entry form as also described in the chapter creating new data. However, here you do not need to click “submit” but “Edit”.

- “Reset”: clears all entries of the data entry fields and only saved data can be accessed.
- “Edit”: saves all entered changes.



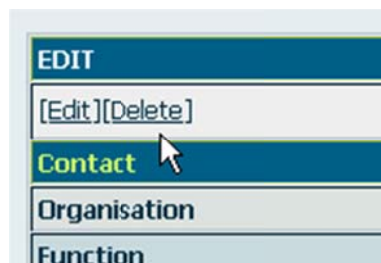
You get informed when processing has been successful.



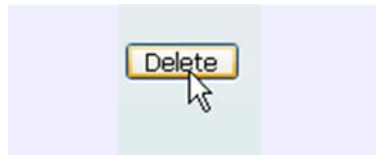
### Delete Data

A data sheet can only be deleted completely when no other data is linked to it. Therefore, a person linked to other data sheets such as time series data or stations cannot be deleted. You may only delete a data sheet when there is no dependency on other data.

- Click “Delete” when you view a data sheet.



- To confirm click “Delete” again.



When the deletion has been successful you get informed.





## 7 Time Series Data

Time series data and its management is one of the core features of RBIS. Accordingly, data management, data display and its functions are more extensive and complex.

Like other data categories the metadata of time series data can be viewed in data overviews. Figure 19 illustrates a time series data overview. Time series data of single time series is given in an extra data sheet form (Figure 21) and can be exported (Figure 24). Furthermore, you can view data gaps, check the data of nearby stations and close data gaps with different interpolation methods.

Datasets found: 319

«

<

>

»

Datasets per Page 20

	#	Dataset Title	Start	End	Time Step	TS Measurement + Data Gaps	TS Data
<a href="#">[Details]</a>	1	Precipitation Bara	1990-01-01	1992-02-29	daily	precipitation <a href="#">[Details]</a>	<a href="#">[Show]</a>
<a href="#">[Details]</a>	2	Precipitation Chazam	1990-01-01	2005-06-30	daily	precipitation <a href="#">[Details]</a>	<a href="#">[Show]</a>
<a href="#">[Details]</a>	3	Data from climate station 'Chukha', Bhutan	1990-01-01	2005-06-30	daily	precipitation <a href="#">[Details]</a>	<a href="#">[Show]</a>
<a href="#">[Details]</a>	4	Precipitation Dagadzong	1990-01-01	1996-06-30	daily	precipitation <a href="#">[Details]</a>	<a href="#">[Show]</a>
<a href="#">[Details]</a>	5	Precipitation Dagana	1996-07-01	2005-04-30	daily	precipitation <a href="#">[Details]</a>	<a href="#">[Show]</a>
<a href="#">[Details]</a>	6	Precipitation Dagapela	1990-01-01	2005-05-31	daily	precipitation <a href="#">[Details]</a>	<a href="#">[Show]</a>
<a href="#">[Details]</a>	7	Precipitation Damphu	1990-04-01	1994-10-03	daily	precipitation <a href="#">[Details]</a>	<a href="#">[Show]</a>
<a href="#">[Details]</a>	8	Precipitation Deothang	2002-06-01	2005-06-30	daily	precipitation <a href="#">[Details]</a>	<a href="#">[Show]</a>
<a href="#">[Details]</a>	9	Precipitation Dorokha (B)	1990-01-01	2005-05-31	daily	precipitation <a href="#">[Details]</a>	<a href="#">[Show]</a>

Figure 19: Detail of a time series data overview. The link in the first column shows the metadata of the time series data. "Show" in the last column "TS-Data" enables you to retrieve and export time series data. "TS Measurement + Data Gaps" offer information about the parameter and data gaps.

### 7.1 Import/Export of Time Series Data

When you view the time series data overview (Figure 19) you have access to the metadata of the single rows:

- Click on "Details" in the particular row (see Figure 19).

Metadata can be edited like other data or they can be deleted. Additionally, data sheets of metadata of time series data contain links which take you to further data sheets with additional information (see Figure 20):

- 
- “Show associated time series data” leads to view and retrieval of the actual time series data (see **Selection and Export of Time Series; Import of Time Series; Deletion of Time Series;**

## Extension of Time Series Data with Gaps

- „Nearby stations“ → Generating nearby Stations
- "Show corresponding station and station type": opens the data sheet of the corresponding station
- "Add associated document": add new documents
- "Details" in the section "TS Measurement + Data Gaps" opens an overview of existing data gaps

EDIT: Time series metadata	
[Edit][Delete]	
Associations	
TS Data	1
[Show associated timeseries data]	
TS Measurement + Data Gaps	
precipitation	[Details] [nearby stations]
Station	4 3
[Show corresponding station and station type]	
Document	2
[Add associated document] 5	
Title	
Dataset Title	Precipitation Bara
Dataset Description	Precipitation from Bara
TS Information	

Figure 20: The data sheet of metadata of time series contains links to the associated stations (2), to the actual time series data (1), to documents (5), to information on data gaps (4), and if necessary to the calculation of nearby stations (3).

## Selection and Export of Time Series Data

The detailed view in

**Time series details**

**Overall statistics and actions**

Dataset title:	Precipitation Daqapela
Number of entries:	5630 (74.12 %)
Dataset start date:	1990-01-01 00:00
Dataset end date:	2005-05-31 00:00
Time step:	daily
Export:	[database data] [file]

**Interval statistics and actions**

Time interval/ Columns:	Hour	Minute	Day	Month	Year	
	Start:	00	00	01	01	1990
	End:	00	00	31	05	2005
	Columns:	<input checked="" type="checkbox"/> precipitation (mm)[1457/4][1][nSI]				

set interval

Number of entries:	5630
Dataset interval:	1990-01-01 00:00 -- 2005-05-31 00:00
Export database data:	[with gaps (unfilled)]
Export (aggregated):	<input checked="" type="radio"/> monthly <input type="radio"/> yearly <input type="radio"/> hydrolog. year <input checked="" type="radio"/> sum <input type="radio"/> average + <input type="checkbox"/> max <input type="checkbox"/> min

download

Show: 

show plot

**Edit data**

Change:	[Add data] [Delete all data] [Extend]
---------	---------------------------------------

Figure 27 illustrates a summary of a time series' time period and the completeness. In addition, you can select a time period and then export it. To open the detailed view:

- Use the link "Show" in the column "TS-Data" in the overview of the time series

Or

- Use the link "Show associated time series data" in the data sheet of the metadata of the time series (No. 1 in Figure 20).

Hereby, the overview of the time series details opens (similar to

**Time series details**

**Overall statistics and actions**

Dataset title:	Precipitation Dagapela
Number of entries:	5630 (74.12 %)
Dataset start date:	1990-01-01 00:00
Dataset end date:	2005-05-31 00:00
Time step:	daily
Export:	[database data] [file]

**Interval statistics and actions**

Time interval/ Columns:		Hour	Minute	Day	Month	Year
	Start:	00	00	01	01	1990
	End:	00	00	31	05	2005
	Columns:	<input checked="" type="checkbox"/> precipitation (mm)[1457/4][1][nST]				

set interval

Number of entries:	5630
Dataset interval:	1990-01-01 00:00 -- 2005-05-31 00:00
Export database data:	[with gaps (unfilled)]
Export (aggregated):	<input checked="" type="radio"/> monthly <input type="radio"/> yearly <input type="radio"/> hydrolog. year <input checked="" type="radio"/> sum <input type="radio"/> average + <input type="checkbox"/> max <input type="checkbox"/> min

download

Show:

show plot

**Edit data**

Change:	[Add data] [Delete all data] [Extend]
---------	---------------------------------------

Figure 21).

Time series details

Overall statistics and actions

Dataset title:

Precipitation Dagapela

Number of entries:

5630 (74.12 %)

Dataset start date:

1990-01-01 00:00

Dataset end date:

2005-05-31 00:00

Time step:

daily

Export:

[\[database data\]](#)
[\[file\]](#)

Interval statistics and actions

Time interval/  
Columns:

Hour

Minute

Day

Month

Year

Start:

00

00

01

01

1990

End:

00

00

31

05

2005

Columns:

☒ precipitation (mm)
 

1457/4

1

nST

set interval

Number of entries:

5630

Dataset interval:

1990-01-01 00:00 -- 2005-05-31 00:00

Export database data:

[\[with gaps \(unfilled\)\]](#)

Export (aggregated):

☒ monthly
 ☐ yearly
 ☐ hydrolog. year

☒ sum
 ☐ average +
 ☐ max
 ☐ min

download

Show:

show plot

Edit data

Change:

[\[Add data\]](#)
[\[Delete all data\]](#)
[\[Extend\]](#)

Figure 21: Data sheet of a time series with deactivated plot.

In the section “Overall statistics and actions” information on the time period, the dataset start date and end date and completeness of the time series is listed. Furthermore, you have two links to export the entire time series data (Figure 22):

- “Database data”: exports the time series data like they are stored in the database (no default values, no date gaps)
- “File”: exports the original file that has been uploaded

If you are interested in metadata of the time series’ data:

- Click on the link in the row “Dataset title”, which calls up the data sheet of the time series.

Time series details	
<b>Overall statistics and actions</b>	
Dataset title:	<a href="#">Precipitation Chazam</a>
Number of entries:	5660 (99.98 %)
Dataset start date:	1990-01-01 00:00
Dataset end date:	2005-06-30 00:00
Time step:	daily
Export:	<a href="#">[database data]</a> <a href="#">[file]</a>

Figure 22: Database data und file are used for the export. By clicking on the link "Dataset title" the metadata of the time series is displayed.

In the section "Interval statistics and actions" you can restrict the time period of the time series you want to download. In the row "Dataset Interval" you can see the currently selected time period.

- Enter the time interval in the entry fields
- Confirm the interval with "set interval"

Interval statistics and actions																
Time interval/ Columns:	<table border="1"> <thead> <tr> <th>Hour</th> <th>Minute</th> <th>Day</th> <th>Month</th> <th>Year</th> </tr> </thead> <tbody> <tr> <td>Start: 00</td> <td>00</td> <td>01</td> <td>01</td> <td>1990</td> </tr> <tr> <td>End: 00</td> <td>00</td> <td>30</td> <td>06</td> <td>2005</td> </tr> </tbody> </table>	Hour	Minute	Day	Month	Year	Start: 00	00	01	01	1990	End: 00	00	30	06	2005
	Hour	Minute	Day	Month	Year											
	Start: 00	00	01	01	1990											
	End: 00	00	30	06	2005											
Columns: <input checked="" type="checkbox"/> precipitation (mm)[1/1][1][nST]																
<a href="#">set interval</a>																

Figure 23: The time interval needs to be entered in the corresponding entry fields. Afterwards you need to click on "set interval". The button "nST" leads you to the view of the "nearest station". The links next to this button indicate the number of gaps and enable an interpolation.

You can download aggregated time series in sum values or mean values for months, years or hydrological years. Furthermore, maximum and minimum values can be displayed.

- Tick the checkboxes for the time interval of the aggregation (monthly, yearly or hydrolog. year).
- Click on "download"



Number of entries:	790
Dataset interval:	1990-01-01 00:00 -- 1992-02-29 00:00
Export database data:	[database data] [SQL]
Export (aggregated):	<input checked="" type="radio"/> monthly <input type="radio"/> yearly <input type="radio"/> hydrolog. year <input checked="" type="radio"/> sum <input type="radio"/> average + <input type="checkbox"/> max <input type="checkbox"/> min <input type="button" value="download"/>

Figure 24: You can aggregate the data for the time interval which you have chosen beforehand. Tick the required checkboxes and click "downloads".

## Import of Time Series Data

If you wish to add new data to a time series, click "Import or add data" at the end of the form "time series details" (

Time series details

Overall statistics and actions

Dataset title:	Precipitation Daqapela
Number of entries:	5630 (74.12 %)
Dataset start date:	1990-01-01 00:00
Dataset end date:	2005-05-31 00:00
Time step:	daily
Export:	[database data] [file]

Interval statistics and actions

Time interval/ Columns:		Hour	Minute	Day	Month	Year
	Start:	00	00	01	01	1990
	End:	00	00	31	05	2005
	Columns:	<input checked="" type="checkbox"/> precipitation (mm)[1457/4][1][nST]				
<input type="button" value="set interval"/>						

Number of entries:	5630
Dataset interval:	1990-01-01 00:00 -- 2005-05-31 00:00
Export database data:	[with gaps (unfilled)]
Export (aggregated):	<input checked="" type="radio"/> monthly <input type="radio"/> yearly <input type="radio"/> hydrolog. year <input checked="" type="radio"/> sum <input type="radio"/> average + <input type="checkbox"/> max <input type="checkbox"/> min <input type="button" value="download"/>

Show:	<input type="button" value="show plot"/>
-------	--

Edit data

Change:	[Add data] [Delete all data] [Extend]
---------	---------------------------------------

Figure 21).



Show:	<button>show plot</button>
<b>Edit data</b>	
Change:	<a href="#">[Import data]</a>

Figure 25: If you wish to update or add new data to time series, you can use "Import data".

The form for the data import will open ("Upload time series data", see Figure 26):

Upload timeseries data	
<b>Dataset title:</b>	Windgeschwindigkeit Geraberg
Choose a predefined template:	<input type="text"/> ?
Specify number of value columns:	<input type="text"/>
1. Select type of parameter:	<input checked="" type="radio"/> Physical parameter <input type="radio"/> Quality parameter
Upload this file:	<input type="text"/> <button>Durchsuchen...</button>
Specify file format:	<input checked="" type="radio"/> values divided by tab (*.txt) <input type="radio"/> values separated by ; (*.csv)
Specify date format:	<input checked="" type="radio"/> [year/month/day] <input type="radio"/> [day/month/year] <input type="radio"/> [month/day/year]
2. Time shift*:	<input type="checkbox"/> Use time shift
Comment lines start with:	# <input type="text"/>
Specify value for missing data**:	<input type="text"/>
Specify time step**:	daily <input type="text"/>
Template name:	<input type="text"/> <button>Save as template</button>
3.	<button>Send File</button>
* (Date will be shifted to the nearest reference date, which is set by the first date.)	

Figure 26: Form for data import.

Time series should be given in a text or CSV file and should only contain data, i.e. date of measurement and values. Additional metainformation in the header needs to

be set up as comment. At the end of the file, after the data entries, there must not be any comment. Text files need to agree with the following rules:

- comments need to be introduced with # or \*
- data needs to be in ascending order
- TAB serves as column delimiter (text file)
- the first entry needs to contain a measurement
- measurements need to be numeric
- decimal delimiter is “,” or “.”
- data for missing entries needs to be consistent

```
#STAT_ID      4377
#Stationsname  SANDBERG-KILIANSHOF
#Name SANDBERG-KILIANSHOF täglich Temperatur
#Typ Temperatur
#Einheit      °C
#Description Temperatur Mean  KL_DWD-Datensatz
#Description Temperatur Min   KL_DWD-Datensatz
#Description Temperatur Max   KL_DWD-Datensatz
1965-01-01  2.2  1.5  5
1965-01-02  0.2  0    1.6
1965-01-03 -0.8 -1.5 0.5
1965-01-04 -2.8 -4   -1
1965-01-05 -2   -5  -1.2
```

Figure 27: Example file

1. Here you can select the number of columns (do not count the date column) and select the type of the values. According to the selected type a list of parameter and units will appear in the pull down lists. The form in Figure 28 appears automatically after the selection of the number of columns.

#	Colno.	Description/Type	Unit	Description
1	1	<input type="text"/>	<input type="text"/>	<input type="text"/>

Figure 28: Enter Parameter and Unit

2. Angabe zur Datei:

- Give the path of the file you wish to import

- Specify the file format (text or CSV file)
- Specify the type of the date
- The function “time shift” corrects the given input time. The time shift in a time interval is corrected. The reference for shifting is the first given time. (For example: 5-minutes values: 12:30 12:35 12:41 12:48 => 12:30 12:35 12:40 12:50)
- Specify the used character for the beginning of a comment line
- Specify the time interval and format of the missing values

3. To finish the import click „Send File“

All data inputs can be saved as template.



Figure 29: Save data input as template

When the import has been successful, the form to change metadata will open automatically (see Figure 30). Now you have to specify the type of uploaded data.

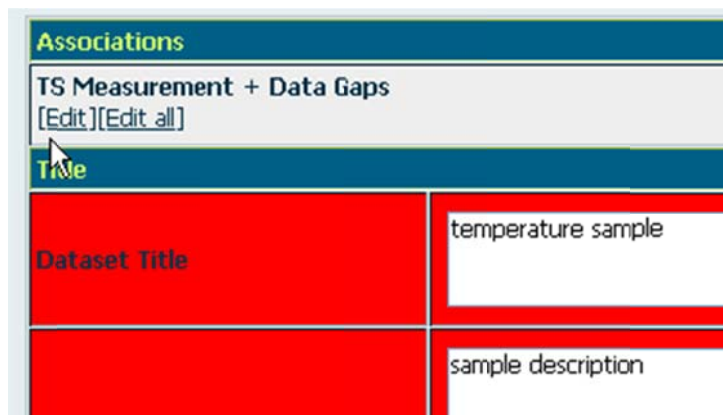


Figure 30: After uploading the data you have to inform RBIS about the type of data with the help of this link.

- You should use the link “Edit all” if you have uploaded data with several columns. With the help of this link you can edit all columns.

- The link “Edit” specifies only one column, so that you need to edit imports containing more than one column several times.

Associations	
Change Category [change to quality parameters]	
Timeseries Information	
Colno.	1
Description/Type	temperature 2
Unit	°C 2
Description	<div></div> 2

[Edit](#)  
[close window](#)

Figure 31: Enter the type of data. You can "change to quality parameters" with the corresponding button.

### Deletion of Time Series Data

You can delete the entire time series data with the help of the button “Delete all data”. Then, you are asked to confirm the deletion.

**Edit data**  
 Change: [Add data] [Delete all data] [Extend]

Figure 32: You can delete and import additional data and extend missing data of a time series with the corresponding links above.

---

## Extension of Time Series Data with Gaps

Time series data can be extended by adding so called virtual gaps. These virtual gaps do not contain any data. As an example, the extension can be used for an extrapolation of data.

The screenshot shows a web interface with a 'Show:' label and a 'show plot' button. Below this is a section titled 'Edit data'. Under 'Edit data', there is a 'Change:' label followed by three buttons: '[Import or add data]', '[Delete all data]', and '[Extend]'. A mouse cursor is pointing at the '[Extend]' button.

Figure 33: Contrary to the function "Import or add data" a time series gets filled with missing data when you click "Extend".

- Enter the date in the entry field or use the adjacent calendar symbol.
- By clicking "Set" the extension will be carried out.

The screenshot shows a web interface for a dataset titled 'Precipitation Barpha Bhumi'. It features a table with the following columns: 'virtual start', 'start', 'end', 'virtual end', and 'action'. The 'start' column contains the date '1979-01-01' and the 'end' column contains '2000-12-31'. The 'virtual end' column has an input field containing '2001-12-31' and a calendar icon. The 'action' column has a 'Set' button. Below the table, there are four bullet points explaining the functionality of virtual gaps.

virtual start	start	end	virtual end	action
<input type="text"/>	1979-01-01	2000-12-31	<input type="text" value="2001-12-31"/>	<input type="button" value="Set"/>

- virtual gaps extend the data at the beginning and/or end of timeseries data  
- virtual gaps will be added to every column  
- if virtual start/end differs, old interpolation results will be delete  
- to remove the virtual gaps choose 1979-01-01(virtual start) and/or 2000-12-31 (virtual end)

Figure 34: Enter the date in the entry field or use the calendar symbol. Click "Set" to complete the process.

The screenshot shows a confirmation message: 'Virtual start: No changes. Virtual end: successfully changed/added.' Below this is a table with the same structure as Figure 34. The 'start' column contains '1979-01-01' and the 'end' column contains '2000-12-31'. The 'virtual end' column has an empty input field and a calendar icon. The 'action' column has a 'Set' button.

virtual start	start	end	virtual end	action
<input type="text"/>	1979-01-01	2000-12-31	<input type="text"/>	<input type="button" value="Set"/>

Figure 35: The time series has been extended successfully.

---

## Display/Plot of Time Series Data

It is possible to visualize the data by clicking “Show plot”. You can choose which data interval you would like to view by entering the date in the field “Time Interval”, which can be found in the section “Internal statistics and actions”

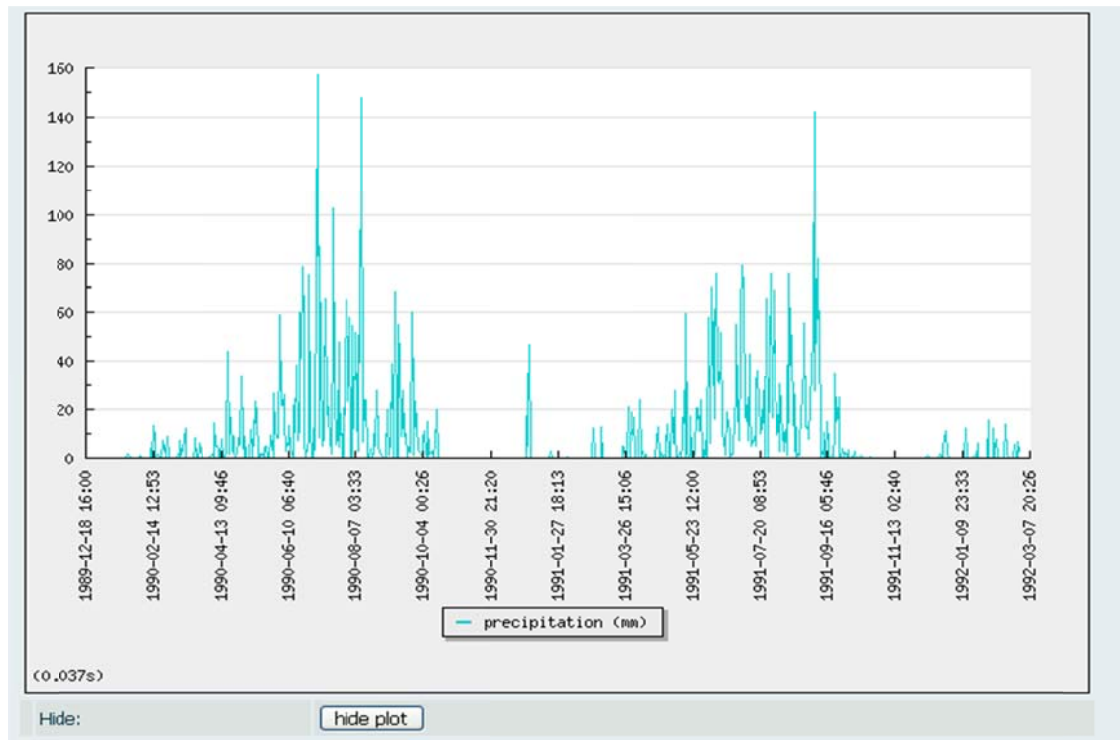


Figure 36: Sample plot of precipitation data. You can deactivate the graph with "hide plot".

## 7.2 Generating nearby Stations

Time series data often have data gaps or need to be extended, i.e. extrapolated. In both cases – interpolation and extrapolation – nearby stations or rather their time series data are used.

Therefore, RBIS offers a function to search for the nearest stations of time series. You can find this function on the time series' form (see Figure 37) or on the form for metadata of a time series (see Figure 38).

Interval statistics and actions

Time interval/  
Columns:

	Hour	Minute	Day	Month	Year
Start:	00	00	01	01	1990
End:	00	00	30	06	2005
Columns:	<input checked="" type="checkbox"/> precipitation (mm) <div> <div>1/1</div> <div>!</div> <div>nST</div> </div>				

set interval

Figure 37: The first link (here: the proportion 1/1) shows the existing gaps of a time series. The second link enables you to carry out an interpolation of these gaps. The third link "nST" displays all stations in a chosen distance.

EDIT: Time series metadata

[Edit]
[Delete]

Associations

TS Data

[Show associated timeseries data]

TS Measurement + Data Gaps
precipitation

[Details]
[nearby stations]

Station

[Show corresponding station and station type]

Document

[Add associated document]

Title

Dataset Title

Precipitation Bara

Dataset Description

Precipitation from Bara

Figure 38: Use this link to search for nearby stations.

On the page that will follow (see Figure 40) you can set up diverse criteria, which the stations shall meet:

- Maximal distance
- Number of stations that shall be given
- Time intervals of the corresponding time series
- Heights of the station above sea level
- Minimum of correlation

You can arrange the results according to distance or to  $R^2$ . To calculate  $R^2$  of the selected stations to the reference station use the link "update calculation of  $r^2$ " at the end of the menu.

Mongar "A"	81.516	Meteorological Data Mongar	1600	0.07
<a href="#">show plot</a>				
<a href="#">show gap information</a> (max last 10 gaps)				
<p>* <math>r^2</math> calculated by using all equal timestamps excluding NULL &amp; default values</p> <p><a href="#">update calculation of <math>r^2</math></a> (NOTE: execution time depends on the number of missing/new</p>				

Figure 39: The link "update calculation of  $r^2$ " serves to calculate the coefficient of determination.

**Please click "start" and wait.**

Execution time depends on the number of missing/new time series with the same measurement and on the CPU load.

> > > start < < <

After entering all required criteria click "Ok" or press enter (see Figure 40). Depending on the criteria "number of TS" time series will be displayed which comply with the requirements (e.g. 5 in Figure 40).

For an interpolation between time series it is interesting to know to what extent time series are complete. In case of existing data gaps of the reference station, information on the consistency of the generated time series can be gathered in table form by clicking on "show gap information". Here, the term reference station is used for the station whose nearby stations have been calculated.

However, in Figure 42 data gaps are displayed graphically in a timeline. This graph can be activated or deactivated with the help of the button "Show plot".



Station: Chazam / TS Type: precipitation

Maximum distance (m): 0 and/or number of TS: 5 TS-data between and

Elevation (m) between and Rsquared ( $r^2$ ): >0 Order by ☒ distance ☐ rsquared OK

Station	Distance (km)	Dataset title	Elevation	$r^2$ *	TS-Start	TS-End
Chazam		Precipitation Chazam			1990-01-01	2005-06-30
Kanglung in Trashigang	15.261	Rainfall in Kanglung	1930	0.13	1996-01-01	2000-01-02
Kanglung in Trashigang	15.261	Meteorological Data Kanglung	1930	0.06	1996-01-01	2005-10-31
Thrimshing	68.62	Precipitation Thrimshing		0.45	1990-01-01	2005-06-30
Mongar "A"	81.516	Rainfall in Mongar	1600	0.13	1996-01-01	2000-01-03
Mongar "A"	81.516	Meteorological Data Mongar	1600	0.07	1996-01-01	2005-11-30

show plot

show gap information  
(max last 10 gaps)

\*  $r^2$  calculated by using all equal timestamps excluding NULL & default values  
update calculation of  $r^2$  (NOTE: execution time depends on the number of missing/new time series with the same measurement)

Figure 40: Enter search criteria on which basis you would like to select stations.

hide gap information

Stations with data for gap from 1996-12-31 to 1996-12-31

Kanglung in Trashigang	15.261	Meteorological Data Kanglung	1930	0.06	
Kanglung in Trashigang	15.261	Rainfall in Kanglung	1930	0.13	
Mongar "A"	81.516	Rainfall in Mongar	1600	0.13	
Mongar "A"	81.516	Meteorological Data Mongar	1600	0.07	
Tashiyangtshi	84.924	Rainfall in Tashiyangtshi	1830	0.11	

\*  $r^2$  calculated by using all equal timestamps excluding NULL & default values  
update calculation of  $r^2$  (NOTE: execution time depends on the number of missing/new time series with the same measurement)

Figure 41: Information on the data gaps of the selected stations.

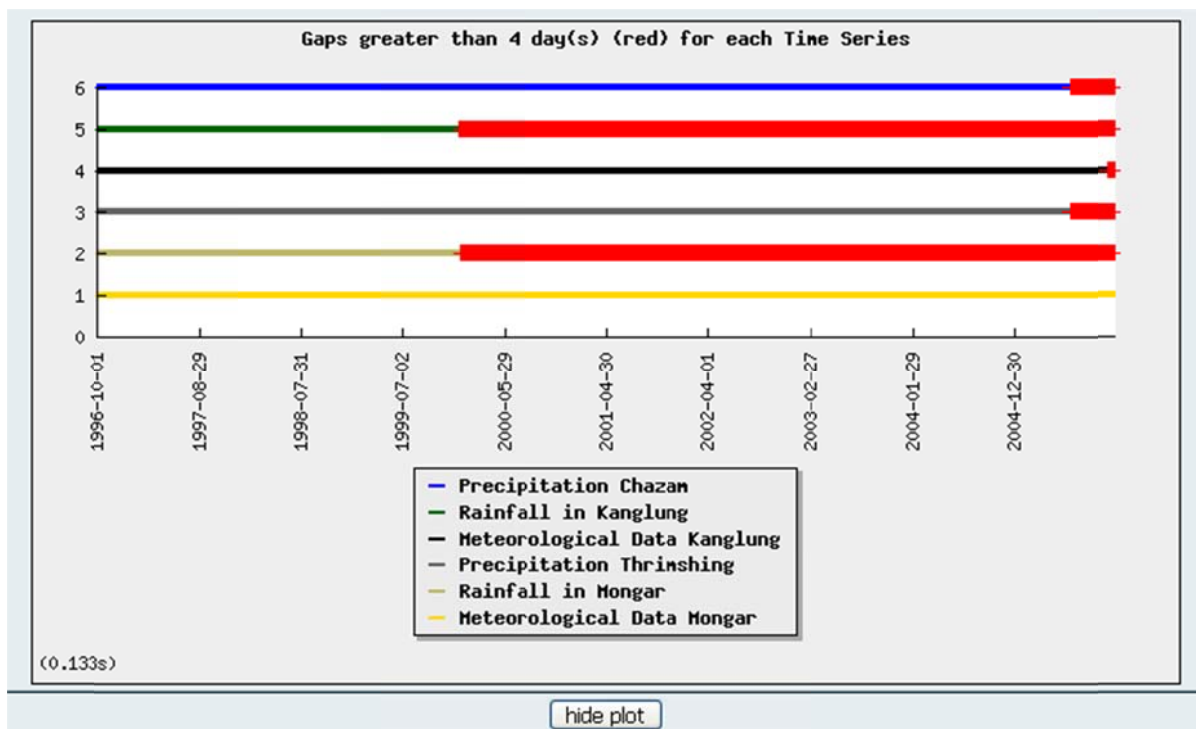


Figure 42: Sample of a plot of data gaps of filtered time series.

## 7.3 Interpolation / Filling Data Gaps

Data gaps can be interpolated and extrapolated in RBIS. As an alternative you can also interpolate data gaps externally and then import them. For both ways change to the form “TS-Data”:

- Use the link “Show” in the column “TS-Data” in the overview of the time series (see Figure 19)

Or

- Use the link “Show associated time series data” in the data sheet of the metadata of the time series (No. 1 Figure 20).

Call up the menu for interpolation:

Use the link “I” as shown in

- Figure 43.

The menu of the interpolation contains a section where you can add external interpolation data and a section where you can select internal interpolation method sets. The internal interpolation method sets are listed in the lower part of the page. You can change them or create new method sets if authorization is given.

Generally, you can use the following interpolation procedures:

- Inverse Distance Weighting (IDW)
- IDW with elevation correction
- Nearest neighbor
- Linear regression
- Interpolation

**Interval statistics and actions**

Time interval/  
Columns:

	Hour	Minute	Day	Month	Year
Start:	00	00	01	01	1979
End:	00	00	14	12	2000

Columns: ☒ temperature (°C) 17/1 **I** [nST]

[set interval](#)

Figure 43: The link "I" leads you to the interpolation menu. If the link is highlighted in red, the gaps have not been filled by interpolation yet. If the link is green, the interpolation has been carried out complete.

Internal Interpolation Method Set		External Interpolation Method	
Method Set:	[1a] IDW & elevation correction (5-3) <a href="#">Execute</a>	Method Set:	Experiment <a href="#">Durchsuchen...</a>
		Upload this file:	<a href="#">Durchsuchen...</a>
		Specify file format:	<input checked="" type="radio"/> Standard format [year/month/day] <input type="radio"/> Standard format [day/month/year] <input type="radio"/> Standard format [month/day/year]
		Specify upload type:	<input checked="" type="radio"/> Add (data of already filled gaps is preserved) <input type="radio"/> New (data of already filled gaps will be deleted)
		<a href="#">Upload</a>	

**Internal Interpolation Method Set (interpolation rules)**

Create a new internal method set: [new](#)

Position Order	Method	Max gap length	Max Stations	Min Stations	Min Rsquared	Max Distance	Parameter	
[1a] IDW & elevation correction (5-3) <a href="#">[Edit]</a> <a href="#">[Delete]</a>								
*Inverse distance weighting (IDW) with elevation correction (max 5 stations - min 3 stations are used). If elevation is incorrect (not given) only IDW is used.								
<a href="#">[Add]</a>								
1	IDW & elevation		5	3	0.7		2	<a href="#">[Edit]</a> <a href="#">[Delete]</a>
2	inverse distance weighting (IDW)		5	3			2	<a href="#">[Edit]</a> <a href="#">[Delete]</a>
[1] IDW (5-3) <a href="#">[Edit]</a> <a href="#">[Delete]</a>								
*Inverse distance weighting (IDW) (max 5 stations - min 3 stations are used)								
<a href="#">[Add]</a>								
1	inverse distance weighting (IDW)		5	3			2	<a href="#">[Edit]</a> <a href="#">[Delete]</a>
[2a] linear regression (0.7) <a href="#">[Edit]</a> <a href="#">[Delete]</a>								
*Linear regression with the values of the station with the best r <sup>2</sup> in a radius of 10 stations is used if r <sup>2</sup> is at least 0.7 or greater.								
<a href="#">[Add]</a>								

Figure 44: Sample of the menu with the sections of the internal and external procedures as well as the overview of internal interpolation method sets.

- Select an interpolation method from the pull down menu and click “execute” to confirm (see Figure 45).

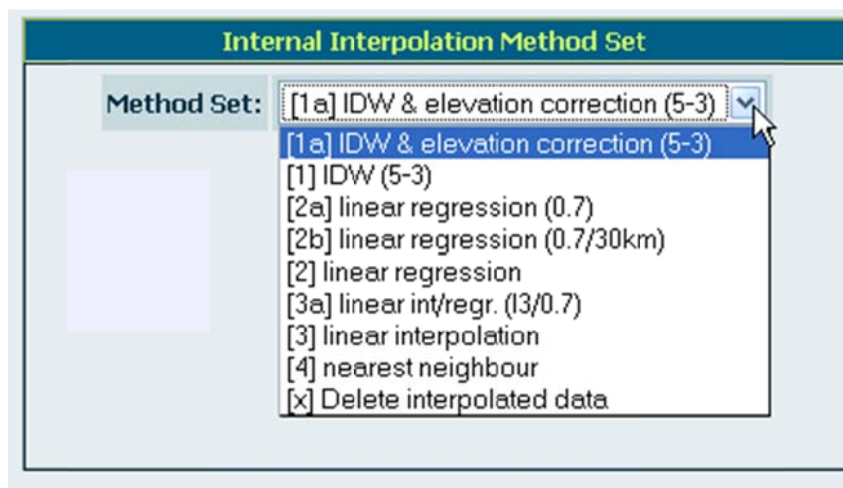


Figure 45: You can select generated interpolation methods in this pull down menu.

The result of the interpolation will be given in an extra data sheet and can be used now.

Associations	
Interpolation method set / Used time series [Show method set] / [Show used time series]	
Time series [Metadata] [Time series data]	
Interpolation Process Information	
Date	2008-10-13
Decription	No matching time series found!.No matching method found!.
Complete	yes
Interpolation Method Set	
Used Method Set	[1a] IDW & elevation correction (5-3)
Description	*Inverse distance weighting (IDW) with elevation correction (max 5 stations - min 3 stations are used). If elevation is incorrect (not given) only IDW is used.
Parameter Set	IDW & elevation: [5][3][0.7]   2 inverse distance weighting (IDW): [5][3]     2
Measurement and Unit	
Description/Type	temperature
Unit	°C
Dataset	
Dataset Title	temperature sample

Figure 46: The data sheet "Interpolation Process Information" gives information on the interpolation which has been carried out.

## Creating New Interpolation Methods Sets

In the interpolation menu you can not only use prefabricated interpolation methods but create your own method sets.

- Click “new” in the section “Internal Interpolation Methods Set” of the interpolation menu.

Position Order	Method	Max gap length	S
<b>[1a] IDW &amp; elevation correction (5-3)</b> [Edit] [Delete] *Inverse distance weighting (IDW) with elevation correction (not given) only IDW is used. [Add]			
1	IDW & elevation		5

Figure 47: The button “Create a new internal method set” enables you to add new interpolation method sets to the already existing interpolation method sets listed below.

In the form which will appear next you can enter the interpolation method set and set further parameters, e.g. minimal and maximal number of stations.

Edit Data	
<b>Method Set List</b>	
Position/Order	1 2
Max gap length	2
Max Stations	5 2
Min Stations	3 2
Min Rsquared	0.7 2
Max Distance	2
Parameter	2 2
Dataset ID	53
<b>Method</b>	
Method	IDW & elevation 2
[Edit] [Reset]	

Figure 48: Select the interpolation method set and further parameters.

---

## 8 Geo Data

**Note:** For editing and visualizing geo data RBIS falls back to JanusWeb – a product of Codematrix GmbH Jena – which is integral part of the information system. The available help, given to this topic, is taken from the documentation of JanusWeb. In order to prevent misunderstandings and to offer a consistent help, the software is called RBIS/JanusWeb in this chapter.

Import, management and download of time series data and geo data are possible processes when working with RBIS. There is a search form available for geo data as well as for remaining data categories (see **Searching and Filtering Data**). Furthermore, it is possible to edit metadata (see **Deleting and Editing Data**). By clicking the link “view map data” on the data sheet for geo data the map will be given.

### 8.1 Importing New Geo Data – Summary

The procedure of importing new geo data is different in comparison to the import of the remaining data categories. If you click “New”, the import form of RBIS/JanusWeb is loaded (see **Import of Data**; Figure 49). Here you can carry out the import. Please do not forget to give the SRID of the geo data’s projection when you import data!



Figure 49: Here you can see the import form. Select the format of the geo data with the help of the pull down menu and give the directory path. Tick the box if you wish to upload data from the archive.

When the data is imported you need to switch to the overview of the imported geo data’s format. For this purpose, click the subitem “view data” of the menu item “edit data”. Click the button “create linkable layer” (see **Generate Data as linkable Layer**)





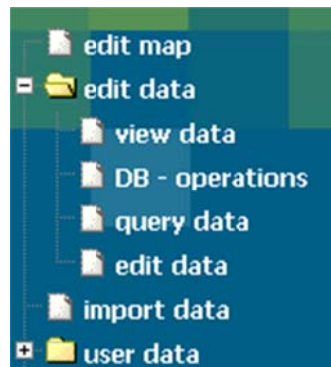


Figure 50: Switch to "view data" when the import has been successful.

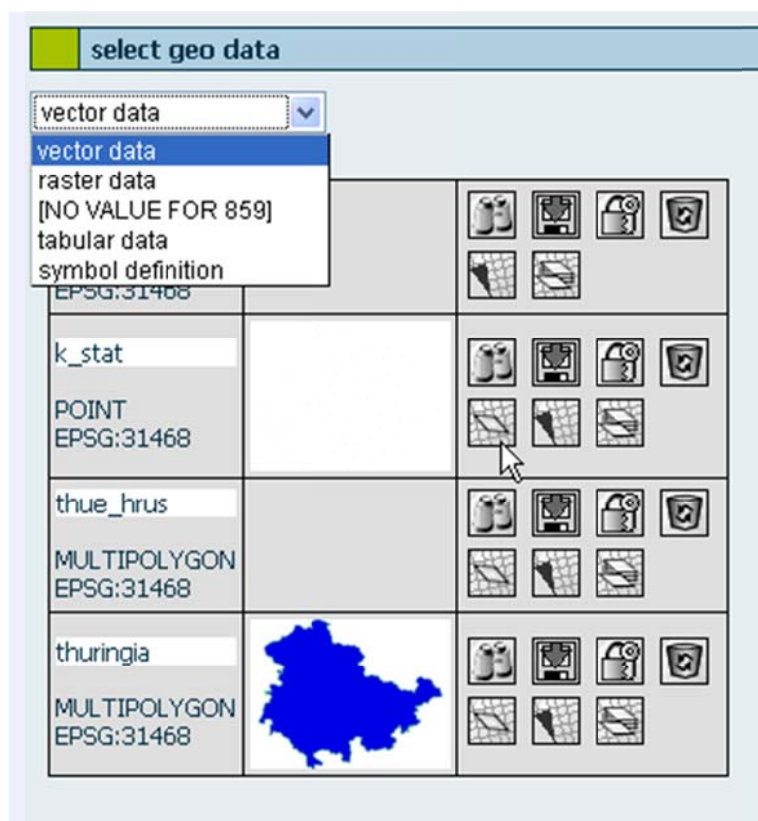


Figure 51: Overview of the tables of an existing data type. Select the imported data type that you have imported beforehand and click the symbol to create a linked layer (see cursor).

If you click on the link "generate a linked layer", a layer node of the geo data will get set and then opens (see Figure 52). You need to give the projection for this layer. For this purpose, set the attribute "projection" and use its link "select".

**LAYER**

help	position	key	value	remove
		<b>LAYER</b>	k_stat	
?	1	NAME	k_stat	<input type="checkbox"/>
?	2	STATUS	ON <input type="button" value="v"/>	<input type="checkbox"/>
?	3	<b>CLASS</b>	k_stat	<input type="checkbox"/>
?	4	TOLERANCE	0	<input type="checkbox"/>
?	5	<b>DATASOURCE</b>	select	<input type="checkbox"/>
?	6	<b>PROJECTION</b>		<input type="checkbox"/>
			select node <input type="button" value="v"/>	<input type="button" value="save"/>

Figure 52: You need to allocate the attribute "Projection" to the linked layer with the help of the pull down menu.

Please enter the following into the entry field of the projection without brackets:

- init=epsg{EPSG-Nr.}
- Then, click "save".

**LAYER » PROJECTION**

help	position	key	value	remove
		<b>LAYER</b>	k_stat	
		<b>PROJECTION</b>		
?	1	PARAMETER	init=epsg:31468	<input type="checkbox"/>
			select node <input type="button" value="v"/>	<input type="button" value="save"/>

Figure 53: Enter the EPSG-number in this way and click "save".

With the help of the button "activate layer" you can link the data to the RBIS metadata. Hereupon, a form opens where you can enter some geo data's metadata.



**LAYER**

help	position	key	value	remove
		<b>LAYER</b>	assem_esp.jpg	
?	1	NAME	assem_esp.jpg	<input type="checkbox"/>
?	2	STATUS	ON	<input type="checkbox"/>
?	3	<b>CLASS</b>	assem_esp.jpg	<input type="checkbox"/>
?	4	TOLERANCE	0	<input type="checkbox"/>
?	5	<b>DATASOURCE</b>	select	<input type="checkbox"/>
			select node	<input type="button" value="save"/>

Figure 54: The button "activate layer" generates the geo data's metadata in RBIS.

After entering the necessary data, complete the process by clicking the button "submit" at the end of the form. The geo data is supposed to be listed in the overview of "geo data". The corresponding data sheet of the metadata contains a link to the download of the geo data and a link to the developed maps, which contain the geo data.

EDIT	
<a href="#">[Edit]</a>	
Map	
View map data: <a href="#">shop.thu</a>	
Document	
File name	File size
k-stat.tgz	220 B
<a href="#">[Download]</a> <a href="#">[Delete document]</a>	
<a href="#">[Add associated document]</a>	
Overview	
Dataset Title	k_stat
Abstract	climate stations thuringia
Topic Category	climate
Data Quality	
Lineage Statement	
Dataset Description	
Dataset Contact Person	
Dataset Contact Organisation	
Dataset Date Type	creation
Dataset Reference Date	2008-10-14

Figure 55: Data sheets of geo data contain a link to maps which visualize the geo data.

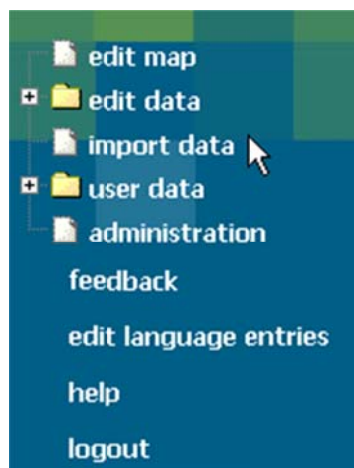
---

## 8.2 Import of Data

Before you can visualize data you need to upload or import it to RBIS/JanusWeb, unless it does not exist already. This chapter deals with the import of data which is helpful in order to know how to work with it at a later point, e.g. for editing, retrieving, displaying.

- For this purpose, select the menu item “import data” in the main menu (see Figure 56).

**Note:** If you cannot find this menu item on your page, you may not be permitted to import data. You need the process authorization IMPORTDATA. You can find detailed information on the process management in the documentation of the same title.



*Figure 56: This chapter deals with the import of data.*

Importable data can be categorized according to the following three types:

- Geo data (vectors, rasters and symbols)
- Any user data (attributes)
- Data which is linked to spatial objects.

Irrespective of the type, all data will be copied on the server. However, depending on the type the data will be edited there. The size of data which can be copied on the server depends on the PHP directives. The following formats can be imported:

- ESRI Shape files
- TIFFs and GeoTIFF
- CSV

- 
- Dbf (dBase format).

If you upload a file on the server that has an unidentified format, the import process will be cancelled.

Generally, you can distinguish between two versions when you upload data of any import format on the server.

1. For the first version you need to give each single file. Consequently, when you wish to load Shape files you need to give the path to the shx, shp and dbf file. Because of the safety measures of the browser, which do not allow filling out these file fields automatically, you need to select each single file or enter the file via copy-paste. It is up to you to enter the projection file (\*.prj).
2. The second version means to load an archive on the server. An archive is a file which contains all further data. Only flat hierarchical structures have been used so far, i.e. data must not be connected to a directory structure.

The following archives are supported:

- Zip archives with the extension .zip
- Tape archives with the extension .tar
- Compressed tape archives with the extension .tgz or .tar.gz

Data which has been uploaded into the database on the server will be integrated automatically as far as possible. That means: you need to upload the data to the correct place, apply the system entries for the data and assign authorizations with the imported user as owner. The import functions for any supported formats are described below.

### 8.2.1 Import of Shape Files

There is vector data as combination of attributes with a geometric description. Geometric data **and** attributes are integrated into the system when you import data. JanusSuite uses PostgreSQL with PostGIS extension. Therefore, database fields have geometric formats of the WKT specification, which in turn are based on the OGC geometries. Vector data is distinguished according to POINT, LINESTRING or POLYGON geometries. Additionally, all of these versions are available with the prefix MULTI. In principle, several different geometries can be saved in one table. However, in the course of the processing problems may arise. In order to prevent these possible problems JanusSuite imports only one geometric type into one table.

---

A shape file consists at least of three different files. These shape files all have the same file name and the extension .shp, .dbf and .shx. Optionally, you can use a file with the extension .prj in which the used projection can be found.

- Select the format in the pull down menu of the section “import of shape data or images” (see Figure 60).
- If you wish to import an archive, tick the checkbox “archive”.
- Enter the path of the archive or of the single shape files in the corresponding entry fields (the button “search” opens a helpful browser).



Figure 57: The import menu of RBIS/JanusWeb. In the displayed pull down menu you can select the format you wish to import.

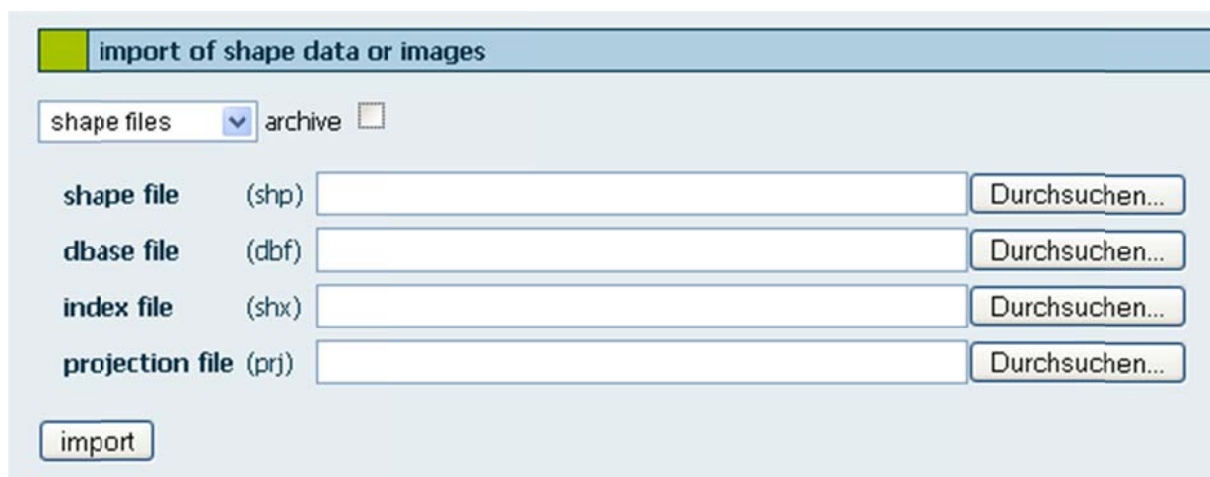


Figure 58: The shape format Esri consists of at least three files. RBIS/JanusWeb requires the path to each single file. It is up to you if you wish to give the projection file (if existing).

The files are sent to RBIS/JanusWeb and are then displayed on-screen (Figure 59).

file name	mime type	file size
k-stat.shp	application/octet-stream	2200
k-stat.dbf	application/octet-stream	4501
k-stat.shx	application/octet-stream	700

next

Figure 59: The files displayed here have been unpacked and uploaded successfully.

determining SRID

31468 31468 information

-9999 as null

☒ -9999

next

Figure 60: For a correct illustration of the vector data information about the projection need to be given in Spatial Reference Identifier form.

In the course of the import a reference number of the data projection (remember: attributes **and** spatial data), a so called Spatial Reference Identifier (from now on called SRID) needs to be selected or entered. Each imported data should get a SRID in order to guarantee a correct display and later conversion of the projection.

For shape files such a SRID is either generated automatically from a provided projection file (\*.prj) – if this file is provided – or needs to be selected from a list. This list can be found in the table spatial\_ref\_sys and is set up when PostGIS is installed. You get a detailed description of the selected SRID when you click on “information”.

- You can enter the projection ID in the menu “determining SRID” (Figure 60) with the help of the pull down menu.

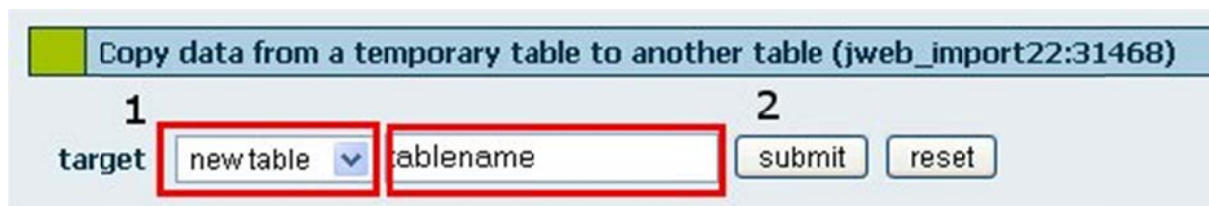
The next step is to import data into an import table. This temporal table contains the geometries and attributes of the shape file. On the next page you are only informed about the steps you have carried out and the corresponding results. For bigger datasets it may take a time until the results are given because we generate the output after the data has been imported. Please be patient. This is not unusual.

---

In the next step (see Figure 61), you need to decide what you wish to do with the data. The following options are available:

- creating a new table;
- overwriting of an existing table;
- attaching data to an existing table.

If you wish to create a new table, select the first item (new table) of the pull down menu and enter the name of the table into the entry field. If such a table already exists, an error message will appear.



*Figure 61: (1) In this pull down menu you can select existing tables or a new table. If you select the latter, you need to write a table name in the entry field (2). However, if you select an already existing table, another pull down menu will be shown (which is not displayed here). In this menu you can determine whether data shall be attached to the table or shall be substituted.*

If you select an existing table, there will appear a box where you can choose to overwrite or add data instead of the entry field (No. 2 in Figure 61).

If you overwrite an existing table, the existing table from the database and the entry from the PostGIS management table will be deleted. Afterwards the procedure is the same as for a new table. The procedure of adding data is described below.

Two new columns are added to the existing attributes. The attribute gid is a new artificial primary key, which is used to identify objects within the system. The second attribute is the\_geom and contains the geometry of the object. For a correct application both columns need to be taken over as a geometric table. The gid column is set up as the type number and primary key.

---

column name	column type	take over
datacolumn	int2	<input type="checkbox"/>
elevation	int2	<input type="checkbox"/>
id	int2	<input type="checkbox"/>
gid	int4	<input type="checkbox"/>
y	float8	<input type="checkbox"/>
x	float8	<input type="checkbox"/>
name	varchar(24)	<input type="checkbox"/>
the_geom	geometry	<input type="checkbox"/>
all checkboxes		<input type="checkbox"/>

where statement

Figure 62: Apart from attribute columns, i.e. attributes of the shape file, geometric data as the column “the\_geom” and an object\_Id are added. Furthermore, you can determine a statement.

In the entry field “where statement” you can determine a statement, which must be set up in the SQL-syntax without a leading WHERE-key word. Consequently, the import is restricted to the data that fulfills this condition. If all information is given, the following steps can be accomplished:

- Creating a new table
- Copying data from the import table to the target table
- Updating PostGIS Information
- Entering authorizations for the target table
- Setting up a spatial index for the target table

### **Adding Data to Existing Tables**

In this case the import is carried out as described until Figure 61. However, then the imported data is added to an existing table (see Figure 63). For this purpose, you need to give an allocation of the already existing data. Here, adding data means to add rows to existing tables; new columns are not

added. Contrary to this procedure, the function rewrite overwrites the hitherto existing data rows by deleting the old table and setting up a new one.

An allocation here means to allocate existing columns to the just imported columns. First, you select a column of the target table by clicking on the column name. Then, you either select a column from the source table or you use the button “enter value” in order to enter a constant into this column. This procedure can be used to combine several data sets, which have been separated so far, in one table and later classify them on the basis of this column (see *Figure 64*).

All allocations are displayed on the right side and can be deleted when you click on the “clear” button.

Figure 63: Select a method from the pull down menu.

source table	
datacolumn	int2
elevation	int2
id	int2
gid	int4
y	float8
x	float8
name	varchar
the_geom	geometry

target table	
id	int2
elevation	int2
datacolumn	int2
gid	int4
x	float8
y	float8
name	varchar
the_geom	geometry

**defined allocations**

name,name

y,y

x,x

elevation,elevation

the\_geom,the\_geom

Figure 64: RBIS/JanusWeb generates a temporal table with columns of your shape files’ attributes and geometry from your uploaded data. In order to add the temporal table to an existing table or to import new data, you need to allocate the columns of the tables to each other.



---

Another possibility is the automatic allocation of same column names. Click on the button of the same names to generate an automatic allocation, which is displayed on the right side. Individual allocations can be deleted and linked anew.

The form assures that each column of the target table occurs only once in the allocations. The types will be checked at a later stage of the process.

Note that the gid column is not taken over when you add data. This column is set up as a number in the table and is filled automatically by the database. When you add data, gid always starts with 1; otherwise, there will be a double primary key.

### **Import of Data Archives**

As mentioned above, there are two versions to upload data of any import format on the server:

1. For the first version you need to give each single file. Consequently, when you wish to load Shape files you need to give the path to the shx, shp and dbf file. Because of the safety measures of the browser, which do not allow filling out these file fields automatically (see Figure 58), you need to select each single file or enter the file via copy-paste. The entry of the projection file (\*.prj) is optional.
2. The second version means to load an archive on the server. An archive is a file which contains all further files. Only flat hierarchical structures have been used yet, i.e. data must not be connected to a directory structure.

The mass import and the import of archives are two different processes. A mass import is carried out with the help of archives; however, mass import means the import of several shape files into an archive while an archive import covers only data from one Shape file.

The following archives are supported:

- Zip archives with the extension.zip
- Tape archives with the extension.tar
- Compressed tape archives with the extension .tgz or .tar.gz

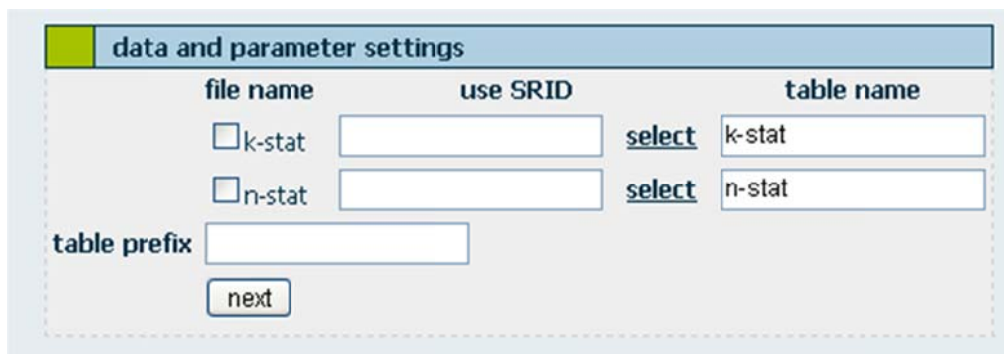
All shape files that are contained in an archive are imported in the same way as individual shape files. There is only one difference to the import procedure explained above: In the first step you need to give the archive.

---

### **Mass Import of Shape Files**

Via mass import of shape files you can import archives, which contain several shape files. For this purpose, you do not need to give each single shx, dbf and shp file.

Enter the path of the archive in the import menu. Then, RBIS/JanusWeb lists all data contained in the archive. You do not need to take over all shape files of the archive. In fact, it is possible to select shape files in the section “data and parameter settings”. You need to give the SRID for each shape you wish to import. If the SRID is missing, RBIS/JanusWeb sets the value to -1, i.e. unknown. SRIDs cannot be changed at a later stage, which is why you need to enter the correct SRID right from the beginning.



*Figure 65: Individual shape files of a mass import. In case you do not enter a SRID, it is set to -1 (unknown) automatically.*

To name the tables there is an option available to assign a prefix. This prefix is put in front of the table names automatically. Unlike the import of csv or dbase table data you cannot overwrite existing tables. If a table of the same name exists, the import will be cancelled. If necessary, you need to delete the existing table beforehand in order to import a new table of the same name.

- To finish the import click “next”.

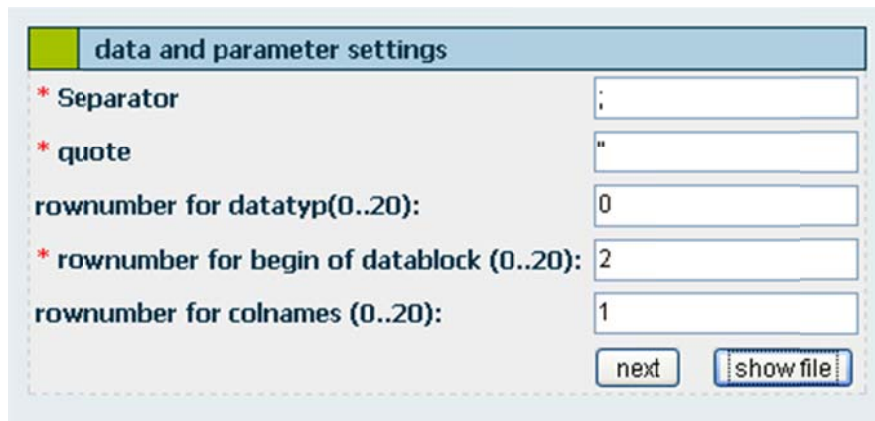
### **8.2.2 Import of CSV Files**

Apart from vector data and raster data you can also import table data in the form of dbase and CSV files. As an example, the import of CSV files is important for the integration of GPS data in the database. Select the CSV format from the menu. As usual you have the possibility to import a single file or an archive.

Variables in CSV files are separated by punctuation, e.g. semicolon or comma – the same separator has to be used within the entire file. If the separator is part of a data element, it needs to be written in quotes. RBIS/JanusWeb has to be informed about

---

the type of separators and quotation marks used for the imported file. For this purpose please use the section “data and parameter settings”.



The screenshot shows a dialog box titled "data and parameter settings". It contains the following fields and controls:

- \* Separator**: A text input field containing a comma (`,`).
- \* quote**: A text input field containing a double quote (`"`).
- rownumber for datatype(0..20):**: A text input field containing the value `0`.
- \* rownumber for begin of datablock (0..20):**: A text input field containing the value `2`.
- rownumber for colnames (0..20):**: A text input field containing the value `1`.
- At the bottom right, there are two buttons: **next** and **show file**.

*Figure 66: Apart from separators and quotation marks you need to give the row number for the beginning of the data block and (optionally) the row number for the data type and the column name.*

### **Selecting Field Names and File Type**

The first row of CSV files contains the column names. Consequently, RBIS/JanusWeb takes the column name of the file’s first row by default and assigns it to the header of the new table. However, if you wish to change anything here, you can use the fields *row number for column name*. In any case, the first row of your CSV file is not assigned to your table as data entry. If the file that is to be imported does not show column names but data in the first row, you should enter column names with the help of the editor before you start the import. Otherwise, this data would not be assigned in the data table by RBIS/JanusWeb.

The fields from top to bottom, which can be found under *column name*, refer to the columns from left to right in the source file, i.e. the left column can be found in first place, the outermost right column can be found in last place. Note: Column names have to consist of at least three signs, otherwise no import will be carried out.

You need to declare the column name as well as the data type. For this purpose, PostgreSQL specification of data types is used.

---

data and parameter settings	
column name	column type
0.1	
0.1	
0.1	
first point x (long)	no row
first point y (lat)	no row
second point x (long)	no row
second point y (lat)	no row
SRID	
geometry type	no type
next	preview

Figure 67: Here you select column names and the data type. The column names are taken from the first column of the CSV file; the data type needs to be entered manually. Furthermore, in the matrix you can specify whether the corresponding column contains northings or eastings.

If the CSV file does not only contain attributes but also information about the geometry, you need to give the type of geometry (POINT, LINE or LINETONEXT) and SRID.

### **Transferring Imported Data**

The uploaded data is saved in a temporal table by RBIS/JanusWeb. There you can also see whether errors have occurred when the SQL table has been generated, e.g. because of missing information about the data type or because you have entered not enough signs for the column name. If an error occurs, the import process will be cancelled.

### **Transferring Data from the Temporal Table into another Table**

RBIS/JanusWeb generates a new data table by means of PostgreSQL. Data from the temporal table will be inserted in the new table. You can also attach data from the imported file to an existing table or overwrite data. When you create a new table you will be led to the source table. If you wish to attach or enter new data, you will be taken to the section “transfer tabular data into new table”.

### **Transferring Tabular Data into new Table**

Here you can enter data from an imported file into an already existing table. The column names and the data types of the existing table (here: target table) as well as

the imported, temporal table (here: source table) are listed. If you choose “same names”, data from columns of the same name are overwritten automatically. Columns with different names can be allocated manually. For this purpose, select a column of the target table by clicking on it and then click on the column of the source table.

transfer tabular data into new table		
source table	target table	defined allocations
datacolumnn int2	id int2	name,name <input type="button" value="clear"/> y,y <input type="button" value="clear"/> x,x <input type="button" value="clear"/> elevation,elevation <input type="button" value="clear"/> the_geom,the_geom <input type="button" value="clear"/>
elevation int2	elevation int2	
id int2	datacolumnn int2	
gid int4	gid int4	
y float8	x float8	
x float8	y float8	<input type="button" value="enter value"/> <input type="button" value="same names"/>
name varchar	name varchar	
the_geom geometry	the_geom geometry	
		<input type="button" value="submit"/>

Figure 68: Here you allocate the data of the columns of the imported source table to the columns of the already existing target table.

In the field *defined allocations* all allocated columns are displayed. The button “enter value” can be used to enter fixed values to columns.

When you click submit, the import is finished and you are led to the section “transfer data to table” where you can view the set up allocations.

### Source Table

Data from the temporal table is copied into a database table. Before this table is integrated in the database you can correct the information about the data types and select the columns you wish to take over.

---

source table jweb_import22		
column name	column type	take over
datacolumn	<input type="text" value="int2"/>	<input type="checkbox"/>
elevation	<input type="text" value="int2"/>	<input type="checkbox"/>
id	<input type="text" value="int2"/>	<input type="checkbox"/>
gid	<input type="text" value="int4"/>	<input type="checkbox"/>
y	<input type="text" value="float8"/>	<input type="checkbox"/>
x	<input type="text" value="float8"/>	<input type="checkbox"/>
name	<input type="text" value="varchar(24)"/>	<input type="checkbox"/>
the_geom	<input type="text" value="geometry"/>	<input type="checkbox"/>
<input type="checkbox"/> all checkboxes		<input type="checkbox"/>
where statement <input type="text"/>		
<input type="button" value="take over"/>		

Figure 69: Here you can correct data types under the headline “column type” and tick the checkboxes for the columns of the source table that shall be taken over to the target table.

- Complete the import process by clicking “take over”.

### Setting up an Owner for the Table

Finally, the importer will be set up as the owner of the table. The button “next dataset” is only relevant for mass imports.

## 8.2.3 Import of Raster/Image Data

There is a function available which loads a raster file into the system. The files are kept in the file system and some reference entries will be given in the database. You can select a raster file and a corresponding world file (.tfw). A selection of the latter is not compulsory because GeoTiff files already contain this information. The files will be uploaded and integrated into the database. You cannot rename the TIFF while the import is carried out.



Figure 70: As a result of an import of a raster file RBIS/Janus lists the uploaded and imported images again.

## 8.2.4 Import of dbase Data

Attributes in dbf format can be imported individually or as an archive. These are only attributes, i.e. geometries are not generated.

Select the format dbase in the menu item *import data*. In the box next to the menu item you can choose whether you wish to import an archive or individual dbf files. Give the path of the file you want to import or search the data system for the file.

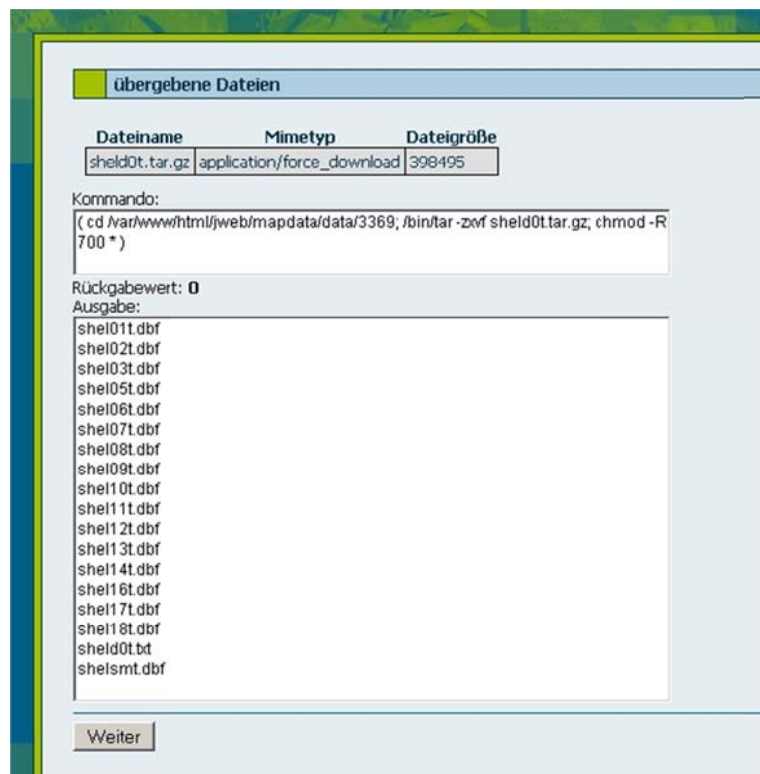


Figure 71: The uploaded data is displayed as transferred data.

After clicking the button *import* the files are uploaded to the server. Then, an overview is displayed which shows you the imported data. Click “next”.

### **Transferring Imported Files**

After the upload the data is integrated in the database with the use of PostgreSQL. When you view the section “transfer of imported files” you get informed about this process. After clicking on “next” you need to name the new table. Alternatively, you can select an already existing table.

### **Copying Data from a Temporal Table to Another**

RBIS/JanusWeb creates a new data table in which data from the temporal table is imported with the help of PostgreSQL. Furthermore, you can either add the data of the imported file to an existing table or you can overwrite the data from the imported file into the existing table. If you create a new table, you are lead to the “source table”. If you add or enter new data, you are led to “copy table date to new table”.



### Source Table

You do not need to import all columns of the dbf source. Tick the corresponding checkboxes of the columns you wish to import. The data from the temporal table is copied into a database table. Before this table is imported into the database you can correct the information about data types and select the columns you wish to take over.

Optionally, you can take data from ticked columns or copy it via SQL where-statement. In the field of where-statement you can enter the operator and variables. If you click “take over”, data from the temporal table is transferred to the new table.



Spaltenname	Spaltentyp	übernehmen
state	varchar(2)	<input type="checkbox"/>
county	varchar(50)	<input type="checkbox"/>
fips	varchar(5)	<input type="checkbox"/>
state_fips	varchar(2)	<input type="checkbox"/>
count	numeric(11,0)	<input type="checkbox"/>
sum_fatal	numeric(18,4)	<input type="checkbox"/>
sum_injuri	numeric(18,4)	<input type="checkbox"/>
sum_proper	numeric(18,4)	<input type="checkbox"/>
sum_crop_d	numeric(18,4)	<input type="checkbox"/>
alle Felder		<input type="checkbox"/>

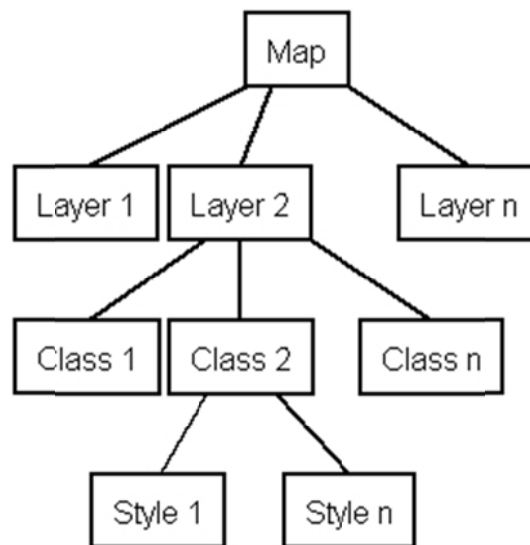
where Bedingung

Figure 72: In the section source table you can correct data types in the column of column type and also tick the checkboxes of the columns you wish to take over to the target table.

---

## 8.3 Creating and Editing Maps

RBIS/JanusWeb uses UMN MapServer to display and create maps. RBIS/Janus creates a Mapfile to each map. In this file the structure, appearance and data basis of the maps are displayed.



*Figure 73: Tree diagram of a MapServer Mapfile.*

The structure of a Mapfile can be illustrated by a tree diagram. Each map consists of at least one layer, which again consists at least of one class. The branching points are called sections or nodes. You can set further nodes and attribute values for each node. Figure 1 shows the most important nodes of a map's tree diagram in the UMN MapServer. You can also implement and illustrate the following map elements as nodes with MapServer:

- legend
- reference map
- scale
- layer overview.

---

A Mapfile as shown in Figure 73 is structured as such:

```
MAP
  NAME "Testkarte"
  SIZE 640 400
  STATUS ON
  EXTENT 4349937.00 5563925.00 4546100.00 5724601.00

  LAYER
    NAME "gemeinde"
    STATUS ON
    TYPE POLYGON
    CONNECTIONTYPE POSTGIS
    DATA "the_geom from th_gem"
    CONNECTION "dbname=BrahmaRBIS/JanusWeb user=postgres
host=localhost"
    CLASS
      NAME "alle Gemeinden"
      STYLE
        COLOR 255 0 0
      END
    END
  END
END
```

RBIS/JanusWeb uses the UMN MapServer format and the JMap format. Geo data as well as attributes are important for the illustration of the maps. They also need to be exported when you export Mapfiles.

In order to know how a map generated by RBIS/JanusWeb looks like, have a look at Figure 74. Your map should look like this. Deviations to the displayed map are possible because of the different RBIS/JanusWeb layouts. In Figure 74 the RBIS/JanusWeb layout has been used.

In order to edit or view existing maps, the user needs to have the authorization of MAP. Only then the menu item *edit map* with which you can edit and create maps is available in the main menu of RBIS/JanusWeb.

The presented menu offers all functions and parameters of the UMN MapServer to illustrate maps. However, a description of all parameters would go beyond the scope of this documentation. Therefore, only the creation of a map with one single layer is described with the mode of operation of the UMN MapServer in the JanusSuite. For a

more detailed description of all the parameters for creating and adapting maps you may use the relevant manuals and guides of UMN MapServer.

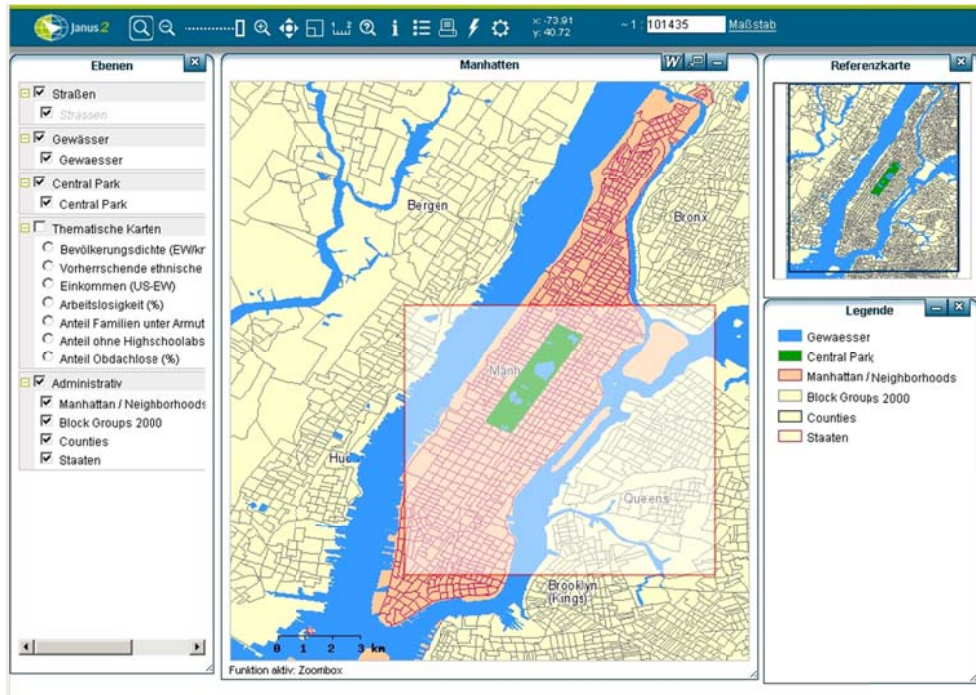


Figure 74: A map of Thuringia generated with RBIS/JanusWeb. The main focus lies on the central thematic map.

### 8.3.1 Selection of Maps

Via the menu item

- „edit map“

on the left side of the menu (see Figure 75) you are led to the menu overview “map selection” (see Figure 76).

Here you can select existing maps, i.e. existing Mapfiles for the MapServer. Apart from complete Mapfiles you can also download single layers, symbols or styles.

The selected Mapfiles (layer files, symbol files or style files) can still be edited (see chapter 8.3.2).

You can switch between existing layers and maps with the help of the buttons in the pull down menu (see Figure 76). If you click on one of the buttons, the existing layers or maps will be displayed (see Figure 76). In addition to map names or layer names there are options for changes, deletions, exports and authorizations available.

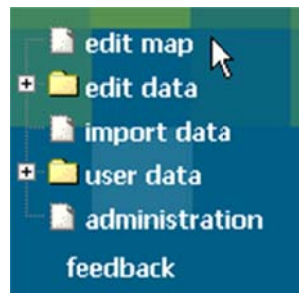


Figure 75: Call up the menu “map selection” which can be found under the menu item “edit map”.

### The Menu Field of Maps/Layers (No. 2 in Figure 76)

If you wish to delete a map (or any other node), you need to click on “remove” (see the highlighted field (2) in Figure 76). Note: You are not asked again whether you really want to delete it. After the deletion the page is loaded again automatically and displays the still existing layers.

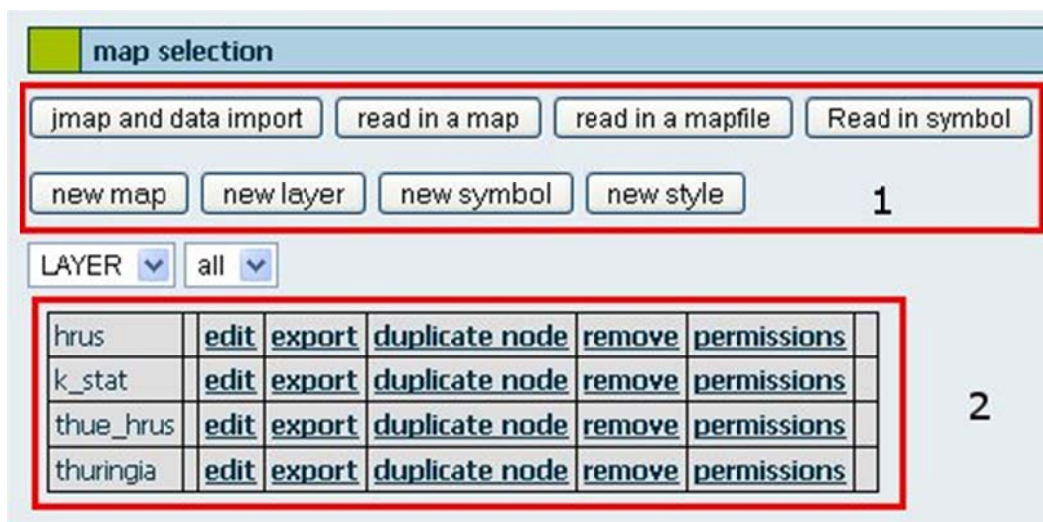


Figure 76: Here you see maps and layers which you are permitted to access. (1): The menu bar is described in more detail in chapter 8.3.3. (2): Shows the existing nodes of the selected types (here: “layer”). You can determine the type of node with the help of the pull down menu that is displayed between the highlighted fields 1 and 2. Click “new map” to create a new map. If you wish to edit a map, click the button “edit” next to the corresponding map.

When you click the button “permissions” you can view the current users with authorization for this map. Furthermore, the owner or administrator can give authorization to read and write to other users or user groups. Here you can also determine the owner of a map anew.

The item *edit* leads you to a menu without a name to edit maps. For this purpose, read chapter 8.3.2.

---

The export should be self-explanatory. A tar-gzip archive with a Jmap file and the corresponding data of the node is generated and offered as download (see Figure 77).

The function “duplicate node” generates another identical node. Thereby, you can create several similar nodes quickly and easily.

### **The Menu Bar of the Map Selection (No. 1 in Figure 76)**

- Jmap and Data import: imports existing maps in JMap format as well as corresponding attributes
- Read in a map: maps in JMap format are imported
- Read in a mapfile: reads in mapfiles into map selection
- Read in symbol: symbol nodes are read in as mapfile into the selection

**Note:** All import processes are carried out via specific directories in which the data needs to be copied beforehand. A simple upload of Mapfiles is not implemented.

- New map: opens a map form for a map node
- New Layer: opens a map form for layer nodes
- New Symbol: opens a map form for symbol nodes
- New Style: opens a map form for style nodes

### **Read in mapfile**

The import of Mapfiles serves as an example to illustrate the process of all imports.

- Click the button “read in a map”.
- You get an overview of all map data of the import directory.
- Select the desired file.

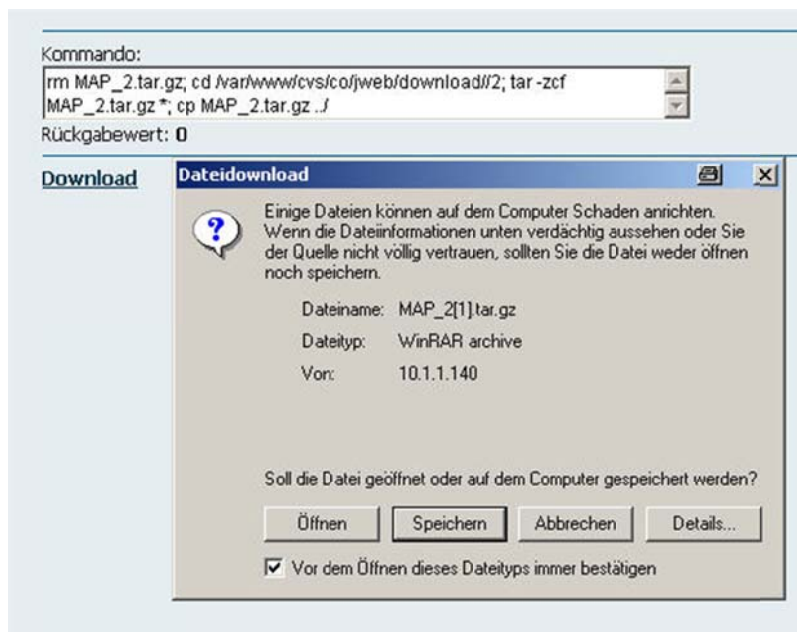


Figure 77: An exported Jmap file is offered as a tar archive for downloads.

### 8.3.2 Editing Mapfiles

The UMN MapServer needs a Mapfile with determined map elements, layout and contents to generate a map. The Mapfile can be created with the help of a text editor, for example. However, in JanusSuite user-optimized HTML forms are used, as you can see in Figure 79. Each node (also called section) in the tree diagram of the Mapfile can be described via a form.

In the same menu you can create and edit existing files. For new maps the form will be empty, for already existing maps the form will be filled.

When you click “new map” or select a node of the table (click on the link next to the node), a menu and form without a name but several entry fields should appear (see Figure 79).

The menu is organized in two areas. On the lower half there is the part where you can edit nodes, on the upper half there are the map functions which work for all nodes. Map functions are: “display map“, “check“, “grouping“, “reference-map“, “duplicate map“, “copy node“, “paste node“ and “create mapfile“.

#### Node Forms

The forms consist of four elements: entry fields, pull down menus and links. Each of the symbols consists of:

- A help symbol for the MapServer syntax (3 in Figure 78),
- A number of position (5) ,



- The name (key) of the element (4),
- Entry fields, selection fields,
- A checkbox to remove an entry (2).

help	position	key	value	remove
		MAP	shape_of_thuringia	
3	1	EXTENT	4349927.00000000 5563921.00000000 4546102.50000000 5724596.50000000 <a href="#">select</a>	<input type="checkbox"/>
?	3	NAME	shp_thu	<input type="checkbox"/>
?	5	SIZE	800 600	<input type="checkbox"/>
?	6	STATUS	ON <a href="#">v</a>	<input type="checkbox"/>
?	7	TRANSPARENT	ON <a href="#">v</a>	1 <input type="checkbox"/>
?	8	UNITS	METERS <a href="#">v</a>	<input type="checkbox"/>
?	9	WEB		<input type="checkbox"/>
?	10 4	LINK	thuringia <a href="#">select</a>	<input type="checkbox"/>
?	11	PROJECTION		<input type="checkbox"/>
?	12	LINK	k_stat <a href="#">select</a>	<input type="checkbox"/>
			<a href="#">select node</a> <a href="#">v</a>	2 <input type="button" value="save"/>

Figure 78: A form for editing nodes of a Mapfile. The numbered rows (4) can be deleted when you tick the checkbox (1) in the column remove. Afterwards you need to click “save” (2). For the individual elements there is a help available (3). Above the form you can see the current node with its root node. Here you can switch between the nodes.

Each form actually is a node with its child nodes and root nodes. Child nodes are nodes that can be found further down in the hierarchy of a Mapfile. Root nodes are nodes which are superordinated, though. In Figure 78 you can see the node Map with its KINDKNOTEN node layer and its subordinated node CLASS as well as the attributes NAME, STATUS and TOLERANCE. In comparison to figure 75 this would be the box “map”.

The attributes are not meant to be child node here, but the node of the displayed form. From these forms hierarchically ordered nodes or sections, e.g. layer nodes, are available. If you click on the link *Layer* a form for this node will open (as in our example in Figure 78). Furthermore, navigation is easier to be carried out via links which show the current node and its root node. These links can be found above the form.

When you create a new map, keys (in UMN MapServer parameters are called keys) like MAP, EXTENT, LAYER, NAME, SIZE and STATUS are displayed by default as in map forms. Further keys can be selected and added via the pull down menu



---

“parameter”. However, when you edit an existing map, parameters which have been set before and are saved in the Mapfile are used.

You do not need to declare all parameters. Nearly all parameters are reset to default values. If you add parameters to the form with the help of the selection menu, you need to set the corresponding parameter. Usually an error message occurs when the declaration is missing. Thereupon, the map creation is cancelled.

For single keys there is an online help available which can be found in the column help. There you can find brief, direct help.

The entry fields in the column “position” serve to set a hierarchy of the rows and therefore as keys. Just enter the desired position number.

As a user you may learn very quickly about the importance to save your entries (No. 2 in Figure 78). If you leave the form without saving your entries, e.g. to check the entries in the menu layer, all entries will be lost. For this reason you are advised to save your entries after every edition.

With the help of the button “save” rows and entries can also be deleted. For this purpose, you need to tick the rows you wish to delete in the column *remove* and then save the form.

display map
check
grouping
reference-map
duplicate node
copy node
paste node
create map file

MAP
1

help	position	key	value	2	remove
		MAP	shape_of_thuringia		
?	1	EXTENT	4349927.00000000 5563921.00000000 4546102.50000000 5724596.50000000	select	<input type="checkbox"/>
?	3	NAME	shp_thu		<input type="checkbox"/>
?	5	SIZE	800 600		<input type="checkbox"/>
?	6	STATUS	ON		<input type="checkbox"/>
?	7	TRANSPARENT	ON		<input type="checkbox"/>
?	8	UNITS	METERS		<input type="checkbox"/>
?	9	WEB			<input type="checkbox"/>
?	10	LINK	thuringia	select	<input type="checkbox"/>
?	11	PROJECTION			<input type="checkbox"/>
?	12	LINK	k_stat	select	<input type="checkbox"/>
			select node		save

Figure 79: Form to edit a map (2). This menu is the most superordinate node in the hierarchical tree diagram of the Mapfile. Above the form you can find buttons for map functions (1), which are explained in chapter 8.3.3.

You can usually enter the values of the parameters manually. However, for some parameters you can select the values via links (“select”) or from a pull down menu. Both options can be found in the column “value”.

By default the key MAP should be at first place in the menu. This key identifies under which name the map you wish to create is listed in the database. Furthermore, this key is meant to be the root of all other nodes.

### 8.3.3 The Menu Bar in the Node Form

Above section (2) where you can edit parameters of the map there is a menu for map functions (see (1) in Figure 79). In contrast to the node forms these functions refer to the entire map, i.e. to all nodes.

#### The Menu Item “check”

To check whether you entries for the map are correct RBIS/JanusWeb offers the button “check” on top of the node menu. Your entries are checked and you are informed if there are mistakes or gaps in your description of the map.

In the first row you can view the results of the check of the layer data sources. A green field signals a correct entry. If not all layer sources have been selected, a red field appears.

Moreover, the map description, i.e. the definition of nodes and sections, is checked. In case of discrepancies and wrong information an entry field will open below the corresponding parameter where you can edit or correct your entries or remove the parameter. You can remove parameters by ticking the checkbox next to the entry field and then click “check”. On the one hand, *check* enables you to save new entries or to delete entries and on the other hand the function enables you to check the changes again. Via *edit* you are led to the latest edited form menu. That means when you check a layer section, you are taken back to this section. If no error occurs, you can generate the Mapfile (just click “create Mapfile” in the menu of the map functions). RBIS/JanusWeb creates a new Mapfile, then.

position	key	value	remove
MAP			
missing value			
?	1	EXTENT	<input type="text"/> select <input type="checkbox"/>
MAP->WEB			
Überschreitung des Max von PRINTCOPYRIGHT			
MAP->WEB (END)			
MAP->PROJECTION			
MAP->PROJECTION (END)			
Unterschreitung des Min von LAYER			

Figure 80: The check form. Here some information about EXTENT is missing. This gap can be corrected immediately.

## **Grouping Layers**

Navigating in a map with several layers can be laborious, e.g. if each layer needs to be ticked individually. It is helpful to group layers (use the button “grouping”). The layers can be called up via the group, then. However, you can still tick individual layers. Use the button “grouping” to create groups.

In the menu which will appear all layers of the Mapfile are listed. For each layer you can enter a name of a group. In order to create a group of two or more layers just give them the same group name. Close the menu by clicking “save”. After you have created a Mapfile (click “create Mapfile”) the group should be displayed.

---

## **Displaying Maps**

To view your generated map click “display map”. In the document “map navigation” you can learn about navigation in the window of maps and the availability of functions.

## **Reference Map**

RBIS/JanusWeb generates a reference map for the user so he has a better overview and can navigate in the map view more easily. This reference map can be edited and adapted with the help of the menu item *reference map* (placed on top of the menu) and with the parameter *reference* (placed in the map section). As well as for other parameters RBIS/JanusWeb creates such a reference map even if you do not give any information for this map.

Automatically, a reference map will be created from the main map’s existing layers when you call up a map’s view for the first time. If new layers are added to the main map or if layouts of layers are changed by the map editor, the reference map is not edited automatically. For this purpose, there is an extra module available with which you can create new reference maps at any time.

This module is retrievable via the map function of the reference map. The current reference map of your map is displayed on the following page. There you find a row of checkboxes with the names of all layers that refer to the main map. You can add or remove the layers of the reference map by clicking on the corresponding checkboxes. In the lower part of the page you find the reference map that shall be generated.

By clicking the button “reference map” you save the lower map as new reference map; by clicking “edit” you are led back to the map editor. The latter takes you back to the form which you left when you clicked “reference map”.

The difference between the key “reference” and the menu of the reference map is that for the first an image file is loaded whereas for the latter an interactive map is loaded.

If there is an entry for the key “reference” in your Mapfile and you want to create a new map, you need to delete the “reference” entry from the Mapfile first (i.e. delete it from the form) and then create the Mapfile again. Only then can you create a new reference map. If you do not delete the entry, MapServer will send an error message and cancel the creation of the reference map.

## **Creating a Mapfile**

With the help of the save button you can only save the contents of the forms. In the map you cannot see the entries, though. RBIS/JanusWeb has to generate a Mapfile

---

for the Mapserver from the map description first. This process is carried out with the map function *create Mapfile*.

Do not wonder about this important step being carried out unspectacularly without displaying any overview of the result. You can only see whether your Mapfile works without any errors when viewing the display. If MapServer cannot display your map, it will show an error message.

### **Duplicating Nodes**

The current visible node will be duplicated. This is useful especially when you wish to use nearly identical nodes. The new node appears in the map description as sibling root and has the same features. Of course, duplication does not make sense for all nodes. Occasionally, heavy mistakes can occur, e.g. for data source nodes or projection nodes. However, this function is very useful for classes and layers. Very quickly you can create numerous layers.

### **Copying/Adding Nodes**

There are two menu items available in order to copy a node and add it to the same or another Mapfile.

- Call up the form of a node and click “duplicate node”. The button “add node” should be displayed in red.
- Go to the place where you wish to add the node and click the corresponding button.

## **8.3.4 Integration of Set Layers**

1. Open a map tree form via “new map” or “edit”
2. Click on the pull down menu “select parameter”
3. Select the parameter “link”
4. Click the pull down menu of the parameter’s layer and select the layer that has been generated and is listed further up

### **Integrating Styles**

To integrate created styles use the same procedure as for layers. This refers to the sub node class:

1. Click on the pull down menu “select parameter”
2. Select the parameter “link”

- 
3. Click on the pull down menu of the parameter's style and select the style created before.

### **Integrating Symbols**

In order to integrate a symbol you need to follow these steps in the sub node class:

1. Click on the pull down menu "select parameter" and select "style"

Switch within the sub node by:

2. Clicking on the key "style"
3. Click on the pull down menu "select parameter" and select the parameter symbol

A key "symbol" with an entry field and a select function next to it appears:

4. Use the function select

A list with the available symbols is displayed.

5. Mark the created symbol
6. Confirm your selection by clicking "select"

You can get back to the form of the sub node symbol by clicking on the newly added symbol.

help	position	key	value	remove
		<b>MAP</b>	thuringia	
?	1	EXTENT	4349927 5563921 4546102.5 5724596.5 <a href="#">select</a>	<input type="checkbox"/>
?	3	NAME	thuringia	<input type="checkbox"/>
?	4	<b>PROJECTION</b>		<input type="checkbox"/>
?	5	SIZE	600 600	<input type="checkbox"/>
?	6	STATUS	ON <input type="button" value="v"/>	<input type="checkbox"/>
?	7	TRANSPARENT	ON <input type="button" value="v"/>	<input type="checkbox"/>
?	8	UNITS	METERS <input type="button" value="v"/>	<input type="checkbox"/>
?	9	<b>WEB</b>		<input type="checkbox"/>
?	10	CACHETIME	1000	<input type="checkbox"/>
?	20	<b>LAYER</b>	thuringia	<input type="checkbox"/>
			select node <input type="button" value="v"/>	<input type="button" value="save"/>

Figure 81: In the opened pull down menu a set layer can be selected. With the help of the parameter "link" the key layer and this menu will be called up.

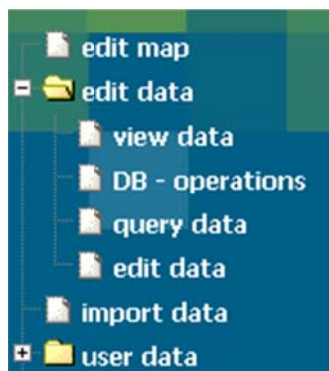
---

## 8.4 Editing Data

### Intention of this Chapter

This chapter deals with the options and possibilities of the menu item “edit data”, which is organized in the subitems “view data”, “DB-operations”, “query data” and “edit data”.

The subitem view data gives an overview of the existing data tables. Prefabricated operations of databases are offered by the subitem “DB-operations”. The function “query data” serves to search for and filter databases. If you wish to edit or add data, i.e. attributes or metadata of the individual database tables or data tables, use the item “edit data”. In the same menu you can also query data and create new queries.



*Figure 82: The main menu of RBIS/JanusWeb with the opened directory tree “edit data”. Depending on the user’s authorization different menu items are available. In this case authorization is given to all items (EDITDATA, SPATIALOP and EXPORTDATA).*

### 8.4.1 Required Authorization for “edit data”

Imported data can be edited subsequently in the menu “edit data”. For this purpose, the authorization ‘EDITDATA’ is required. If this is the case, there is a directory “edit data” with the subitem “edit data” or just the single menu item “edit data” in the main menu of RBIS/JanusWeb. Figure 82 illustrates the directory tree of “edit data” with all its subitems.

For the menu item ‘view data’ you need ‘EXPORTDATA’. ‘SPATIALOP’ is needed for ‘Geo-operations’. If you wish to carry out queries, you need the authorization ‘QUERYDATA’.



## 8.4.2 Exporting/Viewing Data

Existing data tables can be listed with the help of the subitem “view data” in the menu “edit data” (see Figure 82). You can import (see chapter “Import of Data”) and export data. The latter can be found under the menu item “view data”. The user needs the authorization ‘EXPORTDATA’ to use this function. If you also have the authorization ‘EDITDATA’ and/or ‘SPATIALOP’, the directory “edit data” with its menu items “view data”, “DB-operations” and “edit data” is available in the main menu.

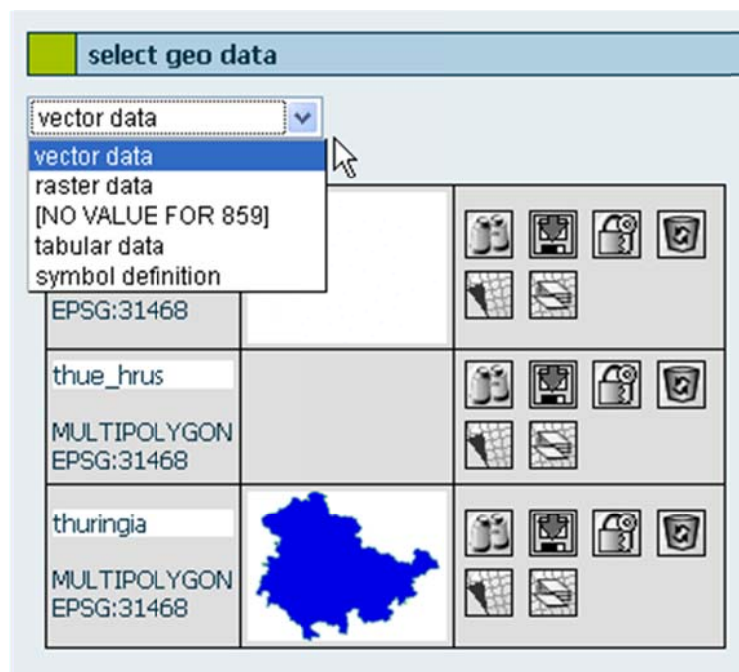


Figure 83: If you select the menu item “view data”, an overview of the existing tables of a data type is displayed. You can set up this data type in the pull down menu. There are links in symbol form for the datasets, e.g. for the export or generating of a new map. Depending on the data type links are displayed.

### Switch to the Menu “select geo data”

- Click “view data” in the main menu (see Figure 82).

Hereupon, you are led to the menu “select geo data” which is the main menu for the export of data. The structure is similar to the page “edit map”. However, the menu items “check”, “new map” etc. are missing (see chapter “Creating and Editing Maps”).

---

### **Structure of the Overview of Data**

As mentioned above, the menu “select geo data” is similarly structured to the menu “edit map”. Two selection menus are displayed above the overview of the data. In the upper pull down menu of the you can switch between data types that shall be displayed below.

### **Displaying Different Data Types**





You can view those data formats which can be imported as well as symbol definitions as can be set in the menu “edit map”:

- Vector data
- Raster data
- Table data
- Symbol data
- Raster catalogs




The data of the required data types to which the user has access is listed in the pull down menus in a table.

## **8.4.3 Data Overview**

The overview of data tables is displayed in a table. The first column contains data table names. In case of vector data the type of vectors and the corresponding SRID is given behind the names of the data tables. The icons in the last columns serve the following functions and can be found in the view ‘simple view’ and ‘extended view’:

-  opens a preview of the data (not available for table data and symbol definition);
-  exports data;
-  allocation of authorization insofar as you are owner of the data;
-  delete data (without further callback).

For raster and vector data further options are available:

-  sets a linkable layer of the data (only for vector data);
-  a new map with Mapfile is created from this data
-  adds data as layer to the existing map.
















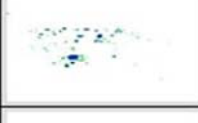















jweb_import3500 LINESTRING EPSG:-1		   
radtour4 LINESTRING EPSG:-1		   
rau_gem MULTIPOLYGON EPSG:-1		   
test_indian MULTIPOLYGON EPSG:-1		   
test_vector MULTIPOLYGON EPSG:-1		   
testzmusslx020 POINT EPSG:-1		   

Figure 84: A detail of the overview of existing vector data. The small preview map appears for raster and vector data.

#### 8.4.4 Preview of Data

In order to get a preview of the data:

- Click the symbol: 

or

- click on the thumbnails.

In the preview, which will open on a new page, the minimal/maximal X and Y values are displayed next to the map.

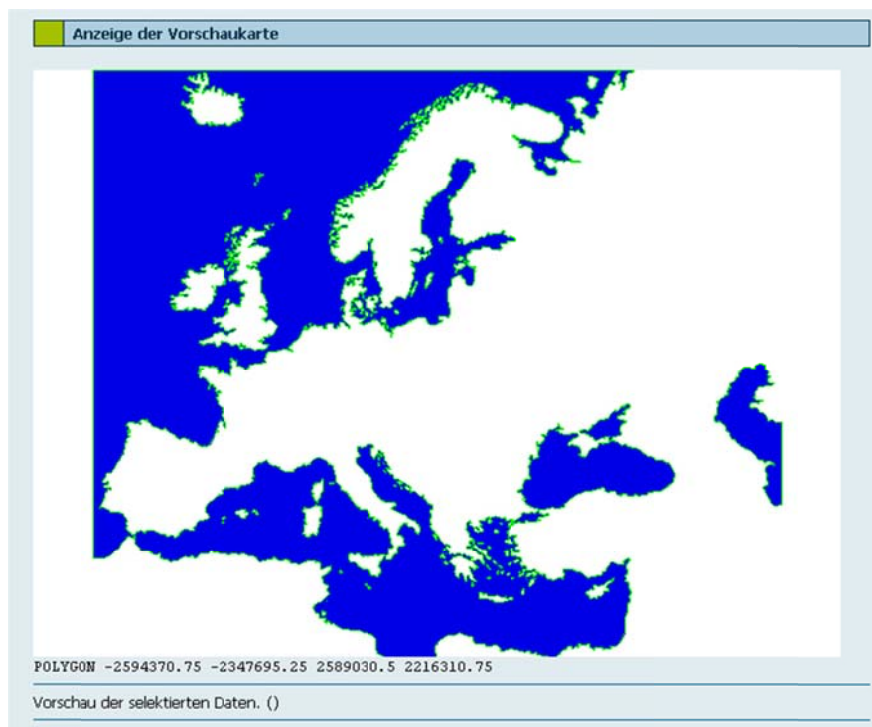



Figure 85: The preview map with minimal and maximal X and Y values.

The displayed graphic can be saved, printed or sent via mail immediately. For this purpose, use the menu bar which appears when you click on the graphic in the window of the preview.

### 8.4.5 Download and Export of Data

In order to export/download data:

- Click the icon. 

On the next page an overview of the columns which the selected table contains is shown. Mark those columns that you wish to export.

---

column name	column type	take over
id	int8	<input type="checkbox"/>
gridcode	int8	<input type="checkbox"/>
gid	int4	<input type="checkbox"/>
	NULL as -9999	<input type="checkbox"/> -9999
	all checkboxes	<input type="checkbox"/>

where statement

Figure 86: The export menu to save the selected data. The individual columns of the table can be selected and with the help of the “where statement” they can be filtered.

Furthermore, the selection of exported data can be limited by a “where statement”. For this purpose, enter your statement for the “where statement” in the entry field.

- After entering all information click ‘take over’.

RBIS/JanusWeb deletes the still existing files in the download directory and in case of vector data converts the selected data into shape data. This data is saved in an archive, packed and then put into the directory which has been deleted before. All these processes can be view in an overview by the user.

To complete the export:

- Use the link ‘download archive’ at the lower section of the overview.

salz\_aspect1

create archive

Kommando:  
(cd /var/www/cvs/co/jweb/mapdata/images; rm -f salz\_aspect1.tar.gz)

Rückgabewert: 0

Kommando:  
(cd /var/www/cvs/co/jweb/mapdata/images; tar -zcvf salz\_aspect1.tar.gz salz\_aspect1\*)

Rückgabewert: 0

Ausgabe:  
salz\_aspect1.jgw  
salz\_aspect1.jpg


Kommando:  
mv /var/www/cvs/co/jweb/mapdata/images/salz\_aspect1.tar.gz /var/www/cvs/co/jweb/download/

Rückgabewert: 0

[download archive](#)

Figure 87: You need to complete the export process by clicking "download archive" after you have confirmed to take over the data (see the previous Figure 86).

## 8.4.6 Generate Data as linkable Layer

Vector data can be created as layer nodes for the Mapfiles via the icon . As a result you get a layer form with reference to the data you have selected before. You can use this node to generate a Mapfile. You can activate linked layers so that their metadata can be taken over into the overview of the geo data of RBIS. For further details see the chapter on "Geo Data".

Layer aktivieren

Originaldaten

**LAYER**

Hilfe	Position	Schlüssel	Wert	löschen
		<b>LAYER</b>	eunuts2_meere	
?	1	NAME	eunuts2_meere	<input type="checkbox"/>
?	2	STATUS	ON	<input type="checkbox"/>
?	3	<b>CLASS</b>	eunuts2_meere	<input type="checkbox"/>
?	4	TOLERANCE	0	<input type="checkbox"/>
?	5	<b>DATASOURCE</b>	select	<input type="checkbox"/>
			Parameter auswählen	save

Figure 88: Automatically, you can create a layer node from vector data. This node can be used in a Mapfile.

### 8.4.7 Creating a New Map of this Data

In the same way as described in the sub chapter before you can create not only one layer but a complete map. However, this Mapfile contains only one single layer – the one of the selected data.

---


display map
check
grouping
reference-map
duplicate node
copy node
paste node
create map file

MAP

help	position	key	value	remove
		MAP	thuringia	
?	1	EXTENT	4349927 5563921 4546102.5 5724596.5 <a href="#">select</a>	<input type="checkbox"/>
?	3	NAME	thuringia	<input type="checkbox"/>
?	4	PROJECTION		<input type="checkbox"/>
?	5	SIZE	600 600	<input type="checkbox"/>
?	6	STATUS	ON <input type="button" value="v"/>	<input type="checkbox"/>
?	7	TRANSPARENT	ON <input type="button" value="v"/>	<input type="checkbox"/>
?	8	UNITS	METERS <input type="button" value="v"/>	<input type="checkbox"/>
?	9	WEB		<input type="checkbox"/>
?	10	CACHETIME	1000	<input type="checkbox"/>
?	20	LAYER	thuringia	<input type="checkbox"/>
			select node <input type="button" value="v"/>	<input type="button" value="save"/>

Figure 89: The form of a created Mapfile. For further information see the chapter on “Creating and Editing Maps”.

### 8.4.8 Adding Data as Layer to Existing Maps

The icon  leads you to the menu in which you can select a Mapfile to which you wish to add nodes.

## 8.5 DB Operations

This function enables you to carry out operations that are set by the administrators.

Bitte auswählen!

Bitte auswählen!

Anlegen eines Index auf Felder, die für Filter oder Abfragen häufig benutzt werden.

Figure 90: You can start DB operations with the help of this pull down menu. These operations are set by the administrators.

## 8.6 Editing Data

- Click the button “edit data” in the main menu (Figure 82).



---

A list appears which displays all databank tables that can be edited.



Figure 91: The overview of the editable tables. In order to edit other tables you need to select them in the pull down menu and then click on "submit".

In order to edit tables, they need to be added. You can view the columns of the listed tables and their metadata via the link "info". Furthermore, it is possible to edit metadata and data entries of a table as well as the new data entry.

### 8.6.1 Editing Metainformation of a Table

A table's metadata needs to be added before it can be edited. They can be changed later on.

- Select the table you wish to take over in the pull down menu "add table" in the section "administration of database-tables" and then click submit (see Figure 94).

In order to edit metadata of data that has been already added:

- Use the tables' link "edit description" in the section "administration of database-tables".

Alternatively, you can edit metadata via the "info" window with the help of the link to "edit columns".

You are led to the section "edit the metainformation of a table". Here all attributes, i.e. columns of the selected table, are displayed and allocated to functional sets via a form. These sets determine which editions are permitted.

The following sets are available:

- **Pk** determines the primary key of a table;
- **Ins-list** elements of this set can be edited;
- **Sel-list** columns are displayed;
- **Order** according to these columns the order of the
  - output shall be determined
- **Query** to which columns a query is possible

---

Columns allocated to the set ins-list also need to be set up as sel-list. The same applies for the primary key.

- After determining all settings, click “update” to save them.

In the lower part of the menu *edit* of a table’s metainformation you can find forms to describe metadata for each table attribute. These are explained as parameters in more detail further down.

Attribut	ins-list	order	pk	query	query-comp	sel-list
color [color]	<input checked="" type="checkbox"/> 15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> 25
gid [gid]	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> 5	<input type="checkbox"/>	<input checked="" type="checkbox"/> 5
entity [entity]	<input checked="" type="checkbox"/> 5	<input checked="" type="checkbox"/> 5	<input type="checkbox"/>	<input checked="" type="checkbox"/> 10	<input type="checkbox"/>	<input checked="" type="checkbox"/> 20
layer [layer]	<input checked="" type="checkbox"/> 10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> 15
elevation [elevation]	<input checked="" type="checkbox"/> 20	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> 10
thickness [thickness]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
the_geom [the_geom]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

aktualisieren

Figure 92: The allocation of action sets and table columns is carried out via this matrix. Explanations for the individual actions behind the abbreviations are given further down.

color	color	<input type="text"/>	NUM	<input type="text"/>
	[NO VALUE FOR 1151]	<input type="text"/>		
	Nachschlageregeln	<input type="text"/>		
	Standardwert	<input type="text"/>		
	Regeln	<input type="text"/>		
gid	gid	<input type="text"/>	NUM	<input type="text"/>
	[NO VALUE FOR 1151]	<input type="text"/>		
	Nachschlageregeln	<input type="text"/>		
	Standardwert	<input type="text"/>		
	Regeln	<input type="text"/>		

Figure 93: Here you can enter metainformation for the individual data attributes.

### Action set pk

The action set determines which columns build the primary key of a table. This information is necessary so that only the selected row is affected when you delete or update entries. **Note:** Each column of the primary key also needs to be in the selection list (sel-list).

### Action set sel-list

This action set determines which columns shall appear in the selection list. Consequently, tables with numerous columns can be displayed as lists.

---

### **Action set order**

When you view a selection list the values are given in the determined order. This action set is ordered. For this reason next to each selection box there is a field where you can enter a number which determines the order of the output.

### **Action set ins-list**

With the help of this list you can determine which columns shall be displayed in an entry form and in which order. You need to click on all values that shall get a value by an entry of the user. You do not need to tick the columns which have a default value in the databank.

### **Parameter Visible Text**

In the databank each column gets a name which is necessary to access the column. Unfortunately, this name is not always ideal for any user since the names can be abbreviations and therefore are dependent on special naming rules. For this reason, you can enter a name or number which shall be displayed. If you give a number, the table's name is taken from the language table. Consequently, multilingual forms for tables are possible.

### **Parameter Data Type**

Basically, there is a distinction between numbers and strings. Since we like to have more information for the illustration in the form and for editings in the databank process, there are more than these two types available. However, columns are ordered according to these two types while generating the information for this form. The following further data types are possible:

- CHAR a usual string enclosed by apostrophes
- NUM a number which is only passed on
- PWD a password – is treated like a CHAR but a field for the password is given
- MD5 is treated like PWD but is calculated before it is integrated into the MD5-Hash table, when updating empty PWD or MD5 columns do not overwrite the existing contents
- BOOL a selection box is created
- SER a sequence is used to determine the value. The name of the sequence can be found in the entry field. If there is a standard

---

given in the column, you do not need to use the sequence again.

- HELP is treated like NUM but an additional link is generated to enter words
- GEOM this column contains a geometric entry; for the form a WKT string of the points is created; a new value for SRID and the geometry type is generated from the given values while processing, so we can record geometries in our forms.
- DATE an entry field with an icon to select a date is generated via Javascript.
- DTIME treated as the data type DATE but a date is recorded
- MAPPT an icon to open a map is generated which writes back selected coordinates to the entry field. Cookies with Javascript are used. In the action parameters there is the ID of the map and optionally you can find attributes of the entry field separated by "#".

### **Rule to Look up Parameters**

With the help of this parameter you can determine the value facet and the form of appearance. The beginnings *list*, *select* and *textarea* are analyzed separately; all the other entries are added as attributes to the corresponding element.

*Textarea* generates a text area whereby all further information is set up as attributes of the text area.

With the help of the statement *list* you can create a fixed list of values. The individual values are separated by the symbol “,”

The statement *select* can be used to create a selection field. Together with *select* the text is set as a valid SQL statement which projects one or two columns. The first column contains the value for the table column; the second contains the displayed value. If there is only one column, there is no difference between the value and the displayed value. If you write *selectNULL* instead of *select*, a zero value can be selected.

Within the SQL statement you can allocate enclosed columns of the *ins-list* to already entered values with the help of the symbol “#.”

It must be possible to reload the contents of the form otherwise the process described before does not make sense. For this purpose, you can create an *onchange* by adding “SUB” to a list action or select action to send the form. The PHP scripts know, that the data is only valid when you click submit with the name

---

attribute "btnSubmit". However, this is not the case here, so that the form can be loaded again.

Note: Dependent fields must be placed behind those fields from which they are dependent. This is necessary to generate the first form.

### **Parameter Default**

This parameter is used to allocate values to the form elements when you add data. These parameters do not work for forms used to update values. There are three different types of parameters: a constant value, the result of a PHP method and the result of an SQL query.

A constant value is simply taken over and is marked by "C:" at the beginning of a row. In case you forget to mark the row, the entire string is taken over as constant. There is no correction check of the entries at this step of the process.

A PHP method is marked by "P:" at the beginning of the row and is followed by a method name, e.g. (P:date). For this method, which you can find in the class DE\_Defaults, you do not need a parameter. Consequently, the user cannot enter an analyzable PHP source text that may cause any damage. The input method checks if the class really contains the method.

An SQL statement is introduced by "S:" and contains a statement which provides exactly one value. If the statement contains any errors, there will not appear an error message but no value will be set. Otherwise, the result of the first column's first row will be used as default value.

### **Parameter Rules**

The user's entries are checked. If there is a rule, it must give the logical value so that the entry is accepted as valid. There are two types of rules: client rules, which are carried out as Javascript for the client, and server rules, which are checked on the server. All rules are listed in the rule section and are separated by "#".

Client rules are taken from the quickform scripts which serve as a basis. Only the first rule of the rule section is used for client rules. In order to separate several client rules, the symbol ";" is used. A client rule consists of three parts which are separated by ":". The first part contains the name of the rule – possible names are listed in the quickform manual. The second part contains a parameter which may be necessary for the rule, e.g. length for lengths checks. The third parameter contains the number of the language entry for an error message, e.g. "required::345".

Server rules consist of two parts separated by the symbol ":". The first part contains a Boolean expression which is analyzed; the second part contains the number of the error message. Within the first part PHP statements as well as SQL statements can be

used. You can access existing variables via square brackets. All column names of the ins-list are available. As for default values only methods of the class `de_rules` can be used here. These must contain parameters and confirm correct values by the expression „true“.

An SQL rule must always begin with the statement “select” and needs to provide a logical value. For this purpose, it is necessary to compare the result with a value. Thereupon, the database gives the result of the comparison. In order to check if a certain value exists, the following rule has to be used: “select (select count(xyz) from table1 where xyz=[element])=1:862”. When all rules are true the data set is integrated. Otherwise, a form with the relevant error messages is generated.


## 8.6.2 Management of DB Files

This is an overview of the editable tables. Here you can edit, add and delete data entries. Furthermore, you can get or edit information about the columns of the tables and their metadata.



gebaeude	<a href="#">ändern</a>	<a href="#">einfügen</a>		<a href="#">Beschreibung editieren</a>	<a href="#">Info</a>	
salzburg_hru	<a href="#">ändern</a>	<a href="#">einfügen</a>		<a href="#">Beschreibung editieren</a>	<a href="#">Info</a>	
test	<a href="#">ändern</a>	<a href="#">einfügen</a>	<a href="#">löschen</a>	<a href="#">Beschreibung editieren</a>	<a href="#">Info</a>	
w80_kartenrahmen					<a href="#">Info</a>	

Figure 94: The listed tables can be edited. New tables need to be added first.

- **Change:** Opens the section “update data” where you can change the table’s data.
- **insert:** Insert a new data entry.
- **remove:** This option is only available when you are the owner of a table which has been taken over.
- **edit\_description:** Editing metadata of a table.
- **Info:** Lists metadata of the table columns/attributes
-  Allocation of authorization – you need to be the owner.

---

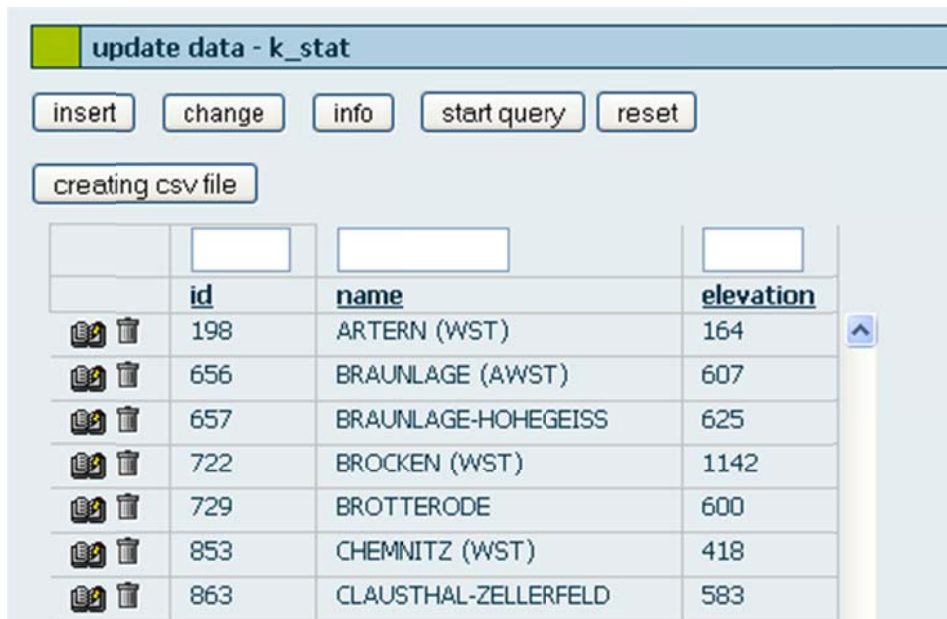
## Change Data

- Click “change” behind the table you wish to change in the section “management of DB tables” (see Figure 94 and chapter 8.6.2).

A table opens where you can change entries. It depends on the metadata described before which column of the data table is displayed (see chapter 8.6.1). In the overview you can see all table attributes to which the function “sel-list” has been allocated.

The data is ordered according to the attributes which have been allocated to the action set “order”. Click on the name of the column in the heading to arrange the data in the column in ascending or descending order. Then, the table is loaded again.

You can decide whether you want to display 20, 30, 50 or 100 hits per page with the help of the pull down menu in the footer. Here you also find help to navigate to the previous, next, first or last data sheet.




















	id	name	elevation
 	198	ARTERN (WST)	164
 	656	BRAUNLAGE (AWST)	607
 	657	BRAUNLAGE-HOHEGEISS	625
 	722	BROCKEN (WST)	1142
 	729	BROTTERODE	600
 	853	CHEMNITZ (WST)	418
 	863	CLAUSTHAL-ZELLERFELD	583

Figure 95: Detail of a data table. The displayed columns are the ones that have been described as sel-list. You can only edit the columns of the ins-list (see Editing Metainformation of a Table).

Above the heading there are entry fields for queries which are useful to filter the data set. Enter the operator and the query variable and then do not use “enter” to complete the query but click “start query”.

Use the symbol of the recycling bin  to delete individual entries. Note: You are not asked again if you really want to delete the entry.



- **Deleting data** click the symbol ,
- **Editing data** click the symbol  to get to a form where you can edit data.

Metadata determine which attributes of data entries are permitted to be changed. The action set “ins-list” (see chapter 8.6.1) is responsible for this admission. All attributes which are inserted as “ins-list” are displayed in the form (see Figure 96).



Figure 96: The form where you can edit data of a table. Attributes, i.e. columns of the table, need to be identified as “ins-list”. “Reset” resets the data to the original data.

In the upper area of the section “update data” there are several buttons available. Among other things you can export data as CSV file. Hereby, data is exported that has been selected before. So you can start a query before the export and then save the selected data.

The button “reset” loads the data set again so that selections and entries that have been made before are deleted in the entry fields in the heading of the table.

The button “info” opens a window “column of tables <name of table>“. The minimal value, the maximal value, the number of the NULL-values as well as the table’s data type is displayed.

“Insert” opens the same form as is needed to change data (Figure 96). However, the form is a blank one. You can also add data in the “management of DB tables”.

### 8.6.3 Information about a Table’s Columns

In several sections there is the button “info” available, e.g. in the sections “management of DB tables” or “change data”. This help opens a separate window with information about columns of the corresponding table.

For each column the minimal value, the maximal value, the number of NULL-values, the data type as well as the name of the column is displayed.

If you wish to change metainformation, use the link “edit columns”. For further information see chapter 8.6.1.

Spalten der Tabelle salzburg_hru (7066)				
Spaltenname	Spaltentyp	minimaler Wert	maximaler Wert	Anzahl der NULL-Werte
__gid	int8	1	7066	0
rec_num_1	int8	1	7066	0
grid_code	int8	1	41096	0
gid	int4	1	7066	0
salzb_as_r	varchar (50)	1	3	0
salzb_soil	varchar (50)	1	5	0
salzb_slo_	varchar (50)	1	4	0
salzb_lu	varchar (50)	1	8	0
class	varchar (50)	1	99	0
perimeter	numeric	540.0000000000000000	59760.0000000000000000	0
area	numeric	16200.0000000000000000	15049800.0000000000000000	0
the_geom	geometry	-	-	0

[Spalten editieren](#)

Figure 97: Information about the data columns of the table “Salzburg\_hru”.

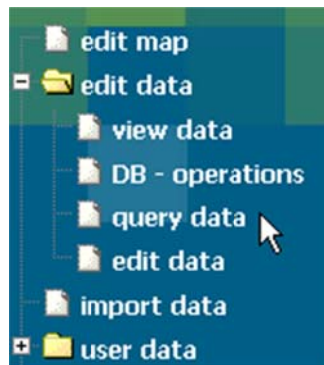
## 8.7 Query of Data

There is a query of data tables available whereby information is filtered. Queries can be carried out in so called parameter queries and can then be retrieved at a later point in time. Only few search parameters have to be entered for this purpose. For free queries you need to determine search parameters, the type of output as well as the input data.

Janus uses SQL for queries, so that determinations for queries need to fit SQL syntax. Consequently, SQL skills are helpful. However, they are not necessary.

- Click on the menu item “query data” to be led to the overview “list of sql-queries”.

By default you get a list of the existing parameter queries which are available as a link in the column “table”.



With the help of the buttons you are led to the corresponding type of query. “add query” enables you to create your own parameter query which you can retrieve as parameter query.

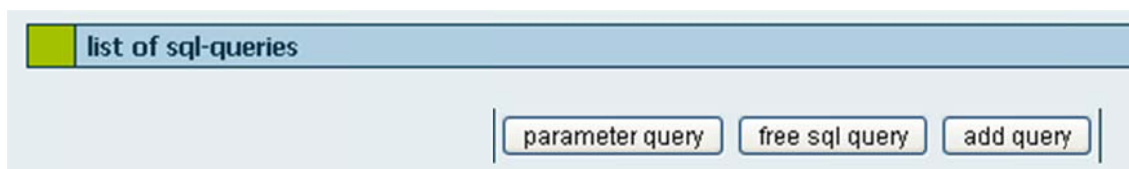


Figure 98: The overview “list of sql-queries”. There is only one parameter query available, i.e. “d6\_fluesse”. If you wish to generate further parameter queries, you need to insert them via “add query”. The icons at the end of a row of a query entry serve to delete data, allocate authorization and change parameters.

## 8.7.1 Creating New Parameter Queries

Prefabricated parameter queries serve to filter datasets quickly.

- Click “add query” in the menu “list of sql-queries”.



You are led to the overview “create new parameter query/add columns”. Alternatively, you are led to this menu when you edit existing parameter queries (see the end of this sub chapter):

- Select the table in the pull down menu “table” on which you wish to carry out the query.

---

input	field	position	visible value	operator	output	lookup	groupe
<input checked="" type="checkbox"/>	id	1	id	view			<input type="checkbox"/>
<input checked="" type="checkbox"/>	elevation	2	elevation	view			<input type="checkbox"/>
<input checked="" type="checkbox"/>	datacolumn	3	datacolumn	view			<input type="checkbox"/>
<input checked="" type="checkbox"/>	gid	4	gid	view			<input type="checkbox"/>
<input checked="" type="checkbox"/>	x	5	x	view			<input type="checkbox"/>
<input checked="" type="checkbox"/>	y	6	y	view			<input type="checkbox"/>
<input checked="" type="checkbox"/>	name	7	name	view			<input type="checkbox"/>
<input checked="" type="checkbox"/>	the_geom	8	the_geom	view			<input type="checkbox"/>

Figure 99: In this form you can determine parameters for the parameter query. "Input" serves to determine the data columns that shall be given in the query. The column where you want to filter data needs to be given.

Afterwards you have to mark the corresponding table columns which you wish to query or from which you wish to get data. You can allocate a name to the query with the help of the field "description".


- Tick the checkbox of the table column that shall be queried or given.

You can determine the order of the output via the entry fields "position". The pull down menu in the column "operator" gives the operator of comparison. The following parameters are available: <;>; <=; >=; =; <>; for string fields use "like" and "between". The standard information is „view“, i.e. the output of the column without any query.

The entry field "output" enables you to allocate new values to the filtered data sets. The field "lookup" enables you to use further tables via an SQL statement.

- Set the operator and optionally a lookup query or an output value.

Save your entries via the button "create". The query is displayed as a link in the "list of sql-queries".

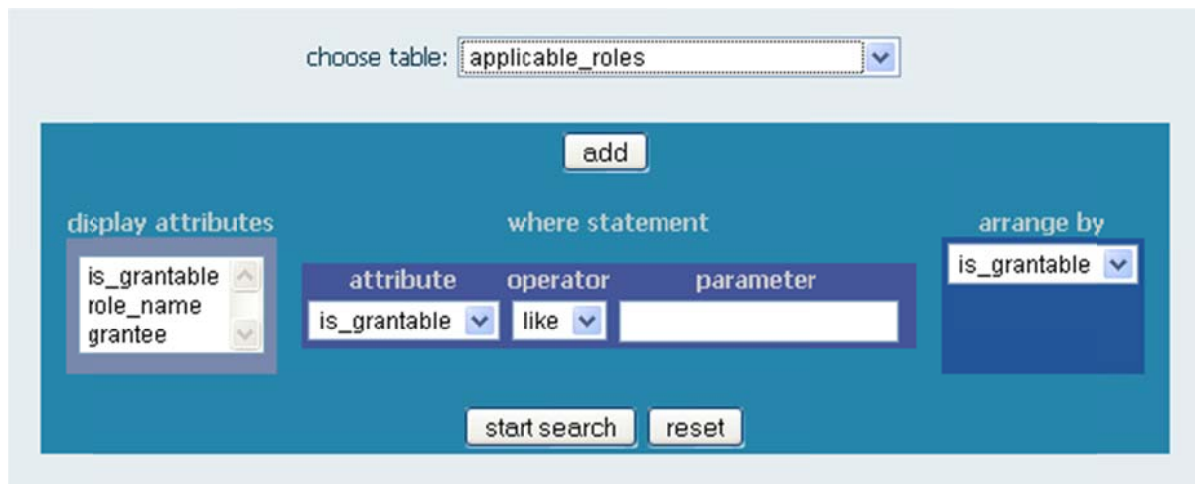
You can change parameter queries afterwards by clicking the icon  in the "list of sql-queries". Click on "add columns" on the following page to be taken to the just described overview "generate new parameter query/add new columns".

---

## 8.7.2 Free Query

- Click free query in the menu “list of sql-queries”.

The query form of table/name of table will be displayed.



*Figure 100: The query form of the table "Salzburg\_hru". Output fields are marked in the field "display attributes". Actually, the query is carried out in the three fields in the middle. "Add" adds an additional where-statement.*

For free queries select a table and the column that you wish to query in the field "attribute". Here you can use the same operators as for parameter queries: <;>;=;<=>;=, "like" and <>.

With the help of the button "add" you can add a second where-statement.

- **Display attributes:** Fields that are displayed as results after the query. To mark several fields click shift or strg and keep it pressed.
- **Where-statement:** Give the table column, operator and parameter of the query.
- **Arrange by:** Data column according to which the results are ordered.
- **Add:** Adding another where statement.

The result of a query is given in a separate window. There are buttons available to print, save and display the results. It is saved in the CSV format. The print option opens a print menu where you can set up the printer. Then, you can view an illustration in map form.

Resultat der Abfrage / SELECT color,gid,entity,layer FROM jena_strasse WHERE gid <= 10 ORDER BY entity /				
Ergebnis speichern		Ergebnis drucken		Karte anzeigen
color	gid	entity	layer	
2	1	Polyline	FAHRWEG	
2	2	Polyline	FAHRWEG	
2	3	Polyline	FAHRWEG	
2	4	Polyline	FAHRWEG	
7	5	Polyline	FAHRWEG	
2	6	Polyline	L_NEBENSTRASSE	
2	7	Polyline	L_NEBENSTRASSE	
2	8	Polyline	L_NEBENSTRASSE	
2	9	Polyline	L_NEBENSTRASSE	
2	10	Polyline	L_NEBENSTRASSE	

Figure 101: The window of the results where you can save, print or display the results.

### 8.7.3 Parameter Query

- Click on the name of the table of the parameter query in the menu “list of sql-queries”.


parameter query		free sql query	add query
table	description		
k_stat	k_stat		

You can enter information and carry out a query via “start query”. The results of a free query are displayed in a separate window where you can also decide to print or save the results or display them in a map.



*Figure 102: When you use saved parameter queries, you only need to enter the parameter values and click on “start query”.*

### 8.7.4 Editing Columns

Parameter queries can be edited or adapted after they have been created. For this purpose, use the icon . In the menu “edit columns” you get an overview of the columns which are defined as output in a query.

You need to tick the checkboxes of the columns that you wish to delete or edit. Ticked columns can be deleted via “delete” from the parameter query. Click “edit” in order to display forms to edit the selected columns. In this forms you can edit the known query criteria:

- Operator
- Output
- Description of the query
- Position
- Lookup
- Data field (table column) of the query
- Visible text (as called in the output of the data column)
- Field type (N or C: Number or Character)
- Grouping (SQL: Group-by-statement)

---

The screenshot shows a web form titled "Spalten editieren" (Edit Columns) with a light blue header. The form is used for editing query criteria. It contains several input fields and a button. On the left, there is a vertical purple bar. The form fields are arranged in two columns. The left column contains: "Beschreibung der Abfrage:" with a text input containing "gebäude"; "Position" with a text input containing "3"; "lookup:" with an empty text input; "Operator:" with a dropdown menu showing "<"; "Feld:" with a dropdown menu showing "gid"; "Ausgabe:" with an empty text input; and "gruppieren:" with an unchecked checkbox. The right column contains: "sichtbarer Text:" with a text input containing "gid"; and "Feldtyp:" with a dropdown menu showing "N". At the bottom center, there is a button labeled "aktualisieren".

Spalten editieren	
Beschreibung der Abfrage:	gebäude
Position	3
lookup:	
Operator:	<
Feld:	gid
Ausgabe:	
gruppieren:	<input type="checkbox"/>
sichtbarer Text:	gid
Feldtyp:	N
aktualisieren	

*Figure 103: The form used to edit query criteria. Apart from field type, visible text and group it is identical to the form that is used to create parameters.*



---

## 8.8 Map Navigation and Map Functions

This chapter describes the user interface or map view of RBIS/JanusWeb. Furthermore, it will be explained how to navigate in the map window and which functions are available. Therefore, you need an existing map. It is helpful to be familiar with UMN MapServer or with its manuals.

First of all, the map view, map elements and window functions will be described. Then, map functions will be explained.

### 8.8.1 Elements of the User Interface

*Generally, RBIS/JanusWeb's user interface consists of several windows which represent the following important elements (see*

Figure 104)


- layer window;
- map;
- toolbar;
- legend;
- reference map;
- scaling/scale;
- coordinates information.

The elements toolbar, coordinates information and scaling/scale are fixed. They are not set in separate windows and consequently cannot be moved, minimized or maximized.

The elements legend, map, reference map and layers are displayed in separate windows.

There is no north arrow in the list above because it can only be added in the print review.

#### JanusDrag&Drop Window Functions

Map elements are displayed in separate windows and therefore can be scrolled via drag and drop. If you put the cursor along the title bar of a window, the cursor turns into the following symbol  which enables you to move the windows when you keep the left mouse button pressed.

In the right corner of the title bar there is the x button to close the window. Moreover, you can minimize the legend window and the map window via the corresponding button. All the other windows only contain the already mentioned button to quit.

Windows can be scaled via the mouse. Put the cursor on the lower right corner and keep the left mouse button pressed to minimize or maximize the window. However, this is not possible for the reference map, which is a fixed map and cannot be changed in size.

If you put two windows on top of each other, the window you moved will be on top. When you activate the window which is behind the displayed window via left mouse click, it will be displayed in the foreground.

In case you cannot find a map element, it may be hidden behind another window.



Figure 104: The user interface in RBIS/JanusWeb with the basic elements: toolbar, map window, legend, layers.

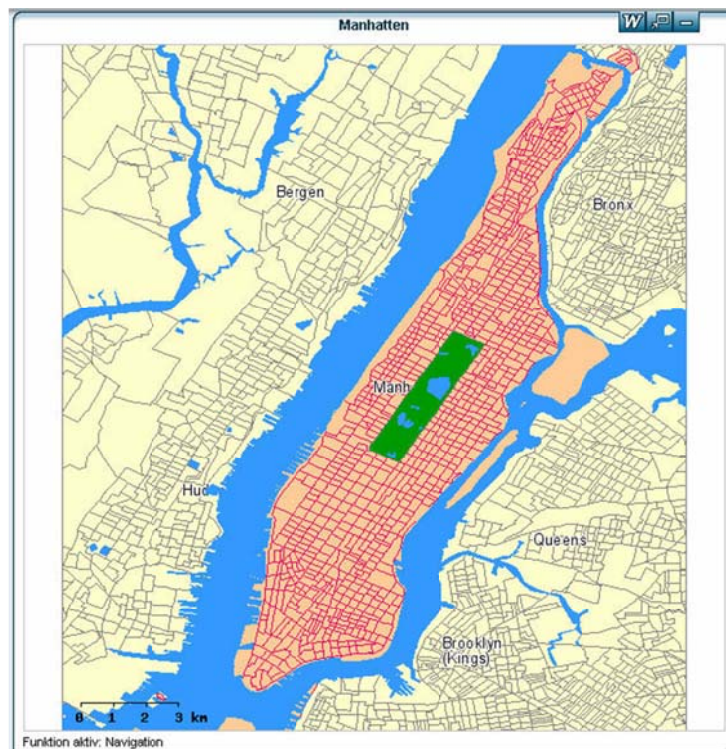
## The Map

The map window is the actual map as it is set up in the Mapfile (see chapter creating maps). Functions of the toolbar (see next chapter) refer to this map window.

In the title bar the title of the displayed map is shown. There is a button to minimize the window as well as to show full screen. **Note:** The button for information about

spread sheets does only work for the project KlettGIS. In other projects there will occur an error message.

The map window can be displayed on full screen with the help of the corresponding button – all other windows as well as the toolbar are still displayed. In the lower left corner of the map you can see the current active tool.



*Figure 105: In the title bar you can find the map window with the elements to work with the window management. Below the scale bar you can find the information about the active tool.*

### **The Scale Bar**

Position, appearance and size of the scale bar can be set up in the Mapfile. For more detailed information see the chapter on creating maps.








### **The Toolbar**

The toolbar, displayed in the center of the upper screen part, enables you to navigate in the map and offers further functions like distance measurements, search for objects in the map, etc. For further information see chapter 1.3.1.






Extending the map with the help of a frame which you can put in the map. Select this zoom function to draw a frame with the left mouse button so that you can view a zoomed detail.

---

	Extending the map about one level. The selected map detail will be zoomed about a certain value.
	Minimize the map about a certain value (see above: extending the map).
	You can also zoom via the sliding bar. Put the sliding bar to the level you wish to use. The map will be reloaded immediately after letting go the sliding bar.
	Moving the map detail. Use the left mouse button, keep it pressed and move it to the desired position. If you let go the mouse button, the moving process is finished.
	Reset the map detail to the original detail.
	<p>Measurement tool. Opens a separate window for distance measurement and area measurement. Here you need to decide whether you wish to measure a distance or area. Click the corresponding button and then set the points in the map that you wish to measure. You can set several points. The polyline or polygon that is developed is measured, then. After setting all points confirm via double click. Note: the last point needs to be set via double click because an additional point is set via the double click.</p> <p>The result of the measurement will be displayed in the window “measure distance/area” in a pull down menu in different units. Here you can select the ones you need.</p>
	Start search. The symbol opens a query manager for the data table of the generated layers.

---

	<p>Info tool: Starts an attribute query for the layer that is activated in the legend.</p> <p>Click on the info tool symbol to open an additional info window. If you have already activated a layer in the legend, you can now choose an object in the map via clicking the left mouse button. Thereupon, you get information about this object from the corresponding attribute table.</p> <p>If there is no activated layer, a message in the info window will appear.</p> <p>As a result you can see the attributes of the selected object in the info window. When you click the globe symbol in the info window it moves the map window into the foreground and the info window into the background.</p> <p>Display of attributes and information about objects. Select a layer from the legend and click on the object. Alternatively, you can draw a rectangle on the map in order to display all attributes of the objects within the rectangle.</p>
	<p>Legend editor. This tool opens the legend editor with which you can change signatures and colors for the illustration of the layers.</p>
	<p>Print map: Opens print settings where you can edit the form of appearance of the print.</p>

### Layer Window

Layers (or themes) are information layers, e.g. streets and rivers. Layers can be displayed or masked out in order to display the desired information.

To activate or deactivate individual layers, tick the corresponding layer windows. As soon as you change anything, e.g. tick a box, the map is reloaded.

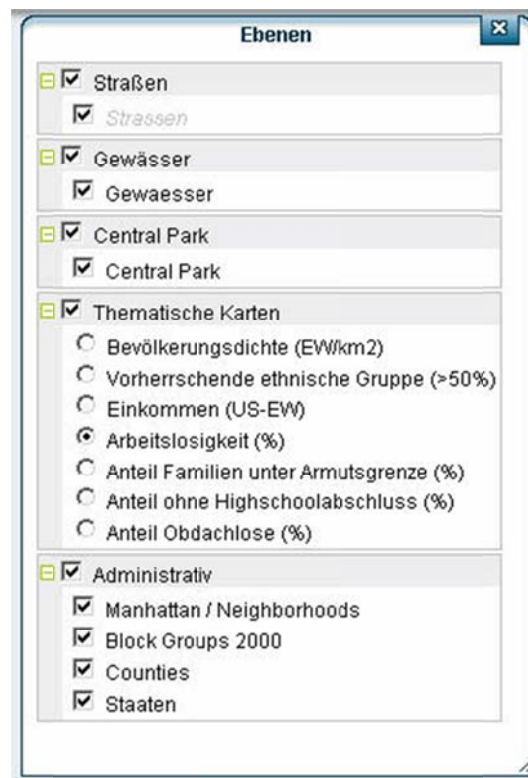


Figure 106: Activated layers are marked by ticked checkboxes. To activate or deactivate them you either tick the boxes or not. Mind the round checkboxes of the “thematic maps” can only be selected and visualized individual.

For a better overview and quicker activation or deactivation layers are usually grouped. Therefore, it is possible to display or hide entire layer groups. The symbols on the left hand side of the layer description serve to list the subitems. The order in layer windows determines which layer is in the foreground, i.e. superordinated layers are displayed in the foreground. The order can be determined via the two buttons next to the layer description.

Note: Some thematic layers can only be viewed individually and therefore, in our example there is only one active layer in the section “thematic maps”. In this case checkboxes are circles; usually they are squares, though.

## Legend

In the legend you can find explanations for all visible symbols and colors of the map. You can set up colors and signatures in the legend editor.

## Reference Map

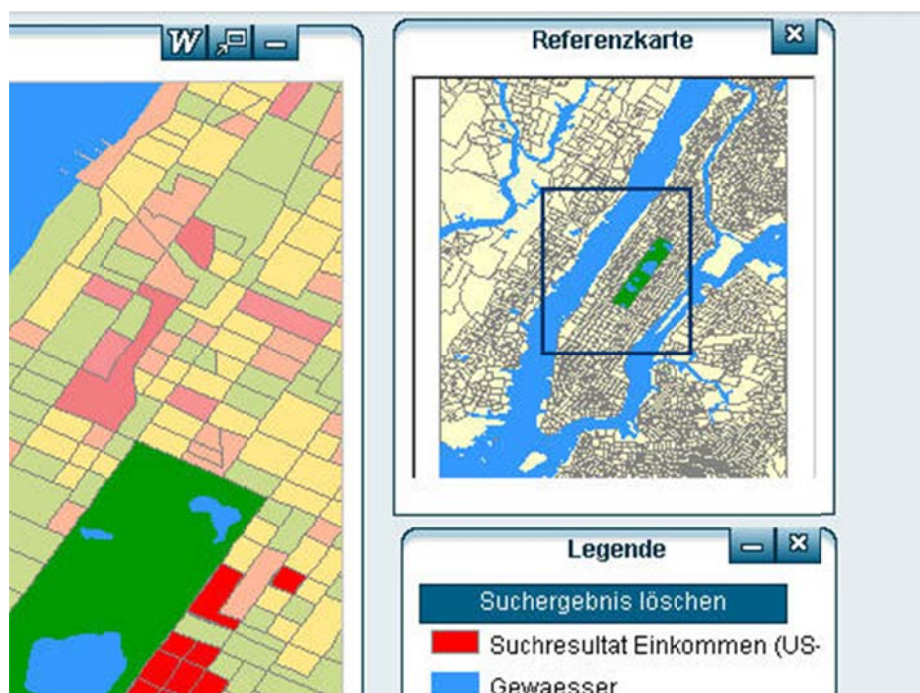
The reference map serves as overview for the user. At a glance you can see where you are in your current map detail. You can also navigate via the reference map.



---

The area which is currently visible in the map window is marked by a black frame in the reference map. Move this frame to the area you wish to view in order to display this area in the map window. To move the frame put the cursor on the frame (the cursor then turns to the symbol to move things). Then, use the left mouse button, keep it pressed and get it loose where you wish to stop. The map window will be reloaded.

Depending on your zoom settings the frame will be bigger or smaller. You can determine the size beforehand, e.g. via the toolbar.



*Figure 107: The black frame in the reference map shows the current map detail. The frame can be moved to select a specific map extract.*

### **Map Information/Coordinates Information**

When you move the cursor along the map, you can see the coordinates in the info box on the right side of the toolbar at the same moment.

### **Scaling/Scale**

In addition to the toolbar and the coordinates information the scale of the detail, which is displayed in the map window, is shown. The UMN Mapserver calculates the scale on the basis of a resolution of 1/72 inch per pixel. However, this can only be seen as an approximation. The measurements of the pixels vary from screen to screen and depend on the resolution. The tilde in front of the scale information indicates this uncertainty.

---

The scale of the current map is given in an entry field, so you can change the value. When you click on the link “scale” or press enter, the map will be displayed in the new scale.

When minimum and maximum of the scale have been determined by the editor, you need to stay within these values. If you try to go beyond these values, there will appear a message and the scale will be set to the upper or lower limit.

## 8.8.2 Map Functions

### Scrolling/Moving of Maps


You can move on the map in two ways, i.e. with the help of:

- the reference map
- or
- the symbol to move things, which can be found in the toolbar.

### Moving via Reference Map

- Click on the black frame or the area marked by the frame.
- Keep the left mouse button pressed and move the frame.
- Or alternatively,
- click on the selected area in the reference map.
- The map detail will be reloaded by RBIS/JanusWeb immediately after the click.

### Tool to move maps

- Activate the movement tool by clicking  in the toolbar.
- Now click into the map detail in the map window and keep the left mouse button pressed.
- You can move the detail with the pressed mouse button.
- If you scroll across the map window, you cannot move the frame any further. In this case RBIS/JanusWeb reloads the map window.

### Zoom Functions





RBIS/JanusWeb offers numerous zoom functions: in the map window via:

- Scroll wheel of the mouse;



---

in the toolbar via:


- sliding bar; 
- minimize/maximize button;  
- free zoom 

### **Scroll Wheel of the Mouse**

- Move the scroll wheel forward to zoom about one level in the map detail.
- Move the scroll wheel backward to zoom back.

Immediately after moving the scroll wheel the map will be reloaded.

### **Sliding Bar**

- Click on the sliding bar. 
- Move the sliding bar to the desired level by keeping the left mouse button pressed.


The map detail will be scaled to the selected level automatically, i.e. zoomed in or out as soon as you let go the mouse button.

### **Minimize/Maximize Button**

- Click the maximize or minimize button.  

The map detail will be scaled according to a certain value and is then loaded immediately after the process.

### **Free Zoom**

- Select the button for free zoom. 
- Draw a frame in the map window with the help of the pressed left mouse button.

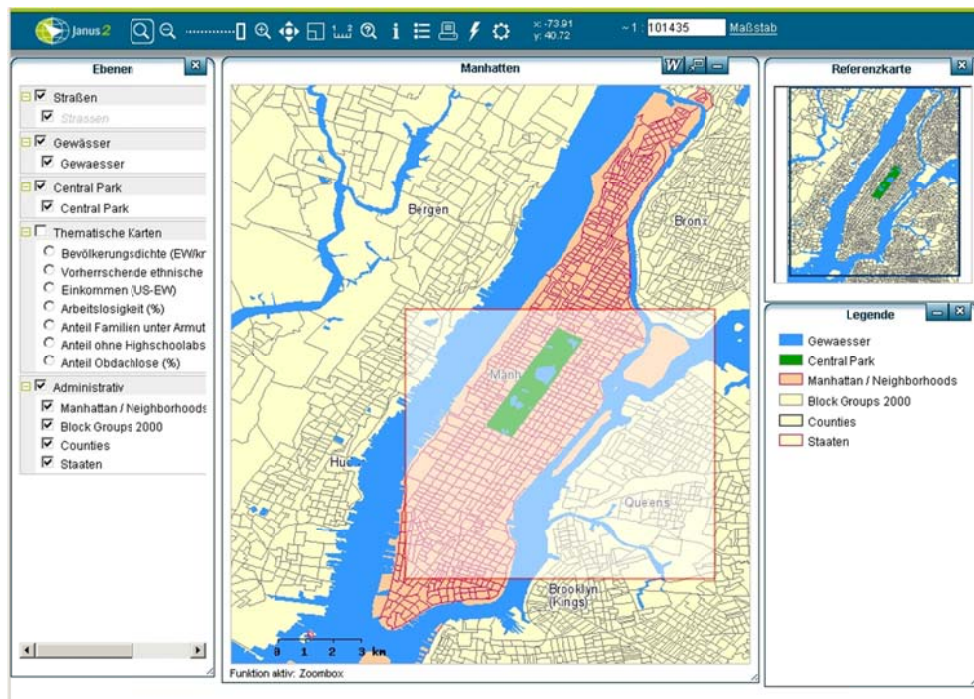


Figure 108: The transparent frame which is used for free zoom determines the size of the new detail.

## Start Search

Queries can be carried out in the data tables of the displayed layers. Data rows are filtered according to search conditions and are listed, then. Furthermore, you can display them in the map if you like.

In order to start a search in the data table of a map layer, users need the authorization MAPSEARCH.

- Select the *start search* tool in the toolbar. 

A separate search window opens. Here you need to select the map layer first. In the data table of the map layer a query will be started.

- Select the map layer in the pull down menu.

Thereupon, a search form appears in the area below. There the attributes of the data table are available. Furthermore, you can set the operator and the search parameter to filter data.

- Set up the search condition by selecting the attribute, the operator and the parameter in the parameter entry.
- After setting up all your search conditions, start the search with the help of the corresponding button.

The search results are displayed in a table in the search window below the search form.

Figure 109: The separate search window with the results, search form and layer selection.

The query allows the operator '=' ('like'), as well as >, <, >= and <=. Click on the button "attributes" to add further search conditions to the query and to add links to other criteria via the Boolean operators 'Or' and 'And'.

For more than two search conditions you can allocate brackets. This step needs to be done according to the distributive law.

Parameters, i.e. search values, can be entered in the corresponding entry field. If you do not have an overview of the parameters, you can view all selectable


parameters in a pull down menu with the help of this symbol , which is placed next to the entry field. However, this works only for parameters of the data type 'string'. For numerical values you are only informed about the spectrum of values that is available. Furthermore, a selection bar is offered to set the desired value.



Figure 110: Numerical search parameters can be selected via a bar or entered in the entry field. For data of the data type string a pull down menu is available. In both cases you need to confirm your selection by ticking the checkboxes.

### Saving Queries

You can save determined search conditions so that you can use them at a later point again. The condition therefore is a completely entered search condition: attribute, operator and parameter.

- Determine the search condition
- Click the button “save”.
- Enter the name of the query in the entry field and confirm with pressing enter.

Now you can always retrieve this query in the pull down menu *saved query*.

### The Result of the Query

Below the search form the result of the query will be displayed, i.e. the rows of the data table to which the search conditions apply to. In addition to the search attribute all attributes of the data table are listed.

The results can be ordered with the help of the row titles. If you click on the title twice the rows will be given in reverse order. You need to use the bar that is placed at the bottom of the page in order to navigate within the result table. The number of hits of the current page and the total are displayed. You determine how many hits shall be displayed on one page.

Of course, you can visualize the results in the map. RBIS/JanusWeb generates a query layer for this purpose. If you wish to display only parts of the results as individual layer in the map, you need to tick the checkboxes of the corresponding rows and then click “show in map”. The illustration is carried out on the current page of the result overview. In order to view all result objects in the map, you can use the link *show query result*.

---

## **Print Map**

RBIS/JanusWeb offers the option to print your maps. In a narrower sense this is no option to print your map directly. You can rather generate a distribution in the form of a JPEG-, PNG- or PDF file which you can then print.

1. Click on “print map” in the toolbar.

As a result a window will open with the headline “print alignment” which is arranged in the following sections:

- Description
- Format
- Other features

**Druckeinstellungen**

**Beschreibung**

Titel der Karte: Manhattan  
Verfasser: Dokumentar  
Untertitel: Arbeitslosigkeit

**Format**

Skalierung: 1 : 101435  
Papierformat: A4  
Ausrichtung: ☐ Hochformat ☒ Querformat

**Sonstige Eigenschaften**

Nordpfeil: oben links  
Beschriftungen ausblenden ☐  
Legende auf neue Seite zeichnen ☐  
PDF ☐  
PNG ☐  
JPEG ☒  
Druckseite erstellen

*Figure 111: In the window of the print settings you determine the distribution format as well as the description, the north arrow and the masking of inscriptions.*

You can enter a title, subtitles and name of the editor of the map in the section “description”. All information is optional.

In the section format you can determine settings for paper format, page layout and scaling. You can decide whether you wish to print the map in landscape or portrait with the help of the checkboxes in the section alignment. For the paper format you can decide for A3, A4 or A5.

The item scaling offers you to determine the scale of the print. Just enter the scale relation in the entry field.

As mentioned above the north arrow will be added to the map when you set the print settings. For this purpose, go to the section “other features”. You can choose between 'north arrow', 'no north arrow' and the position 'top left', 'top right' and 'bottom right' or 'bottom left.'

Here you can also mask out inscriptions of the map. When you tick a checkbox and you add inscriptions to your map, an overview will be given where you can mask out inscriptions you do not want to display or keep inscriptions you wish to be displayed.

- When you have set all print settings you can generate the printed page by clicking on generate printed page.

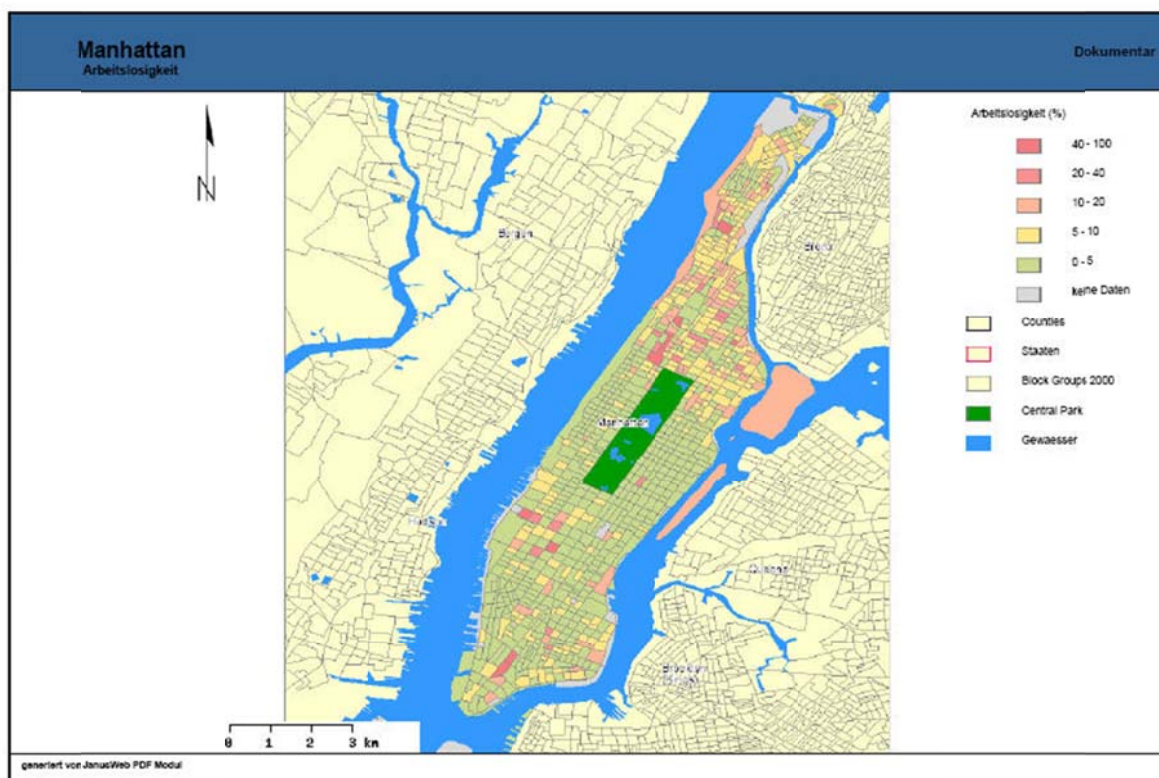


Figure 112: Sample of a printed PDF file. Title, subtitle and name of editor are given in addition to the north arrow,