# SIEMENS

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# B.Data V6.0 SP1 – Operation

**Operating Manual** 

SIMATIC

### Legal information

#### Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

#### 

indicates that death or severe personal injury will result if proper precautions are not taken.

#### WARNING

indicates that death or severe personal injury **may** result if proper precautions are not taken.

#### 

indicates that minor personal injury can result if proper precautions are not taken.

#### NOTICE

indicates that property damage can result if proper precautions are not taken.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

#### **Qualified Personnel**

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

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We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

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# Introduction

# 1.1 Why we need energy management

Energy costs take a substantial slice in the cost balance of many companies. However, it is possible to significantly reduce this cost factor by optimizing energy consumption and taking advantage of the benefits offered by the liberalized energy market. Investments in this optimization process can be amortized on a short-term basis in many cases. Utilization of the entire spectrum of energy cost reduction demands integrated system solutions: the range covers the monitoring, analysis, and evaluation of the relevant energy and operational data, as well as energy forecasts and optimization functions. Under the aspect of a continuous adaptation process that is enforced based on requirements of the liberalized energy market, it must be possible to adapt the systems used without considerable investment. The following sections provide more arguments in favor of energy management.

- Rising energy costs.
- Only partial transparency across infrastructure processes, preventing an overall assessment of all processes and media.
- Cost centers or cost units change continuously.
- The existing heterogeneous system environment poses high demands on interface management.
- Equipment for automatic measurement data recording is not available in the relevant areas.
- Poor transparency prevents further optimization of energy supply contracts.
- In many cases, energy costs represent an extremely high portion of unmanaged production costs.

1.2 How can B.Data support energy management?

## 1.2 How can B.Data support energy management?

B.Data provides exactly the functionalities that are indispensable for the comprehensive analysis of energy management. Thanks to its flexible **scalability**, B.Data can provide solutions for both medium-sized companies and large corporations with location-spanning requirements.

Firstly, the customizable **interface management** function supports current standards such as OPC, ODBC, ASCII, or XML. Secondly, the interface management provides direct interfaces to Siemens products such as WinCC and PCS 7. which support synchronization of the configuration of data points.

B.Data offers a highly diversified Real-time **kernel** in its interface management. The calculation core supports numerous mathematical functions, as well as the mapping of non-linear cohesions.

B.Data provides functions for **data plausibility checks** and various substitute value strategies that enhance database quality.

**Transparency** of the energy flows in all types of media in a company is indispensible for energy management. B.Data is the ideal tool for calculating **energy and material balances** as well as **key figures** that can be used to compare different processes, including different operations.

The diversity of the liberalized energy market demands a precise forecast of future energy consumption. Use B.Data's **Schedule Management** to make forecasts that are derived from basic load profiles and current production plans at company or division level.

Only the allocation of energy costs based on the cost-by-cause principle generates **cost transparency** and sensitization with regard to energy costs. The **Cost Center Management** tool of B.Data maps cost centers and allocates consumption accordingly based on distribution codes, area data, employees, or measured data.

It also enables the mapping of cost center changes during the year, as the calculation logic and all changes are recorded. **Reproducibility** of report results is of particular importance in this area. All changes made to the data are also recorded. This means that users can always rely on the old data for their evaluations.

An automatic reporting system that is easy to configure forms a key factor that has considerable influence on the reduction of personnel workload. At the same time, the quality of the reports is significantly improved. In addition to the fully-fledged client, you can also use **B.Data Web** to view the reports and results.

B.Data provides functions for the **batch-related** recording and evaluation of data to support more detailed analyses of the various processes.

B.Data **Trender** can be used for graphic visualization of historic and current measured values to allow rapid analysis. Moreover, online values can be displayed in a graph using B.Data visualization.

B.Data's **Document Management** enables users to generate links to their documents in the system, or to save these to the database in order to make them generally available to other users.

B.Data Task Management enables scheduled reporting, interfaces, calculations, etc.

# 1.3 Areas of application

B.Data interfaces the process and office environments in the following segments:

- Industry
- Power plant operators
- Municipal enterprises

1.4 Preface

# 1.4 Preface

#### Purpose of this documentation

This documentation contains information pertaining to the functionality of B.Data.

This documentation is aimed at plant managers, planners, and plant operators as well as service and maintenance personnel.

#### Basic knowledge required

General knowledge in the fields of IT, automation engineering, as well as general electrical engineering is indispensable for comprehension of this manual.

# 

Working with electrical systems

B.Data does not exempt users from responsibilities in terms of the handling of electrical systems.

Moreover, it is presumed that users have appropriate knowledge related to the use of computers running on a Windows operating system.

#### Scope of this manual

This manual is valid for B.Data V6.0.

#### Guides in the manual

The manual contains the following guides that support rapid access to the information you require:

- A complete table of contents and a list of all tables are available in the opening section of the manual.
- An overview of the topical contents is provided at the beginning of each chapter.

# **B.Data Plant Explorer**

## 2.1 Starting B.Data

#### Requirement

B.Data login information are known

#### Procedure

To start B.Data, follow these steps:

1. Double-click the "B.Data Plant Explorer" icon on the Windows Desktop:

#### Note

If you are starting B.Data for the first time, the "B.Data configuration" dialog will be opened.

The login dialog is opened. If "Single Sign On" is enabled for your user account, the following login procedure is omitted.

- 2. If you want to change your password, click "Change password".
- 3. If you want to generate a temporary password, click "Forgot password".
- 4. Type in the user name and password.

For the user name, you can also enter the email address that is stored in your B.Data user account.

5. Click "Login".

#### Result

B.Data is started, and the B.Data Plant Explorer is displayed.

#### Forgot password

If you have forgotten your password, you can have a temporary password generated. The temporary password will be sent by email to the email address that is stored in your B.Data user account.

If you have received the email with the temporary password, click "Change password" in the login dialog.

2.1 Starting B.Data

#### Change password

You can change your B.Data password in the login dialog. In order to change it, you need your old password or a temporary password.

#### Note

You will be separately notified via email regarding a password change. If you have received such an email, without having changed your password, this can indicate a hacked user account. Please contact your administrator in this case.

#### See also

Plant Explorer as navigation tool (Page 17) B.Data Configuration (Page 387)

# 2.2 Plant Explorer as navigation tool

The Plant Explorer is the Windows-oriented user interface of B.Data. Plant Explorer is used to configure all objects that you need for energy management in your organization:

• You configure the objects that contain your operating data, such as datapoints or matrices.

With the object-oriented approach of Plant Explorer, you can use an object in several areas, such as for the calculation of performance indicators or in reports. Modifications will automatically be applied to all points of application and are recorded simultaneously in change management to ensure reproducibility of older configurations.

- You evaluate your operating data, or performance indicators using reports or trends, or display this data clearly in a visualization or dashboard.
- You use a wizard to configure the interfaces such as WinCC or OPC, which provide you with operating data.

Plant Explorer has the following structure:

#### B.Data Plant Explorer

#### 2.2 Plant Explorer as navigation tool

	B.D/4	B.Data Plant Explorer - [new 1] – 🗖	×	
		SIEMENS B.DATA	A	
1—		File     Acquisition     Processing     Analysis     Master Data     Administration     Help     Leven     System/Admin!   Active Domain: <all:< th="">                 #             #</all:<>	>	
2—		System  Customer	Į	
3—		Menu       Children       Description         Image: System       Data collection       Data collection         Image: Calculation Level I Loop / Prototype       Calculation Level I MEVA's       Reports         Image: Calculation Level II MEVA's       Reports       Trends         Image: Calculation Level II MEVA's       Document Management       Document Management         Image: Calculation Level II MEVA's       Document Management       Document Management         Image: Calculation Level I Market       Document Management       Document Management         Image: Calculation Level I Market       Document Management       Document Management         Image: Calculation Level I Market       Document Management       Document Management         Image: Calculation Level I Market       Document Management       Document Management         Image: Calculation Level I Market       Document Management       Document Management         Image: Calculation Level I Market       Document Management       Document Management         Image: Calculation Level I Market       Document Management       Document Management         Image: Calculation Level I Market       Document Management       Document Management         Image: Calculation Level I Market       Document Management       Document Management         Image: Calculation Level I Market		-4
		Quicklinks 10 node(s)		
		Objects		

#### 1 Menu bar

All buttons for system operation are placed in the menu bar and organized in categories.

#### 2 Navigation bar and Quick Search

The navigation bar shows the current position in the project tree in text form.

The quick search is a simple full-text search. The search result is displayed in the display area (4).

#### ③ Project tree

You create objects that you need for energy management in the predefined "System" root in the project tree. You can organize the project tree, for example, according to locations or function. Create favorites to frequently required objects in the "Quicklinks" area.

#### (4) Display area

The display area shows details of the object that you selected in the project tree.

2.2 Plant Explorer as navigation tool

#### See also

Objects in Plant Explorer (Page 20)

Displaying object relations (Page 31)

Object naming conventions (Page 33)

Search for object (Page 34)

Create Quicklinks (Page 36)

Configuring Quicklinks (Page 36)

Calculation level 1 "The loop concept" (Page 125)

Calculation level 2 "The MEVA concept" (Page 183)

Calculation level 3 "Report and visualization concept" (Page 189)

# 2.3 Objects in Plant Explorer

# 2.3.1 Object basics

#### **Object definition**

Objects let you configure all of the components you need for energy management in your organization in B.Data :

The following objects are available, for example.

Folder

Object for structuring in the project tree of Plant Explorer

Datapoint

Object for saving the measured values of a measuring point

- Prototype, loop
   Objects for processing measured values during import
- Parameters, measuring variables
   Objects for time-independent processing of measured values
- ERP domain, cost center relation, cost center, service type Objects for Enterprise Resource Planning
- Report, trend, visualization, dashboard
   Objects for the display of measured values
- User, user group, functional group, domain
   Objects for configuring authorizations in B.Data
- Hardware, process, driver source, IO buffer
   Objects for configuring data acquisition in B.Data

## **Object properties**

A property is a characteristic that is assigned to a specific object. In B.Data, an object can have the following properties:

Automatically generated properties

The system automatically generate these properties,, e.g. "Name" and "Description", when you create an object.

• Manually assigned properties

You can assign these properties to an object, such as "Created on" or "Created by".

Manually assigned properties are then subdivided into the following categories:

• Default properties

You can assign an object a property that is already defined in B.Data, "Created on" for example.

• User-defined properties

You can also create your own properties, which you can then assign to an object.

You can use object properties for the following purpose:

- To search for these properties
- For titles in reports

#### Access rights for objects

You can prevent unauthorized read access to specific objects by defining these in B.Data:

Authority level

You specify the authority level with a value between 0 and 1000:

- "0"

All users can view the object.

– "1" to "1000"

If you enter "50", for example, the object is visible to all users assigned authority level equal to or higher than 50.

You can automatically assign the authority level of an object to all nested objects.

• Domain

The domain represents a location of a business, for example. Users can be assigned to one or several domains.

Only the objects of the domain you activated are displayed. Newly objects are assigned exclusively to this domain.

#### Using and copying objects

Once an object is created, you can use it elsewhere in the project tree, e.g. in a report or calculation. You can also create a clone of the object in order to create a similar object.

This is done using the following B.Data commands:

- Using "Copy and paste", you use the same object elsewhere.
- "Disconnect", to cancel the use of the object.
- "Delete", to remove the object from the project tree.

"Delete" removes all instances of an object in the project.

• Using "Clone", you receive a copy of the object's contents.

#### 2.3.2 Creating an object

#### Overview

If you are installing B.Data for the first time, the project tree contains only one default object: the "System" root.

#### Note

You cannot edit or delete the "System" root.

You may create and configure further objects in the project tree. Rule: Objects are always created as child object of the selected parent object.

#### Procedure

- 1. Select the folder in which you want to create the object.
- Click the object that you want to create in the menu bar, for example, "Data point". The object configuration dialog opens.
- 3. Select the respective object and click "OK".

#### Result

The object is created in the project tree in the selected folder.

Report Data Collection

You can view the object properties of the object, or create new properties for the object.

#### See also

Displaying object relations (Page 31) Object naming conventions (Page 33) Object properties (Page 23)

#### 2.3.3 Object properties

#### 2.3.3.1 Opening properties

#### Requirement

You have created the object.

#### Procedure

- Select the object and click the "Properties" command in the shortcut menu. The object properties dialog opens.
- 2. Edit the name and description of the object as required.
- Enter a value in "Authorization level" to specify the access rights for the object. The authority level is set to "0" by default.
- 4. You can transfer the authority level to all child objects by activating the "Children inherit authority level".

#### Result

The object properties are open.

	Folder - Config	uration	- 🗆 🗙
Name: Description:	Configuration		^
Authority Level:	750	Inherit Author	ity Level to children.
Properties			
Name	Value		New Edit Delete
9		ОК	Cancel

You can assign new properties to the object.

#### B.Data Plant Explorer

2.3 Objects in Plant Explorer

#### See also

Assigning properties (Page 24) Creating an object (Page 22) Object basics (Page 20)

#### 2.3.3.2 Assigning properties

#### Requirement

- You have created the object.
- The object properties are open.

#### Procedure

1. Click "New" in the "Properties" area.

#### The "Property" dialog opens.

	Property - C	REATED ON	- 🗆 ×
Name:	CREATED ON	•	New
Value Type:	Date/Time		Edit
			Delete
Value 06.06.2012	00:00:00		
		ОК	Cancel

2. Select the property in the "Name" area.

The data type of the selected property is automatically entered in "Value type".

- 3. Enter a value.
- 4. Click "OK".

#### Result

The selected property is assigned to the object.

		Folder - Con	figuration	- 🗆 🗙
Name: Description:	Configuration			^
Authority Level:		750	🗌 Inherit Autho	rity Level to children.
Properties				
Name		Value		New
		06.06.2012	200:00:00	Edit Delete
9			ОК	Cancel

You can assign a new property to the object. You can also define custom properties and assign these to the object.

#### See also

Creating an object (Page 22) Opening properties (Page 23) Object basics (Page 20) Defining custom properties (Page 26) B.Data Plant Explorer

2.3 Objects in Plant Explorer

#### 2.3.3.3 Defining custom properties

#### Requirement

- The object properties are open.
- The "Property" dialog is open.

#### Procedure

1. Click "New".

The "Property type" dialog opens.

	Property Type	- 🗆	×
Name:			
Value Type:	Integer		•
	ОК	Cancel	

- 2. Type in a name for the property.
- 3. Select the data type for the property in "Value type".
- 4. Click "OK".

#### Result

You have defined a custom property. You can now assign this new property to the object.

#### See also

Assigning properties (Page 24)

#### 2.3.4 Object management

#### 2.3.4.1 Object management basics

#### Overview

The following B.Data commands are available for managing objects in the project tree:

- Move
- Copy and disconnect
- Clone and delete

#### Moving objects

Use the "Move" command to move an object to a different location.

Example:

- 1. You have created the "e\_gas\_consumption\_1" data point in the "Report Data Collection" folder:
  - Report Data Collection
     e\_gas\_consumption\_1
     Trend Data Collection
- 2. However, you no longer need the "e\_gas\_consumption\_1" data point for evaluation in a report; now you need it for visualization in a trend. Move the data point to the "Trend Data Collection" folder:
  - └── Collection └── Collection └── Collection └── Collection

#### **Reusing objects**

Use the "Copy" command to use an object in another location. Copied objects always have the same name. If you edit the object at one location, any changes will be applied to all other points of application.

Example:

1. You have created the "e\_gas\_consumption\_1" data point for evaluation in a report in the "Report Data Collection" folder:



2. You also need the "e\_gas\_consumption\_1" data point for visualization in a trend. Copy this data point to the "Trend Data Collection" folder:



#### Revoke re-use of objects

To revoke the re-use of an object in one location, use the "Disconnect" command.

Example:

- 1. You are using the "e\_gas\_consumption\_1" data point in the "Report Data Collection" and "Trend Data Collection" folders:
  - Report Data Collection
     Gegas\_consumption\_1
     Trend Data Collection
     Gegas\_consumption\_1
     Gegas\_consumption\_1
- 2. You no longer need the "e\_gas\_consumption\_1" data point for visualization in a trend. Disconnect the data point in the "Trend Data Collection" folder. This data point is deleted in the Trend Data Collection folder. The data point is retained in the "Report Data Collection" folder:

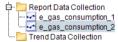
#### Copying objects

You copy an object by using the "Clone" command. Use this command if you want to create several objects with similar properties. Example:

1. You have created the "e\_gas\_consumption\_1" data point for evaluation in a report in the "Report Data Collection" folder:



 For evaluation in a report, you require a further data point for the gas consumption of a different plant. Clone the "e\_gas\_consumption\_1" data point, rename this data point "e\_gas\_consumption\_2" and customize the properties accordingly:



#### **Deleting objects**

Use the "Delete" command to irrevocably delete an object from the project tree.

Example:

1. You are using the "e\_gas\_consumption\_1" data point in both the "Report Data Collection" folder and the "Trend Data Collection" folder:

Report Data Collection
 E-gas\_consumption\_1
 D-Trend Data Collection
 Collection
 D-Gas\_consumption\_1

2. You no longer need the "e\_gas\_consumption\_1" data point. Delete this data point. All instances of the data point in the project tree are deleted irrevocably. You can no longer restore the data point.



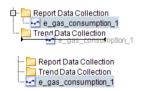
#### 2.3.4.2 Managing objects

#### Requirement

The objects have already been created.

#### Moving or re-using objects

- 1. Right-click the object and drag-and-drop it to the selected position. Observe the position of the guide line:
  - If you place the guide line directly underneath the object, the selected object is copied to the same structure level in the project tree for re-use.



 If you place the guide line to the right of the object, the selected object is copied to the next nested level in the project tree structure, or re-used.



The shortcut menu for moving and re-using is displayed.

🛱 🛅 Report Data Collection 🔄					
🛄 🛃 e_gas_consumption_1					
🔽 Trend Data Collection					
Move here					
Copy here					

2. To move the object, click "Move here".

The object is moved.

3. To re-use the object, click "Copy here".

The object is re-used.

Deleting/copying/canceling the re-use of an object

🖕 🛄 Report Data Collection					
🖳 🛃 e_gas_consumption_1					
Trend Data Collection		Properties			
		Domains			
	Х	Cut			
		Сору			
	Ē	Paste			
	٩	Clone			
		<u>L</u> ock			
	L.	Disconnect			
	×	Delete			
	1	<u>E</u> dit			
		<u>M</u> easurementValues			

1. Click "Delete" in the shortcut menu to delete a selected object.

The object is deleted irrevocably from the project tree.

- You cancel the re-use of a selected object by clicking "Disconnect" in the shortcut menu. The object is no longer used at that location, but remains available for use in other locations.
- 3. Proceed as follows to co copy the object:
  - Select the object and click "Clone" in the shortcut menu.

The object configuration dialog opens.

- Edit the object and then click "OK".

The copied object is created in the project tree.

#### Locking objects

You can lock the objects you created in the project tree of Plant Explorer. This prevents the objects from being moved unintentionally within the project tree.

1. Select the object and click "Lock" in the shortcut menu.

🗄 🚞 Report Data Collection 🔄			
🖳 🛃 e_gas_consumption_1	L		
🛅 Trend Data Collection	<b>P</b>	Properties	
		Domains	
	Ж	Cut	
	•	Сору	
	Ē	Paste	
	٩	Clone	
	-	Lock	
	λ×	Disconnect	
	$\times$	Delete	
	1	<u>E</u> dit	
		<u>M</u> easurement Values	

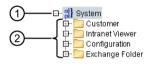
You can no longer move the object and its nested objects in the project tree.

Deactivate the "Lock" command if you want to move a child object in the project tree.
 You can now move the child object. The parent object remains in locked state.

### 2.3.5 Displaying object relations

#### Overview

An object created in B.Data forms a relation to other B.Data objects. The relation between objects in B.Data is termed "parent-child relation":



- ① Parent object: This object can have more than one child object.
- ② Child objects: While each child object can only have one parent object, it can also be the parent object for other child objects.

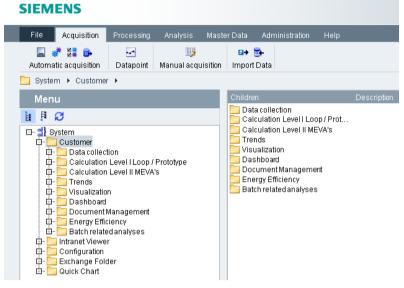
#### Requirement

You have created the object.

#### Procedure

1. To display all child objects that you have created directly under a parent object, select the parent object from the project tree and click the "Father to Child" button.

The child objects are displayed in the display area of Plant Explorer.



2. To display the object under which you have created other objects, select the child object from the project tree and click the "Child to Father" button.

The parent object is displayed in the display area of Plant Explorer.

SIEM	ENS							
File	Acquisition	Processing	Analysis	Maste	r Data	Administration	Help	
		-				3-		
Automa	tic acquisition	Datapoint	Manual acqu	uisition	Import	Data		
🛅 Custo	imer 🕨							
Men	u				Parents			Description
h P	g				🛃 Syst	tem		
	ustomer System							

See also

Creating an object (Page 22)

#### 2.3.6 Object naming conventions

#### Notes on the naming of objects

Observe the following when naming objects:

- Use an unambiguous name.
- Use a maximum of 255 characters.
- Use the following characters:
  - "A" to "Z"
  - "a" to "z"
  - "0" to "9"
  - \_ " "

#### Name prefixes

In order to enable the unambiguous identification of B.Data objects for acquisition and calculation of measured values, the following name prefixes were defined.

Prefix	Object
a_	Derived data point
d_	Data point
e_	Generic data point
k_	Constant
p_	Prototype
I_	Loop
t_	Parameters
m_	Measuring variable

#### Note

When you create an object, the prefix is automatically entered in the name field.

#### Recommendation for naming objects

In order to ensure the uniqueness of the names, create a concept for naming the objects in B.Data before you start to configure your system. Use the following syntax. for example:

Prefix\_FIS\_physical measuring variable\_[plant unit]\_plant

#### 2.3.7 Search for object

#### Overview

The B.Data search function evaluates the following information:

- Object name
- Description of the object
- Object properties
- Object ID

A separate tab with search results is created for each search in the display area of the Plant Explorer. All tabs with search results are deleted when you close the B.Data client.

#### Procedure

- 1. In the project tree of the Plant Explorer, select the folder in which you want to search.
- 2. To limit the search to specific objects, activate one or more object types in the selection menu of the search.

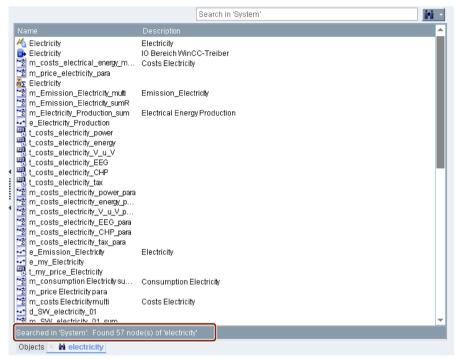
In the following example, the search is limited to reports and measuring variables:

lelp	💄 Welcome Syste	m/Admin!   Active Domain: ≤all>
Production		
Description		Search for all types
		Acquisition
		Datapoint / Matrix / Parameter
		Loop / Prototype
	1	MEVA
	1	Report
		Trend
		User
		Dashboard/Visualization
		Energy Efficiency / Alert
		ERP / Profile / Material
		File / Folder / Task
		General Config
		Extended Search

3. Enter your search term in the search field.

#### 4. Click 🔢.

A tab with the search result is created in the display area.



5. To refine the search result, enter another search term.

The search results are filtered.

6. As soon as you use the <Return> key in the search field, another tab is created for the new search term.

# 2.4 Configuring Quicklinks

#### 2.4.1 Create Quicklinks

#### Overview

Quicklinks are references to objects in B.Data that are used frequently, for example, reports. Quicklinks are available to the user for which you have created the Quicklinks.

You can create Quicklinks for the B.Data Client as well as the B.Data Web.

#### Requirement

You have the "Create Quicklinks" authorization.

#### Procedure

- 1. Open the configuration dialog for the required user.
- 2. Select either the "Quicklinks for Web" or the "Quicklinks for Client" tab.
- 3. Use drag&drop to drag the object from the project tree of the Plant Explorer to the "Add Quicklink using drag&drop" field.

User - MUSTERMANNM	_ 🗆 🗙					
Common Administration Quicklinks for Web Quicklinks for Client						
Quicklinks						
Object	Edit					
	Delete					
	Up Down					
	Down					
Add Quicklink by using Drag & Drop:						
Trend	Add					
ОК	Cancel					

4. Then click "Add".

The Quicklink is displayed in the "Quicklinks" area.

5. If you have created several Quicklinks, specify the sequence with the "Up" and "Down" buttons.

# Result

The Quicklink is displayed in the "Quicklinks" area:

- The object name to which the Quicklink points becomes the title.
- The default icon and background color for this object type is used.

Depending on the used tab, the Quicklink is displayed in B.Data Web or in the Plant Explorer.

SIEMENS					
File Acquisition	Processin	g Analysis	Master Data	Administration	Help
Automatic acquisition			🖙 🗲 Import Data		
Distem ▶ Intrane Menu	t viewer 🕨 in	rena 🕨	Childr		
Quicklinks			En 🖸	ergy_Consumption	
Trend					

#### Note

You can change the order of the Quicklinks in the "Quicklinks" area with drag&drop.

# See also

Edit Quicklinks (Page 38) Configuring Quicklinks (Page 446) Plant Explorer as navigation tool (Page 17) 2.4 Configuring Quicklinks

# 2.4.2 Edit Quicklinks

# Overview

You can change the following properties of a Quicklink with the "Edit Quicklinks" function:

- Name
- Icon
- Color

# Requirement

- You have the "Edit Quicklinks" authorization.
- The Quicklink is created.

# Procedure

1. Right-click the Quicklink in the "Quicklinks" area in the Plant Explorer.

The "Edit Quicklink" dialog box opens.

		Edi	t Quicklink		_ 🗆 🗙
Rename Quicklin	k Report We	b			Delete
loc		Back	ground Color		
	5	ШZE С	8	圜]]	
岱	₽	×		ш <sup>с</sup>	6
© <sub>t</sub>	[]]	圜]]	R	PDF	
_		_	_	ОК	Cancel

2. Edit the Quicklink as required.

# Alternative procedure

You can also edit the Quicklinks in the configuration dialog of the respective user.

# Configuring master data

# 3.1 Configuring data acquisition

# 3.1.1 Creating hardware

#### Overview

If you want to acquire data automatically with B.Data, you must map at least one acquisition component as object of the type "Hardware". An acquisition component is, for example, a PC or a mobile device (PDA). You configure the data acquisition for this hardware in an additional step by means of a wizard.

#### Note

In the B.Data database's example project, under "System > Customer > Data collection > Interfaces / Drivers" there is already a "Hardware" object named "h\_Siemens\_PC" that is completely configured and enabled.

If you do not want to use the preconfigured object, disable the "Active" option. This will release the license that is bound to it.

#### Procedure

- 1. Select the folder in which the hardware is going to be created.
- Click "Add hardware" in the menu bar under "Acquisition > Automatic acquisition". The "Hardware" configuration dialog opens.
- 3. Enter a name and, if necessary, a description.

Recommendation: Also use the prefix "h\_" as unique identification.

4. Assign the PC or the mobile device to the "Hardware" object using the "..." button.

# Note

The name "localhost" is not permitted as computer name.

- 5. Select the "Active" option to use the hardware for data acquisition.
- 6. Activate the type of acquisition component depending on the use:
  - Acquisition
  - Application server

Only necessary if the application server is installed on the acquisition component.

Mobile device

	Hardware	- h_Siemens_PC	- 🗆 ×
Name:	h_Siemens_PC		
Description:			<b>^</b>
Hostname:	WIN81V6	Settings	Active
Address:	10.0.14.1	Jetungs	Acquisition
Guid:			Application Server Mobile Device
	Kernel		
_			
		ОК	Cancel

# Result

The "Hardware" object has been configured.

#### Note

The acquisition ID is entered automatically under "Guid" when you have configured the acquisition component in the B.Data acquisition configuration. The acquisition ID uniquely identifies the connection between the B.Data server and the acquisition component.

#### See also

Configuring mobile devices in B.Data (Page 461) Logging the acquisition component onto the B.Data server (Page 41) Logging the acquisition component onto the B.Data server for the first time (Page 41)

# 3.1.2 Logging the acquisition component onto the B.Data server

# 3.1.2.1 Logging the acquisition component onto the B.Data server for the first time

#### **Overview**

In the B.Data acquisition configuration, you establish the logical connection between the acquisition component and the B.Data server. The B.Data acquisition component is installed together with the "B.Data Acquisition" software component. The acquisition component supports communication via a proxy server.

To set up the connection to the B.Data server, you have the following options available:

• Configuring the connection manually

You can configure the connection to the B.Data server with or without access to the B.Data server. The connection is created when saving the configuration data. If the B.Data server cannot be reached, the configuration is saved locally. Upon restarting the B.Data acquisition configuration, an attempt is made to establish the connection using the saved configuration.

• Setting up a connection using the wizard

Configuration with the wizard requires a connection to the B.Data server: The wizard performs a step by step check of the connection data that have been entered. Details on the connection wizard can be found in section Areas in the B.Data acquisition configuration (Page 48).

Configuration of the connection to the B.Data server with the wizard is described below.

# **Required data**

You need the following data to log the acquisition component in to the B.Data server:

- Address and port of the B.Data server
- B.Data user name and password
- Name of the "Hardware" object in B.Data

The figure below shows the layout of the B.Data acquisition configuration after login:

Status       Server connection         Settings       Serveraddress: BDATA         Wizard       Help         About       Acquisition Service (Kernel)         Status:       © online         Acquisition Service (Kernel)       Status:         Status:       Running         Acquisition Name:       h_Siemens_PC         Acquisition ID:       0 cartc53-5963-4fa0-8f50-061519ec3fb1         Buffer size (MB):       0 / 16172.95         Actual Date/Time OS:       11/5/2014 7.32.12 AM         Configuration status       Status         Server connection configuration:       © configured         Actual acquisition configuration:       Teceived	SIEMENS		B.DATA
Settings       Server connection         Settings       Server address: BDATA         Witzard       Status:online         Help			T3
Witzard       Status:       online         Help       Check Connection         About       Acquisition Service (Kernel)         Status:       Running         Acquisition Name:       h_Siemens_PC         Acquisition ID:       0 cad1c53-5963-4fa0-8f50-061519ec3fb1         Buffer size (MB):       0 / 16172.95         Actual Date/Time OS:       11/5/2014 7.32.12 AM         Configuration status       Status         Server connection configuration:       Configuration configuration:         Acquisition configuration:       received	Status	Server connection	
Witzerd       Check Connection         Help       Check Connection         About       Acquisition Service (Kernel)         Logout       Status:       Running         Acquisition Name:       h_Siemens_PC         Acquisition ID:       0 cad1c53-5963-4fa0-8f5-061519ec3fb1         Buffer size (MB):       0 / 16172.95         Actual Date/Time OS:       11/5/2014 7.32.12 AM         Configuration status       Statu/Restat       Stop         Server connection configuration:       Configuration:       Configuration:	Settings	Serveraddress: BDATA	
Help       Acquisition Service (Kernel)         About       Acquisition Service (Kernel)         Logout       Status:       Running         Acquisition Name:       h_Siemens_PC         Acquisition ID:       0 cad1c53-5963-4fa0-8f5c-061519ec3fb1         Buffer size (MB):       0 / 16172.95         Actual Date/Time OS:       11/5/2014 7.32.12 AM         Statu/Restart       Stop         Server connection configuration:       configured         Actual acquisition configuration:       received	Wizard	Status: online	
Logout       Status:       Running         Acquisition Name:       h_Siemens_PC         Acquisition ID:       0cad1c53-5963-4fa0-8f5c-061519ec3fb1         Buffer size (MB):       0 / 16172.95         Actual Date/Time OS:       11/5/2014 7:32:12 AM         Stort/Restart         Story connection configuration:         Configuration status         Server connection configuration:         configuration:         configuration:	Help		Check Connection
Logout     Acquisition Name: h_Simmes_PC       Acquisition ID:     0cad1c53-5963-4fa0-8f5c-061519ec3fb1       Buffer size (MB):     0 / 16172.95       Actual Date/Time OS:     11/5/2014 7:32.12 AM       Stott/Restort       Stott/Restort <td></td> <td>Acquisition Service (Kernel)</td> <td></td>		Acquisition Service (Kernel)	
Buffer size (MB):       0 / 16172.95         Actual Date/Time OS:       11/5/2014 7:32:12 AM         Start/Restart       Stop         Configuration status       Stor/Restart         Server connection configuration:       configured         Actual acquisition configuration:       received	Logout		
Actual Date/Time OS:       11/5/2014 7:32:12 AM         Start/Restart       Stop         Configuration status       Server connection configuration:       Configured         Actual acquisition configuration:       received       received			
Start/Restart     Stop       Configuration status     Server connection configuration: Configured       Actual acquisition configuration: Configured			
Configuration status Server connection configuration: configured Actual acquisition configuration: received			Stop
Server connection configuration: configured Actual acquisition configuration: received			
Actual acquisition configuration:		Configuration status	
		Actual acquisition configuration: received	Reset
(1) (2)			
S S	(1)	(2)	

1 Navigation area

② Display and configuration area. The content depends on the selection in the navigation area.

# Requirement

- The "B.Data Acquisition" software component is installed on the PC.
- Microsoft Internet Information Service (IIS) is installed on the PC.
- The PC is connected to the B.Data server.
- The "Hardware" object is set up on the B.Data server.
- A user with the "Configure acquisition" authorization is set up on the B.Data server.
- For communication via proxy:
  - A proxy server must be available in the network.
  - The URL and login data must be known.

#### Procedure

- Start the web browser on the acquisition component and enter the following address: http://[computer name]/BDataAcquisition/Login.aspx
- 2. Login using your Windows user data of the acquisition component.

The "Status" page of the B.Data acquisition configuration is displayed. If the acquisition component is not yet logged in to the B.Data server, the "Configure the acquisition" dialog is displayed.

3. Select the "Start connection wizard" option in the "Configure the acquisition" dialog.

- 4. Enter the following connection data:
  - Address and port of the B.Data server
  - B.Data user name and password
  - Name of the "Hardware" object in B.Data
- 5. As needed, select "Configure proxy settings", and enter the following connection data depending on the configuration of the proxy server:
  - Address and port of the proxy server
  - User name and password

#### Note

If you use the "Anonymous" setting, there is no need to enter "Port" and "User name".

6. Save your entries.

#### Result

The "Acquisition ID" is generated and entered for the connection between the acquisition component and the B.Data server.

The figure below shows a correctly configured connection to the B.Data server:

Server connection					
Serveraddress: BDA	TA				
Status:	online				
		Check Connection			
Association Operator (14					
Acquisition Service (Ke	ernel)				
Status:	Running				
Acquisition Name:	h_Siemens_PC				
Acquisition ID:	0cad1c53-5963-4fa0-8f5c-061519ec3fb1				
Buffer size (MB):	0 / 16173.8				
Actual Date/Time OS:	11/5/2014 7:29:08 AM				
	Start/Restart	Stop			
Configuration status					
Server connection configuration: configured					
Actual acquisition configuration: 📕 received					
		Reset			

#### See also

Creating hardware (Page 39) Setting up users (Page 88) Managing the acquisition component (Page 46) Configuring the acquisition component manually (Page 44)

# 3.1.2.2 Configuring the acquisition component manually

# Overview

You can configure the acquisition component with or without a connection to the B.Data server.

# Requirement

- The "B.Data Acquisition" software component is installed on the PC.
- Microsoft Internet Information Service (IIS) is installed on the PC.
- The PC is connected to the B.Data server (optional).
- The "Hardware" object is set up on the B.Data server.
- A user with the "Configure acquisition" authorization is set up on the B.Data server.
- For communication via proxy:
  - A proxy server must be available in the network.
  - The URL and login data must be known.

#### Procedure

- 1. Start the web browser on the acquisition component and enter the following address: http://[computer name]/BDataAcquisition/Login.aspx
- 2. Log in to the acquisition component using your Windows user data.

The "Status" page of the B.Data acquisition configuration is displayed.

If the acquisition component is not yet logged in to the B.Data server, select the "Manually configure connection" option in the "Configure the acquisition" dialog that is displayed.

- 3. Enter the following connection data in the "Settings" area:
  - Address and port of the B.Data server
  - B.Data user name and password
  - Name of the "Hardware" object in B.Data

- 4. As needed, select "Configure proxy settings", and enter the following connection data depending on the configuration of the proxy server:
  - Address and port of the proxy server
  - User name and password

#### Note

If you use the "Anonymous" setting, there is no need to enter "Port" and "User name".

5. Save your entries.

The attempt to connect to the B.Data server is started.

If connection to the B.Data server is not possible, your configuration is saved locally. Upon the next restart of the acquisition component, a connection will be attempted using the saved configuration.

#### Result

The acquisition ID is generated and entered as soon as the B.Data server can be reached. An attempt is made to establish the connection with the specified data upon each restart of the acquisition component. Provision of the acquisition configuration depends on the configured start delay time of the acquisition service.

The figure below shows a correctly configured connection to the B.Data server:

Server connection					
Serveraddress: BDA	TA				
Status: 📃 o	nline				
		Check Connection			
Acquisition Service (Ke	rnel)				
Status:	Running				
Acquisition Name:	h_Siemens_PC				
Acquisition ID:	0cad1c53-5963-4fa0-8f5c-061519ec3fb1				
Buffer size (MB):	0 / 16173.8				
Actual Date/Time OS:	11/5/2014 7:29:08 AM				
	Start/Restart	Stop			
Configuration status					
Server connection cor	Server connection configuration: 📃 configured				
Actual acquisition con	figuration: 🔚 received				
		Reset			

Configuring master data

3.1 Configuring data acquisition

# 3.1.2.3 Managing the acquisition component

#### Overview

You use the B.Data acquisition component for the following tasks:

- Start or stop acquisition service
- Modify or reset the connection data
- Configuring a proxy server for the communication
- Execute the software update for the acquisition component

SIEMENS	B.DATA	
Status Settings Wizard Help	Server connection Serveraddress: BDATA Status: online Check Connection	
About Logout	Acquisition Service (Kernel) Status: Running Acquisition Name: h_Siemens_PC Acquisition ID: 0cad1c53-5963-4fa0-8f5c-061519ec3fb1 Buffer size (MB): 0 / 16172.95 Actual Date/Time OS: 11/5/2014 7:32:12 AM Statr/Restart Stop	
	Configuration status Server connection configuration: configured Actual acquisition configuration: received Reset	-
1	2	

1 Navigation area

② Display and configuration area. The content depends on the selection in the navigation area.

# Requirement

- The B.Data acquisition configuration is displayed in the Web browser.
- The acquisition component is connected to the B.Data server.

# Start or stop acquisition service

- 1. Click "Status" in the navigation area.
- 2. Click the appropriate button.

If the acquisition service is stopped, data is not acquired.

# Changing configuration settings

- 1. Click "Status" in the navigation area.
- 2. If you want to assign the acquisition component to another "Hardware" object, reset the acquisition service.
- 3. If you want to change the user data, stop the acquisition service.
- 4. Click on "Settings" or "Wizard" in the navigation area.
- 5. Enter the connection data.

# Reset configuration settings

- 1. Click "Status" in the navigation area.
- 2. Click the appropriate button.

The configuration settings of the acquisition component are deleted after confirmation. The acquisition component is not acquiring data any longer.

3. Log the acquisition component in to a B.Data server again afterward.

# Configuring a proxy server for the communication

- 1. Click "Status" in the navigation area.
- 2. Click "Configure proxy settings"
- 3. Depending on the configuration of the proxy server, enter the following connection data:
  - Address and port of the proxy server
  - User name and password

#### Note

If you use the "Anonymous" setting, there is no need to enter "Port" and "User name".

# Updating acquisition software

- 1. Click "About" in the navigation area.
- 2. Enter the path and file name of the setup file under "Software update", for example, "C:\Installation\Setup.exe".
- 3. Click "Update".

The acquisition service is stopped and the acquisition software is updated. The acquisition service is started once again when the installation is complete.

#### See also

Logging the acquisition component onto the B.Data server for the first time (Page 41)

# 3.1.2.4 Areas in the B.Data acquisition configuration

# Layout of the B.Data acquisition configuration

The figure below shows the layout of the B.Data acquisition configuration after login:

SIEMENS	B.DATA
Status Settings Wizard Help	T3 Server connection Serveraddress: BDATA Status:  Online Check Connection Acquisition Service (Kernel)
About Logout	Acquisition Service (Kerner)           Status:         Running           Acquisition Name:         h_Siemens_PC           Acquisition ID:         0cad1c53-5963-4fa0-8f5c-061519ec3fb1           Buffer size (MB):         0 / 16172.95           Actual Date/Time OS:         11/5/2014 7:32:12 AM           Start/Restart
	Configuration status Server connection configuration: configured Actual acquisition configuration: received Reset
1	2

- 1 Navigation area
  - Status: Indicates the connection status of the acquisition component.
  - Settings: Displays the current configuration settings.
  - Wizard: Starts the wizard for input of the configuration settings.
  - Help: Opens the documentation on the B.Data acquisition component in PDF format.
  - About: Displays the installed software version. You can update the software version.
  - Logout: Displays the login window of the B.Data acquisition configuration again.
- ② Display and configuration area. The content depends on the selection in the navigation area.

# "Status" area

Serveraddress: BDATA Status:				
	Check Connection			
Acquisition Service (Kernel)				
Status:RunningAcquisition Name:h_Siemens_PCAcquisition ID:0cad1c53-5963-4fa0-8f5c-061519ec3fb1Buffer size (MB):0 / 16173.8Actual Date/Time OS:11/5/2014 7:29:08 AM				
Start/Restart	Stop			
Configuration status Server connection configuration: configured Actual acquisition configuration: received				

The "Status" area of the B.Data acquisition configuration consists of the following areas:

Area	Entry	Description
Server connection	-	-
	Server Address	Displays the name of the B.Data server.
	Status	Displays the status of the connection to the B.Data server.
		The following statuses are possible:
		• Green/online: The acquisition component is connected to the B.Data server.
		• Gray/offline: The acquisition component is not connected to the B.Data server.
Acquisition Service	-	-
(Kernel)	Status	Indicates the acquisition state.
		The following statuses are possible:
		Started: The acquisition has started and is running.
		Stopped: The acquisition is stopped.
	Acquisition Name	Displays the name of the hardware object.
	Acquisition ID	Displays the acquisition ID which uniquely identifies the connection between the B.Data server and the acquisition component.
	Current Date/Time OS	Shows the current date and time of the PC on which the acquisition is running.
Configuration Status	-	-
	Connection Configuration	Shows whether the connection to the B.Data server has already been configured.

Area	Entry	Description
	Current Acquisition Con- figuration	<ul> <li>Displays the status of the current acquisition configuration.</li> <li>The following statuses are possible:</li> <li>Received: The acquisition configuration has been successfully synchronized with the B.Data server.</li> <li>Not Received: The acquisition configuration has not been successfully synchronized with the B.Data server.</li> </ul>

# "Settings" area

Server connection:	
Serveraddress:	BDATA
Port:	4444
Proxyserver:	Configure proxy settings Manual proxy configuration Serveraddress: Port. 80 Use specific credentials User: Password:
User settings:	
User:	System\Admin
Password:	•••••
Acquisition entry:	
Acquisition Name:	h_Siemens_PC
Acquisition ID:	0cad1c53-5963-4fa0-8f5c-061519ec3fb1
	Save

The "Settings" area of the B.Data acquisition configuration consists of the following areas:

Area	Entry	Description
Server	-	-
	Server Address	Displays the name of the B.Data server.
	Port	Displays the port of the B.Data server.
		Displays the status of the connection to the B.Data server.
The following statuses are possible:		The following statuses are possible:
Green/online: The acquisition comp     B.Data server.		• Green/online: The acquisition component is connected to the B.Data server.
		• Gray/offline: The acquisition component is not connected to the B.Data server.

Area	Entry	Description	
Proxy server	Configure proxy settings	Indicates whether a proxy server will be used for the communication.	
		The following statuses are possible:	
		<ul> <li>Use system proxy settings: The proxy server that is configured in the operating system will be used.</li> </ul>	
		Manual proxy configuration: Proxy server is manually configured:	
		Server address and port are required. The type of authorization depends on the proxy server that is used.	
User settings	-	-	
	B.Data user name	B.Data user name	
	Password	Password of the B.Data user (encrypted)	
Acquisition entry	-	-	
	Acquisition Name	Name of the "Hardware" object	
	Acquisition ID	Uniquely identifies the connection between the B.Data server and the acquisition component.	

# "Wizard" area

The "Wizard" guides you through three steps for logging the acquisition component in to the B.Data server. To run the wizard, the acquisition component must be connected to the B.Data server.

Step 1: Choose Server	
Serveraddress:	PI-BDATA-TS-34
Port:	4444
Proxyserver:	Configure proxy settings Manual proxy configuration Serveraddress:
	Port: 80
	Use specific credentials
	User:
	Password:
Status:	offline Check Connection

The area of the wizard in "Step 1" contains the following entries:

Entry	Description
Server Address	B.Data server name
Port	Port number of the B.Data server
Proxy server	Activates configuration of a proxy server.
Status	Displays the status of the connection to the B.Data server.
Test connection	Checks the connection between the B.Data server and the acquisition component. The next step is only displayed when the check is successfully completed.

# Configuring master data

# 3.1 Configuring data acquisition

Step 1: Choose Server	
Serveraddress:	PI-BDATA-TS-34
Port:	4444
Proxyserver:	Configure proxy settings
	Serveraddress: Port: 80
	Use specific credentials
	User: Password:
Status:	online Check Connection
Step 2: Authenticate	
User:	System\Admin
Password:	Login

The area of the wizard in "Step 2" contains the following entries:

Entry	Description
User	B.Data user name
Password	Password of the B.Data user (encrypted)
Login	Registers the user in B.Data. The next step is only displayed when the login is successfully completed.

Step 1: Choose Server		
Serveraddress:	PI-BDATA-TS-34	]
Port:	4444	]
Proxyserver:	Configure proxy settings  Manual proxy configuration Serveraddress: Port: 80 Use specific credentials User: Password:	
Status:	online	Check Connection
Step 2: Authenticate		
User:	System\Admin	
Password:	•••••	Login
Step 3: Choose Acquisition entry	/	
Choose Acquisition entry:	<ul> <li>Connect new acquisition</li> <li>C replace existing acquisition</li> <li>[h_Siemens_PC</li> </ul>	Save

Entry	Description
Connecting new acquisition	Shows only the "Hardware" type objects configured in B.Data under "Select acquisition" that have not yet been connected to an acquisition component.
Replace existing acquisition Shows all the "Hardware" type objects configured in B.Data under "Select acquisi	
Select acquisition	Assigns the acquisition component to the "Hardware" type object configured in B.Data.
	If you have enabled the "Replace existing acquisition" option, the existing assignment to this object is deleted.
Save	Generates the acquisition ID, which uniquely identifies the connection between the B.Data server and the acquisition component.

The area of the wizard in "Step 3" contains the following entries:

# "About" area

B.Data Acquisition Configuration			
Systemversion:	600.0.703.2		
Software Update			
			Run

The "About" area of the B.Data acquisition configuration consists of the following areas:

Entry	Description
System version	Shows the software version installed on the acquisition component.
Software update	Path and file name of the Setup file for updating the software, for example, "\\UpdateServer\BData\Setup.exe".
Execute	Starts the software update. The acquisition component is restarted following the update.

# 3.1.3 Configuring interfaces for data acquisition

# 3.1.3.1 Interface management basics

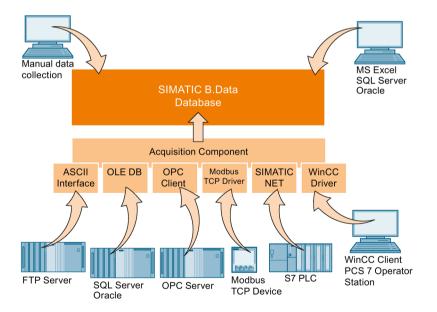
The data you need for energy management often exist in different formats and systems:

- Data from analog and digital measuring devices
- Data from other production sites
- Archived consumption data from the previous year

In addition to the standardized interfaces to Siemens products such as WinCC or PCS 7, B.Data supports conventional standards so that you can acquire data from different sources:

- Acquisition of energy and operational data from the field level via OPC or Modbus.
- Acquisition of data from S7 controllers via SIMATIC NET.
- Acquisition of data from measurement value archives via OPC.
- Acquisition of data from maintenance, production planning and ERP system databases.
- Import of ASCII data from the company wide file system, such as CSV or XML.
- Manual input of the measured and counter values.

Depending on the interface used, the data is either imported directly into the B.Data database, or pre-processed in the acquisition component:



# 3.1.3.2 Acquisition wizard for interface configuration

# Overview

Use the "Acquisition wizard" to configure the interface for data acquisition from a selected data source. B.Data supports the following interfaces for data acquisition:

- S7
- WinCC/PCS 7
- Modbus
- OPC DA, OPC HDA, OPC UA
- OLE DB
- FTP, sFTP
- Simulation

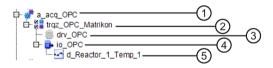
#### Note

#### SAT interface

The SAT interface is only available upon request. Contact Siemens Customer Support.

# Acquisition structure in the Plant Explorer

The acquisition wizard creates the following acquisition structure under the "Hardware" object:



# 1 Process:

Represents the data acquisition for an interface, e.g., "WinCC" or "Modbus". Includes all configuration data of the interface.

②, ③ Driver source and driver type:

Defines the interface to be used for data acquisition.

④ IO buffer:

Defines from where the data is read, for example, a device, a file or a logical group for a time interval for reading.

5 Datapoints that you created or selected during the configuration.

#### Configuring master data

# 3.1 Configuring data acquisition

#### Action overview

The acquisition wizard guides you through the configuration of the interface. The following configuration steps are basically required for all interfaces after starting the acquisition wizard:

- 1. Define the channel name
- 2. Select the device configuration
- 3. Configure the connection
- 4. Define the datapoints
- 5. Define the data transmission

After this step, you can create another link or create the acquisition structure.

6. Create the acquisition structure

#### Example

The following example shows how to acquire data from a WinCC log via the "WinCC / PCS 7" interface using the acquisition wizard.

- Select the "Wizard..." command from the shortcut menu of the "Hardware" object. The "Acquisition Wizard" dialog opens.
- 2. Select the interface.

<i>p</i>	Acquisition Wizard
SIEMENS B.DATA	Acquisition Wizard  Database  OLE DB SIMATIC  WinCC/PCS7  S7 Foreign Driver Modbus Data Import FTP, sFTP Interface standards OPC DA OPC CA OPC CA OPC CA Simulation
	< Back Next > Cancel

3. Enter the channel name and select the initial state for the acquisition:

P	WinCC_PCS7 (WinCC) - I	Define channel Name	×
Enter name for communica	ation channel: WinCC		
Use default location from	n acquisition hardware		
◯ Select location for this sp	ecific channel		
	Germany	*	
Initial State:	ACTIVE		
	Step 1 out of 5	< Back Next >	Cancel
	Step 1 out of 5	< Back Next >	Cancel

4. Select the WinCC log from where the data is to be acquired:

P	WinCC_PCS7 (WinCC) - Browse WinCC	<
Archive		
	OK     Cancel       Step 2 out of 5     < Back     Next >     Cancel	

5. Select the logging tag with the values to be acquired.

The corresponding datapoint is created automatically.

<i>P</i>	WinCC_PCS7 (WinCC) - Creat	te data points	×
ConsumpCurrFurnace1_15Min HMI_MixerConsumption ConsumpCurrFurnace1_15Min	WinCC_PCS7 (WinCC) - Creat		Edit
	Step 3 out of 5	< Back Next >	Cancel

6. Define the transfer interval:

P	WinCC_PCS7 (WinCC) - Select tra	nsmission interval	×
Data transmission interval: Retrieve data since:	15 min 26.03 2014 17:45:06 Override TSP settings		
	Step 4 out of 5	< Back	Next > Cancel

Interim result: The connection is established to the WinCC log:

ρ	WinCC	WinCC_PCS7 (WinCC) - Communication channel overview			
Channel overview for th	is unit:				
WinCC ▶ ConsumpCurrFurn	ace1_15Min		New	Edit	Delete
		Step 5 out of 5	< Back	Finish	Cancel

7. Define an additional connection to another WinCC log with "New".

- or -

Create the acquisition structure with "Finish".

The following figure shows the acquisition structure created with the acquisition wizard:



# 3.1.3.3 Configuring data acquisition via the "S7" interface

# Overview

You use the "S7" interface to retrieve data from an S7 controller with the help of SIMATIC NET. You address the memory areas of the S7 controller absolutely.

# Requirement

- The "Hardware" object has been created.
- The acquisition component is logged on to the B.Data server and switched on.
- SIMATIC NET is installed on the acquisition component and licensed.
- An understanding of addressing and communication with S7 controllers.

# Starting the wizard

1. In the project tree of the Plant Explorer, select the "Hardware" object and select the "Wizard..." command from the shortcut menu.

The "Acquisition Wizard" dialog opens.

2. Click the "S7" entry.

# Define the channel name

- 1. Enter a meaningful channel name, for example, "Acq\_S7\_ColorMixing\_Consumption".
- 2. Select the country whose time zone is used for the time stamp of the acquired values.
- 3. Specify the status of the data acquisition on the acquisition component:
  - ACTIVE: Data are acquired.
  - NOT ACTIVE: Data are not acquired.

# Select the device configuration

1. Activate "Create user-defined configuration".

# Configure the connection

- 1. Enter a meaningful channel name for the IO buffer under "Connection name", for example, "IO\_S7-CleaningStation".
- 2. Enter the following data under "Acquisition":
  - Number of the CPU slot.
  - Connection Resource
- 3. Enter the connection data to the S7 controller under "Partner":
  - Used interface
  - Address of the S7 controller depends on the selected interface
  - Numbers of the rack and the slot
  - Connection Resource

# Define the data points

- 1. Click "New definition" under "New address".
  - The "Data Point" dialog opens.
- 2. Enter a meaningful name for the data point.
- 3. Under "Object" select the source from which you want to retrieve the values:
  - DB: Data block
  - I: Input
  - M: Bit memory
- Enter the "Data type", "Address" and "Bit no." depending on the "Object". The "Number" is only relevant for "DB" and identifies the data block.
- 5. Activate the data point type under "New address".

# Define the data transmission

1. Select the interval in which the acquisition component acquires the values.

# Result

The acquisition structure for the "S7" interface is created below the "Hardware" object. Data acquisition starts once you have restarted the B.Data kernel on the acquisition component.

You can change the acquisition structure at any time with the wizard or add additional connections.

# 3.1.3.4 Configuring data acquisition via the "WinCC/PCS7" interface

# Overview

You use the "WinCC / PCS 7" interface to retrieve values from a process value log or compressed log. You need a separate channel for each log.

# Requirement

- The "Hardware" object has been created.
- The acquisition component is logged in to the B.Data server.
- A WinCC client or WinCC server is installed on the acquisition component.
- A WinCC project is activated.

# Starting the wizard

1. In the project tree of the Plant Explorer, select the "Hardware" object and select the "Wizard..." command from the shortcut menu.

The "Acquisition Wizard" dialog opens.

2. Click on the "WinCC / PCS 7" entry.

# Define the channel name

- 1. Enter a meaningful channel name, for example, "Acq\_WinCC\_ProcessValues".
- 2. Select the country whose time zone is used for the time stamp of the acquired values.
- 3. Specify the status of the data acquisition on the acquisition component:
  - ACTIVE: Data are acquired.
  - NOT ACTIVE: Data are not acquired.

# **Browse WinCC**

1. Select the log whose data you want to retrieve.

# Define the datapoints

1. Activate the logging tags whose values you want to retrieve.

# Define the data transmission

- 1. Select the interval in which the acquisition component acquires the values.
- 2. To change the start of the acquisition period, activate "Overwrite TSP settings".

Archive data from the defined start of the acquisition period until the interface was started are transmitted in their entirety. Current values since starting the interface will be cyclically transmitted depending on the selected interval.

# Result

The acquisition structure for the "WinCC / PCS 7" interface is created below the "Hardware" object. Data acquisition starts once you have restarted the B.Data kernel on the acquisition component.

You can change the acquisition structure at any time with the wizard or add additional connections.

# 3.1.3.5 Configuring data acquisition via the "Modbus" interface

#### Overview

You use the "Modbus" interface to retrieve data from measuring devices with Modbus support and Ethernet interface, for example, SENTRON PAC measuring devices. The "Modbus" interface supports the following modes:

- Modbus TCP
- Modbus RTU over TCP

All data points acquired by the SENTRON PAC 3200 / 4200 measuring devices are preconfigured in B.Data. You define the addresses of the parameters for all other measuring devices using the associated operating instructions.

# Requirement

- The "Hardware" object has been created.
- The acquisition component is logged on to the B.Data server and switched on.
- TCP/IP connection data of the measuring device are available.
- Operating instructions of the measuring device are available<sup>1</sup>.
- An understanding of the Modbus protocol<sup>1</sup>.
- <sup>1</sup>: Only required for manual configuration of a measuring device.

# Starting the wizard

1. In the project tree of the Plant Explorer, select the "Hardware" object and select the "Wizard..." command from the shortcut menu.

The "Acquisition Wizard" dialog opens.

2. Click the "Modbus" entry.

# Define the channel name

- 1. Enter a meaningful channel name, for example, "Acq\_Modbus".
- 2. Select the country whose time zone is used for the time stamp of the acquired values.
- 3. Specify the status of the data acquisition on the acquisition component:
  - ACTIVE: Data are acquired.
  - NOT ACTIVE: Data are not acquired.

# Select the device configuration

- 1. If you acquire data from a SENTRON PAC 3200 / 4200, activate "Select device type from database".
- 2. If you want to acquire data from any measuring device, activate "Create user-defined configuration".

# Configure the connection

- 1. Enter a meaningful channel name for the IO buffer under "Device name", for example, "IO\_CleaningStation".
- 2. Select the Modbus mode.

The default port is entered. You can adapt the port number for specific devices.

- 3. Enter the TCP/IP connection data of the measuring device.
- 4. If the measuring device is connected with the acquisition component, check if it is available with "Test connection", if necessary.

The Modbus protocol is used to establish the connection.

# Define the data points

- 1. If you acquire data from a SENTRON PAC 3200 / 4200:
  - Activate the required parameters.

The data point names are made up of the "Device name" and the "Parameter".

- 2. If you are creating a user-defined configuration:
  - Click "New definition" under "New address".
    - The "Data Point" dialog opens.
  - Enter a meaningful name for the data point.
  - Enter the parameter addresses using the operating instructions of the measuring device.

#### Note

The word sequence for 32-bit values and the byte sequence for 16-bit values are not clearly specified in the Modbus specification. Device manufacturers often use the "Big Endian" coding for 32-bit values. This coding is therefore the default in data point configuration.

Activate the data point type under "New address".

# Define the data transmission

1. Select the interval in which the acquisition component acquires the values.

# Result

The acquisition structure for the "Modbus" interface is created below the "Hardware" object. Data acquisition starts once you have restarted the B.Data kernel on the acquisition component.

You can change the acquisition structure at any time with the wizard or add additional connections.

# 3.1.3.6 Configuring data acquisition via the "OPC-DA / OPC-HDA" interface

#### Overview

You use the "OPC" interface to retrieve the data provided by an OPC server. The "OPC" interface supports the OPC specifications "OPC-DA" and "OPC-HDA" as well as the following data types:

- Integer
- Float
- Boolean

The "OPC" interface converts the Boolean values "True" and "False" to "1" and "0".

#### Note

You can select the values for the datapoints directly under the following prerequisites:

- OPC server is installed on the acquisition component.
- OPC server supports reading of OPC items.

#### Note

#### OPC server is not installed on the acquisition component

If possible, use "OPC TCP Tunnelling" software to establish the connection to the OPC server. Accessing an external OPC server via DCOM is not supported for security reasons.

# Requirement

- The "Hardware" object has been created.
- The acquisition component is logged in to the B.Data server and switched on.
- OPC server and / or OPC client are installed on the acquisition component.
- An understanding of addressing and communication with OPC.

# Starting the wizard

1. In the project tree of the Plant Explorer, select the "Hardware" object and select the "Wizard..." command from the shortcut menu.

The "Acquisition Wizard" dialog opens.

2. Click the "OPC-DA" or "OPC-HDA" entry.

# Define the channel name

- 1. Enter a meaningful channel name, for example, "Acq\_OPC-DA".
- 2. Select the country whose time zone is used for the time stamp of the acquired values.
- 3. Specify the status of the data acquisition on the acquisition component:
  - ACTIVE: Data are acquired.
  - NOT ACTIVE: Data are not acquired.

# Select the device configuration

1. Activate "Create user-defined configuration".

# Configure the connection

- 1. Enter a meaningful channel name for the IO buffer under "Group name", for example, "IO\_OPC-DA".
- 2. Select the OPC server under "OPC-DA datapoints" or "OPC-HDA datapoints.
- 3. If you have selected "OPC-HDA", select the "OPC-HDA aggregate type", if necessary.

The acquired values are compressed accordingly, for example, the mean of the reading interval is formed.

# Define the datapoints

- 1. If the OPC server supports browsing:
  - Activate the required datapoints.

The datapoint names are made up of the "Group name" and the "Datapoint".

- 2. If you are creating a user-defined configuration:
  - Click "New definition" under "New address".

The "Datapoint" dialog opens.

- Enter a meaningful name for the datapoint.
- Enter the identification of the OPC datapoint under "Datapoint ID".
- Activate the datapoint type under "New address".

# Define the data transmission

- 1. Select the interval in which the acquisition component acquires the values.
- Only for OPC-HDA: To change the start of the acquisition period, activate "Overwrite TSP settings".

Archive data from the defined start of the acquisition period until the interface was started are transmitted in their entirety. Current values since starting the interface will be cyclically transmitted depending on the selected interval.

#### Result

The acquisition structure for the "OPC" interface is created below the "Hardware" object. Data acquisition starts once you have restarted the B.Data kernel on the acquisition component.

You can change the acquisition structure at any time with the wizard or add additional connections.

# 3.1.3.7 Data acquisition via the OPC UA interface

#### **Overview**

"OPC Unified Architecture" is a specification for the transmission of process values and archive data. Using the OPC UA interface, you read data from a server that supports the "OPC UA" interface.

# Security policy

The OPC UA server uses the TCP/IP protocol for data exchange. For authorization, certificates are exchanged between server and client. In addition, you can encrypt the data traffic.

#### Note

When configuring the OPC UA server, activate at least one "Security policy" and its associated "Security mode". Otherwise the OPC UA server and the clients will communicate insecurely.

# Requirement

- The "Hardware" object has been created.
- The acquisition component is logged in to the B.Data server and switched on.
- An OPC UA server is installed on the acquisition component.
- The Discovery server for OPC UA is enabled as a windows service, and the URL is known.
- Good knowledge of addressing and communication with OPC UA, and of authorization using security certificates.
- The certificate exchange is provided for at the time that the interface is configured.

# Starting the wizard

1. In the project tree of the Plant Explorer, select the "Hardware" object and select the "Wizard..." command from the shortcut menu.

The "Acquisition Wizard" dialog opens.

2. Click on the "OLE UA" entry.

# Define the channel name

- 1. Enter a meaningful channel name, for example, "Acq\_OPC-UA".
- 2. Select the country whose time zone is used for the time stamp of the acquired values.
- 3. Specify the status of the data acquisition on the acquisition component:
  - ACTIVE: Data are acquired.
  - NOT ACTIVE: Data are not acquired.

# Configure the connection

- 1. Enter a meaningful group name for the IO buffer, for example, "IO\_OPC-UA".
- 2. Under the "Search address", enter the URL of the OPC UA Discovery Server.
- 3. Click "Discover".

All available OPC UA servers will be listed under "Import datapoints".

4. Select the desired OPC UA server and click on "Connect".

If the OPC UA server demands authorization, the "Server configuration" dialog will be opened.

- Depending on the OPC UA server, either enter "User name / Password" or the "Token".
- 5. If you have selected "OPC UA HDA access", select the aggregation type if necessary.

The acquired values are compressed accordingly, for example, the arithmetic mean of the reading interval is formed.

# Define the datapoints

The "Browse access points" dialog indicates the datapoints that are available on the OPC UA server.

• Activate the required datapoints.

The datapoint names are made up of the "Group name" and the "Datapoint".

# Define the data transmission

- 1. Select the interval in which the acquisition component acquires the values.
- 2. If you have enabled "OPC UA HDA", you can change the start of the acquisition period. For this, select "Overwrite TSP settings".

Archive data from the defined start of the acquisition period until the interface was started are transmitted in their entirety. Current values since starting the interface will be cyclically transmitted depending on the selected interval.

# Result

The acquisition structure for the "OPC UA" interface is created below the "Hardware" object. Data acquisition starts once you have restarted the B.Data kernel on the acquisition component.

You can change the acquisition structure at any time with the wizard or add additional connections.

# 3.1.3.8 Configuring data acquisition via the "OLE-DB" interface

# Overview

The "OLE DB" interface allows access to Excel tables as well as complex databases such as SQL Server or Oracle. You have to install the OLE-DB providers required for access separately, if it has not been installed with the Windows operating system.

# Requirement

- The "Hardware" object has been created.
- The acquisition component is logged in to the B.Data server and switched on.
- The OLE-DB data source can be accessed from the acquisition component.
- An understanding of OLE-DB.

# Starting the wizard

1. In the project tree of the Plant Explorer, select the "Hardware" object and select the "Wizard..." command from the shortcut menu.

The "Acquisition Wizard" dialog opens.

2. Click on the "OLE-DB" entry.

# Define the channel name

- 1. Enter a meaningful channel name, for example, "Acq\_OLE-DB".
- 2. Select the country whose time zone is used for the time stamp of the acquired values.
- 3. Specify the status of the data acquisition on the acquisition component:
  - ACTIVE: Data are acquired.
  - NOT ACTIVE: Data are not acquired.

# Select the device configuration

1. Activate "Create user-defined configuration".

# Configure the connection

- 1. Select the "OLE-DB Provider".
- 2. Enter the "Connection String".

Additional information on the Connection String is available on the Internet under "http://msdn.microsoft.com/de-de/library/ms254500(v=vs.110).aspx".

3. Click on "Test connection".

# Server connection

- 1. Enter a meaningful channel name for the IO buffer under "Interface name", for example, "IO\_OLEDB".
- 2. Select the table.
- 3. Then select the columns which contain the data acquisition information:
  - Address of the datapoint that is to be acquired.
  - Acquired measured value
  - Time stamp of the measurement acquisition
  - Measurement acquisition state (optional)
- 4. If necessary, enter those values under "Status mapping" which are to be recognized as valid in connection with the status selection.

If you enter the value "0" under "Status mapping", for example, the values with status "0" are recognized as valid. Separate multiple entries with commas.

# Define the datapoints

1. Click "New definition" under "New address".

The "Datapoint" dialog opens.

- 2. Enter a meaningful name for the datapoint.
- 3. Enter the name of the datapoint from the table under "Datapoint ID".
- 4. Activate the datapoint type under "New address".

# Define the data transmission

- 1. Select the interval in which the acquisition component acquires the values.
- 2. To change the start of the acquisition period, activate "Overwrite TSP settings".

Archive data from the defined start of the acquisition period until the interface was started are transmitted in their entirety. Current values since starting the interface will be cyclically transmitted depending on the selected interval.

3.1 Configuring data acquisition

## Result

The acquisition structure for the "OLE-DB" interface is created below the "Hardware" object. Data acquisition starts once you have restarted the B.Data kernel on the acquisition component.

You can change the acquisition structure at any time with the wizard or add additional connections.

3.1 Configuring data acquisition

## 3.1.3.9 Configuring data acquisition via the "FTP" interface

## Overview

You use the "FTP" interface to retrieve data from ASCII files. The "FTP\_Import\_Task" task is configured in the Windows Task Scheduler to transfer ASCII files from the FTP directory to the B.Data acquisition component. This task is started automatically with the B.Data function, "HotFolder".

After successful data transfer, the files are moved from the FTP directory to a directory under "..\BDATA\mcl\...". This means the user who runs the "Hotfolder Manager" service must have write access to the FTP directory.

## Requirement

- The "Hardware" object has been created.
- The acquisition component is logged in to the B.Data server.
- The FTP server is available.
- Connection data for the FTP server are available.

## Starting the wizard

1. In the project tree of the Plant Explorer, select the "Hardware" object and select the "Wizard..." command from the shortcut menu.

The "Acquisition Wizard" dialog opens.

2. Click the "FTP, sFTP" entry.

## Define the channel name

- 1. Enter a meaningful channel name, for example, "Acq\_FTP".
- 2. Select the country whose time zone is used for the time stamp of the acquired values.
- 3. Specify the status of the data acquisition on the acquisition component:
  - ACTIVE: Data are acquired.
  - NOT ACTIVE: Data are not acquired.
- 4. If the FTP server supports "sFTP", activate "Secure connection".

## Select the device configuration

1. Activate "Create user-defined configuration".

## Configure the connection

- 1. Enter a meaningful channel name for the IO buffer under "Group name", for example, "FTP\_S7-CleaningStation".
- 2. Enter the connection data for the FTP server, for example "ftp:\\[Hostname[:Port]]\[FTP directory]".

The port number does not have to be specified. If you do not specify a port number, "21" is used by default.

The "FTP directory" is the directory in which the ASCII data are stored.

- 3. For secure connections, you must enter the user name and password.
- 4. Select the format in which the data exist in the ASCII files.

## Define the datapoints

1. Click "New definition" under "New address".

The "Datapoint" dialog opens.

- 2. Enter a meaningful name for the datapoint.
- 3. Enter the name under "Datapoint ID" which uniquely identifies the datapoint in the ASCII file.
- 4. Activate the datapoint type under "New address".

## Define the data transmission

1. Select the interval in which the acquisition component acquires the values.

## Result

The acquisition structure for the "FTP" interface is created below the "Hardware" object. Data acquisition starts once you have restarted the B.Data kernel on the acquisition component.

You can change the acquisition structure at any time with the wizard or add additional connections.

3.1 Configuring data acquisition

## 3.1.3.10 Configuring data acquisition via the "Simulation" interface

## Overview

You use the "Simulation" interface to simulate data acquisition.

#### Requirement

- The "Hardware" object has been created.
- The acquisition component is logged on to the B.Data server and switched on.

## Starting the wizard

1. In the project tree of the Plant Explorer, select the "Hardware" object and select the "Wizard..." command from the shortcut menu.

The "Acquisition Wizard" dialog opens.

2. Click the "Simulation" entry.

## Define the channel name

- 1. Enter a meaningful channel name, for example, "Acq\_Simulation".
- 2. Select the country whose time zone is used for the time stamp of the acquired values.
- 3. Specify the status of the data acquisition on the acquisition component:
  - ACTIVE: Data are acquired.
  - NOT ACTIVE: Data are not acquired.

## Select the device configuration

1. Activate "Create user-defined configuration".

## Configure the connection

1. Enter a meaningful channel name for the IO buffer under "Group name", for example, "IO\_Simulation".

## Define the data transmission

1. Select the interval in which the acquisition component acquires the values.

#### Result

The acquisition structure for the "Simulation" interface is created below the "Hardware" object.

You can edit the acquisition structure at any time with the wizard.

# 3.1.4 Advanced configuration

## Overview

The interface configuration of objects of the "Hardware", "Driver Source" or "IO Buffer" type is saved to an INI file. If you are an administrator and want to adjust the interface configuration of an object, use the integrated editor in B.Data. The editor lists all interfaces that are available for the object, including the corresponding values.

You can open the INI file in the following cases:

- You can always open the INI file of the "Hardware" type object.
- You can open the INI file of the "Driver Source" type object if one of the following two interfaces is configured: "WinCC" or "OPC".
- You can open the INI file of the "IO Buffer" type object if this object contains data.

#### Note

Changes to the INI file may lead to unpredictable system behavior. Edit the INI file **only** in exceptional situations. Always contact Customer Support beforehand.

## Requirement

The object from one of the following types is created:

- "Hardware"
- "Driver Source"
- "IO Buffer"

## 3.1 Configuring data acquisition

## Procedure

1. Select the "Open INI file" command from the shortcut menu of the "Hardware", "Driver Source" or "IO Buffer" type object.

The editor for editing the INI file opens.

)		INI-File Editor		- 🗆 ×
Sections	Variables Property	Value	Filter: Filter va Comment	riables
FTPNurse FTPTrace Nurse Online OPCDriverSource581 RPC Trace	A) Offline     FTPNurse     FTPTrace     D- NUrse     NUrse     Online     OPCDriverSource581     D- RPC     Trace	0		
			ОК	Cancel

- 2. Select the relevant section.
- 3. Double-click the value you want to change in the "Tags" section.
- 4. Edit the value and close the editor.

## Result

You have modified the interface configuration. Restart the Kernel service to activate your changes to the interface configuration.

## See also

Creating hardware (Page 39)

# 3.1.5 Starting the kernel service

## Overview

The kernel service acquires measured values cyclically and transmits them to the application server. The kernel service is automatically installed with the B.Data acquisition component.

#### Note

If you do not configure the kernel service properly, it prevents the automatic transfer of measured values to the application server.

You need to restart the kernel service whenever you modify the interface configuration of the acquisition component.

## Requirement

- The "Hardware" object has been created.
- Interfaces are configured.

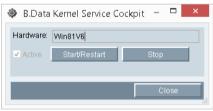
## Procedure

1. Double-click the "Hardware" object in the project tree of the Plant Explorer.

The "Hardware" dialog opens.

2. Click "Kernel".

The "B.Data Kernel Service Cockpit" dialog opens. The status of the kernel service is displayed:



ď	Active
	Stopped
	Undefined status

3. Click "Start/Restart".

3.1 Configuring data acquisition

## Result

Data acquisition is started or continued via the interfaces configured on the acquisition component.

## Alternative procedure

You can also restart the kernel service for an acquisition component from the Service Cockpit.

# 3.2 Create printer and directory

## 3.2.1 Fundamentals of creating printer and directory

In B.Data you can automatically print reports, send them by e-mail or save them to a directory.

To automatically print reports, send them by e-mail or save them to a directory, follow these steps:

- 1. Create a printer or a directory in the selected hardware.
- 2. Create a user with an e-mail address.
- 3. Copy the printer, the directory and/or the user in the query type of the required report.
- 4. Activate the "Print automatically" and/or "Mail/save automatically" options in the query type of the selected report.
- 5. Run the Windows service "B.Data Report Server".

Restart the Windows service "B.Data Report Server" after having made changes.

## See also

Creating a printer (Page 82) Creating a folder (Page 84) Configuring the query type for a report (Page 195) Setting up users (Page 88) 3.2 Create printer and directory

## 3.2.2 Creating a printer

#### Overview

Create a printer in B.Data to enable automatic printing of report results.

#### Requirement

- The printer is connected to the application server.
- The hardware is configured in B.Data .
- The "Print automatically" option is activated in the query type of the report.
- The Windows service "B.Data Report Server" is started.

#### Procedure

- 1. Select the hardware folder in which you want to create the printer.
- Click the "Insert Printer" button in the menu bar under "Master Data > Output". The "Printer" dialog opens.
- 3. Enter a unique name and an optional description for the printer.
- 4. Enter the printer name in the "Printer name" field, including the port.
- 5. To determine the printer port, open the Excel file "Printers V2.0.xls" under "Options\Features\Tools" on the SIMATIC B.Data product DVD.

Separate the printer name with the "#" separator to enable automatic printing of reports and trends. The separator is inserted automatically.

x	] <b>⊟ 5</b> - ∂- ∓	Printers V2.0.xlsx - Excel			
F	ILE HOME INSERT	PAGE LAYOUT FORMULAS	DATA		
A	20	• : × ✓ fx			
	Α	В	С		
1	printer Name for b.data	\\vies1ga\ADDR8TVC# auf Ne07:			
2	name of the printer	\\vies1ga\ADDR8TVC			
3	port: Ne07:				
4					
5			L		
6	press button to	o display current printer			
7					
8					
9	press buttor	to display all printers			
10	-				
11					
12					
13					
14	separator	#			
15					

6. Enter the date and time as of which the printer will be valid.

	Printer - Printer 🛛 🗕 🗆 🗙	
Name:	Printer	]
Description:	^	
	~	
Printer Name:	\\Server\Printer	
Valid since:	01.01.2012 00:00:00 🔹	
<b>9</b>	OK Cancel	Ì
		1

7. Confirm the configuration with "OK".

#### Result

You have successfully created the printer. To use it for printing reports, copy and paste the printer under the query type of the report.

## See also

Creating hardware (Page 39) Fundamentals of creating printer and directory (Page 81) Configuring the query type for a report (Page 195) Object naming conventions (Page 33) 3.2 Create printer and directory

## 3.2.3 Creating a folder

#### Overview

To enable the automatic saving of report results to a folder on the PC, create this folder in B.Data .

#### Requirement

- The folder is available on the PC.
- The "Hardware" object has been created in B.Data .
- The "Mail/save automatically" option is activated in the query type of the report.
- The Windows service "B.Data Report Server" is started.

## Procedure

- 1. Select the hardware folder in which you want to create the directory.
- Click the "Insert Directory" button in the menu bar under "Master Data > Output". The "Directory" dialog opens.
- 3. Enter a unique name and an optional description for the directory.
- 4. Enter the selected directory in the "Path" field.

Use the UNL notation to specify the directory to prevent the network drives from being mapped on the application server.

5. Enter the date and time as of which the directory will be valid.

👤 Direc	tory - local archive directory 🛛 – 🗖 🗙
Name:	local archive directory
Description:	<u></u>
Path:	C:\Temp Browse
Valid since:	01.01.2012 00:00:00
9	OK Cancel

6. Confirm the configuration with "OK".

#### Result

You have successfully created the directory. To save the report results in this directory, copy and paste the directory to the query type of the report.

3.2 Create printer and directory

## See also

Fundamentals of creating printer and directory (Page 81) Creating hardware (Page 39)

Configuring the query type for a report (Page 195)

Object naming conventions (Page 33)

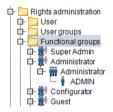
# 3.3 Configuring authorizations

## 3.3.1 Basic information on authorizations

#### Overview

The B.Data authorization concept is basically split into two parts. First you can restrict the viewing of objects based on the authority level and domain membership settings. Second you can restrict functions such as the calculation of reports.

Each user is assigned to one or several user groups, which are assigned to one or several user groups. The functional groups determine the user's functional permissions, e.g. for starting reports or editing measured values. The most important functional groups are stored in the system. The definition of functional rights is split into two sections. Firstly, the authorizations for functional groups are stored in tables. Secondly, folders that reflect authorizations have been assigned and are used in Plant Explorer. The following example demonstrates this setup for the functional group of administrators.



The user receives an authority level by means of the functional group. All objects in B.Data are assigned an authority level.

Example: An object is assigned authority level 750. The user is assigned authority level 500, based on functional rights. As the user's authority level is lower than that of the object, the object and its nested objects are hidden to this user.

Each user group may be assigned to one or several domains. A domain in this context represents an organization unit. Likewise, all objects are assigned to one or several domains. If the user group corresponds to the object domain, the object is visible to the user.

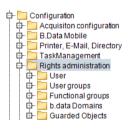
Exchange folders are provided that can be used to exchange objects such as reports or datapoints between the domains.

This section provides instructions related to the following actions:

- Selecting folders
- Creating users
- Creating a user group
- Creating a functional group
- Assigning authorizations
- Changing passwords
- Configuring authority levels
- Views of different domains

- Configuring domains
- Authorization in B.Data Web

You configure the authorization concept in the project tree. The corresponding objects are available in the project tree structure under "Configuration > Users, Groups, User rights administration":



## See also

Setting up users (Page 88) Configuring authorizations (Page 93) Navigation in B.Data Web (Page 418) Managing users (Page 90)

## 3.3.2 Setting up users

#### Introduction

A user is required in B.Data, in order for a user to be able to login to B.Data, B.Data Web or B.Data Mobile. Even if a user only receives emails from B.Data, he/she requires user access.

B.Data supports automatic logout of users after a period of inactivity. The duration of inactivity is configurable via the functional group.

If a user has entered the wrong password several times during login to B.Data, this user is locked out by the system. Only an administrator can remove this lock.

#### Requirement

- Authorization to create users exists.
- Access to an email server is set up in B.Data.

#### Setting up users

- 1. Select the folder in which you want you create the user.
- Click the "Insert user" button in the Plant Explorer menu bar under "Master data > Authorization".

The "Users" dialog opens. The "General" tab is displayed.

- Enter the selected B.Data user name for the user, for example, the last name of the user and the first letter of the first name. Alternatively you can specify an account ID as the user name.
- 4. Enter the email address of the user.

Notifications about password changes and temporary passwords will be sent to this email address. This email address can also be used to login to B.Data.

- 5. You can also enter a user description.
- 6. As needed, enter additional contact information for the user.

ŧ	User - MUSTERMANNM -		×			
Common Admin	Common Administration Quicklinks for Web Quicklinks for Client					
Login Name MUS	TERMANNM					
Description B.D.	ata User		0			
Information detail	s / Contact data					
Firstname	Max Lastname Mustermann					
Email	max.mustermann@siemens.com					
Department	Paper United					
Address	Paper United Street 1					
Zip Code	D-91052 City Erlangen					
Country	Germany					
Phone	+ 49 (0)9131 12345678-9					
9	ок с	ancel				

## Result

The B.Data user is created in the project tree of the Plant Explorer.

🕂 🎦 User

#### See also

Basic information on authorizations (Page 86) Configuring the query type for a report (Page 195) Fundamentals of creating printer and directory (Page 81) Object naming conventions (Page 33) Configuring Quicklinks (Page 36) Configuring authorizations (Page 93) Managing users (Page 90) B.Data options (Page 373) Configuring master data

3.3 Configuring authorizations

# 3.3.3 Managing users

## Introduction

Changes to user data take effect the next time the user logs in.

## Requirement

- User is created
- A Windows user account exists for the user (only Single Sign On)

## Procedure

- Double-click the user's entry in the project tree in Plant Explorer. The "Users" dialog opens.
- 2. Select the "Administration" tab.

Common Administration Quicklinks for Web Quicklinks for Client
Administration User disabled Unlock SetPassword Authority Level O
Single sign on   Enable single sign on  Please choose user of operating system for login.  mustermannm Select OS User
OK Cancel

## Enabling Single Sign On

When a user starts the B.Data- Plant Explorer, the system checks whether his/her Windows user name is entered in B.Data . If B.Data can identify the name, the user does not have to reenter his/her access data.

- 1. Activate the option "Enable Single Sign On".
- 2. Click "Select System User".

The "Select User" dialog opens.

Select User	×
Select this object type:	
User	Object Types
From this location:	
WIN81V6	Locations
Enter the object name to select ( <u>examples</u> ):	
mustermannm	Check Names
Advanced	OK Cancel

Alternatively, you can enter the Windows user name directly in the "Select System User" field.

- 3. Select the user's Windows user name and click "OK".
- 4. The Windows user name of the user is applied in the "Select System User" field.

## Locking and unlocking a user

A locked user can no longer login to B.Data :

- B.Data Client
- B.Data Acquisition configuration
- B.Data Web
- B.Data Mobile

A locked user continues to receive email notifications that are configured for him/her, for example, emails with B.Data reports.

- 1. To deactivate the user, activate the "User disabled" option.
- 2. You can unlock user access again by clicking "Unlock".

User access has now been deactivated or reactivated.

## Set password

For the initial login, by default the system uses the user name in uppercase letters as the password, for example, if the user name is "SmithJ", the password is "SMITHJ".

- 1. Select the "Administration" tab in the "User" dialog.
- 2. Click "Set password".

The "Change Password" dialog opens.

3. Enter the selected password and confirm the password.

## Creating Quicklinks for Web and Client

You can create Quicklinks for the user, for B.Data Web and B.Data Client . To do so, select the corresponding tab and create the required Quicklinks. You can find additional information on this topic in the "Configuring Quicklinks" section.

## See also

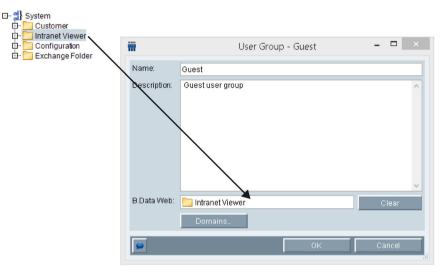
Basic information on authorizations (Page 86) Setting up users (Page 88)

## Creating user groups

1. To create a user group, click the "Insert user group" button in the Plant Explorer menu bar under "Master data > Authorization".

The "User Group" dialog opens.

- 2. Enter a user "name" and an optional "description".
- 3. To define the entry point for B.Data Web, drag-and-drop the target folder from the plant structure to the "B.Data Web" field.



This object and all of its nested objects are visible to these user groups on the Intranet.

## Note

Before you can assign domains, you first have to create the user group.

4. Save the configuration with "OK".

## Assigning domains to the user group

- 1. To assign domains to the user group, double-click the corresponding user group in the plant tree.
- 2. Click "Domains" in the user group configuration dialog.

The available domains are displayed under "Available" in the domain selection dialog.

Ũ.	Domains	- <b>-</b> ×
Available		Assigned
Guest		Admin Mandant
	⇒	
	\$	
	ОК	Cancel

3. Using the arrow key, assign the selected domain to the user group.

#### Note

The view may be restricted for the administrator as well. Only the B.Data Admin User "bdata\_sys" is always assigned all domains. Another administrator who is assigned only two of four domains may pass only these two domains to user groups.

4. Save the configuration with "OK".

## Creating functional groups

 To create a functional group, select the "Functional Groups" folder and click the "Insert functional group" button in the Plant Explorer menu bar under "Master data" > Authorization".

The "Functional Group" dialog opens.

<u>e</u> t	Functional Group - Administrator 🛛 🗖 🗖	×
Name:	Administrator	
Description:	Administrator group whith all rights	Ŷ
Authority Level:	1000	
Auto Log Off:	Enable Idle Duration: 15 Idle Minutes	
Assigned Rights		
🖽 🗹 🖂 Adminis		-
Brue BData A	-	
BData A		
BData J		
⊡- ✓ Chart O		
⊡- ✓ Client C		
⊞- ✓ Energy	Efficiency	
⊞- ✓ ERP Co	onnector	
⊞- ✓ File		
⊡- ✓ Folder		
	andExport	
Er Licensi	ng	
Erer ✓ Loop, P		
⊡ ✓ Loop, ⊢		
⊡ ✓ Master		
	red Value	
⊞ ✓ Measur	rement	
🖽 🗹 Measur	ring Variable	
	Connector	
🕀 🗹 Parame		
Permiss	sion	
⊡… ✓ Printer		-
9	OK Apply Cancel	

- 2. Enter a user "name" and an optional "description".
- 3. Select the "Authority level".

If the user group is assigned several functional groups, the respective highest value is transferred to the user.

4. As needed, activate "Auto logout" and enter the number of minutes until the automatic logout.

30 seconds before the automatic logout, a dialog is opened, in which the seconds until the automatic logout are counted down.

5. Save the configuration with "OK".

## Assigning user authorizations

- 1. To actually assign authorizations to the user:
- 2. Assign the user to a user group in the plant tree.

🗗 🎆 Guest 🕴 BDATA\_GUEST

3. Assign the user group to one of several functional groups in the plant tree.



4. The functional user group created above is not granted access rights for tables. You should therefore assign the user group to an existing functional group that has been assigned corresponding authorizations.



## Specifying the authority level of objects

- 1. To specify the authority level of an object, select the "Properties" command from the shortcut menu of the object in the properties dialog.
- 2. Specify the "Authority level".

#### Note

Always assign authority level values that are greater than or equal to your authority level.

Select the "Inherit Authority Level to children" check box to enable the transfer of the authority level to all child objects.

Usually, an inheritance is not required: If the parent object is not visible, the nested objects are also not visible. However, this inheritance is necessary if you make the child objects available to other domains by means of the exchange folder.

	Folder - Config	uration	- 🗆 X
Name: Description:	Configuration		
Authority Level:	750	Inherit Authori	ty Level to children.
Properties			
Name	Value		New Edit Delete
9		ОК	Cancel

## Specifying the view of different domains

- 1. To specify the view of different domains, click the 👱 icon in the menu bar.
- 2. Select the required domain and click "OK".

Use the filter function to speed up the search for the required domain.

Domain	Selection	×				
Select the location its objects should be dis	Select the location its objects should be displayed.					
Domain (Location):						
<all></all>						
Admin Mandant Guest						
Filter Domain						
	ОК	Cancel				

Select "<all>" to make all objects in the domains that are assigned to the user visible. If the user selects only one domain from this list, only the objects that are assigned to this domain will be visible.

#### Configuring the domain membership of objects

1. Select the object and then select the "Domains" command from the shortcut menu.

The available domains are displayed under "Available" in the domain selection dialog.

Doma	ins of Folder - Configuration 🛛 🗕 🗙
Available	Selected
Guest	Admin Mandant
Add additional Domainto C Remove Domains from Ch	
	OK Cancel

- 2. Using the arrow key, assign the selected domain to the object.
- 3. If the authority level that has been assigned prevents the object from being visible to all users, activate the "Insert into a domain exchange folder" function.

In this case, a link to the object concerned is created in the exchange folder.

4. Select the "Assign domains to children" check box if you want to assign the nested objects of an object to the new domain.

- 5. Select the "Remove domains from children" check box if you want to remove the nested objects of an object from the domain.
- 6. Save the configuration with "OK".

## Authorizations in B.Data Web

Specify the entry point for B.Data Web in the user group configuration dialog. Provided the corresponding authority level and domain membership have been set, the object and all of its nested objects will be visible in B.Data Web. Same as on the fully-fledged client, B.Data Web checks if the necessary authorizations exist for the actions to be executed.

## See also

Basic information on authorizations (Page 86) Setting up users (Page 88) 3.4 Configuring units

# 3.4 Configuring units

## Overview

A unit may be assigned to any physical variable such as power or work, as well as to nonphysical variables such as costs. You may define and generate new units if the ones that are available are inappropriate.

All available units are located in the "Constant and definitions > Unit" section of the configuration folder.

## Inserting the unit

- 1. Select the folder in which the unit is going to be created.
- 2. Click the "Insert Unit" button in the menu bar under "Master Data > Configuration".

The "Unit" dialog opens.

kW	Unit - mA 🛛 🗖 🗖	×
Name:	mA	
Description:	Milliampere	^
		~
Unit Type:	el. amperage	•
	OK Cancel	

- 3. Enter the unit name in the "Name" field.
- 4. You may also enter a "description".
- Then select the suitable "Unit type" for the unit.
   The unit type is used to group similar units.
- 6. Click "OK" to save the configuration.

## Opening the unit conversion

1. Click the "Open Unit Conversion" button in the menu bar under "Master Data > Configuration" to open the unit conversion.

SIEMENS
File Acquisition Processing Analysis Master Data Administration Help
D
System + Exchange Folder + Open Unit Conversions
Menu Configures Unit Conversions.

2. Edit the factors for conversion between the source and target units or generate new conversion factors.

These conversion factors are used only in a few MEVA functions for unit conversion for output, as well as in the matrix for input to storage unit conversion.

t	Unit	Unit Conversions		
From Unit	△ To Unit	Conversion Factor	New	
d	s	86400		
h	S	3600	Edit	
kg	t	0,001	Delete	
KW	MVV	0,001		
k₩h	MVVh	0,001		
k///h	Ws	3600000		
l/h	m³/h	0,001		
m³/h	1/h	1000		
min	S	60		
MW	KVV	1000		
s	S	1		
s	min	0,016666666666666		
s	h	0,000277777777777778		
s	d	1,15740740740741E-05		
s	W	1,65343915343915E-06		
t	kg	1000		
W	s	604800		
Ws	ki/Vh	2,7777777777778E-07		
		ок	Cancel	

# 3.5 Configuring cycle times

## Overview

You define data acquisition intervals in B.Data by setting the cycle time, for example, 1 day. Data is acquired at daily intervals in this case. The value is generated at 00:00:00 h.

B.Data provides predefined cycle times, e.g. "1 hour", or "1 second". You may set up a custom cycle time if the list of predefined cycle times does not contain a suitable entry.

## Procedure

- 1. Select the folder in which you want to set up the cycle time.
- Click the "Insert Cycle Time" button in the menu bar under "Master Data > Configuration". The "Cycle time" dialog opens.
- 3. Type in a name for the cycle time.
- 4. You may also enter a description for the cycle time.
- 5. Enter a value in "Value" and select the unit, e.g. "5" and "[d] days".

ಲ್ಕಿ	Cyc	e Time - 5 d			×
Name:	5 d				
Description:	5 days				^
					~
Value:		5 Unit:	[d] day		•
_	_		_		-
		OK		Cancel	

6. Click "OK".

## Result

The cycle time is configured and set up in Plant Explorer.



You can edit, clone, or delete the configured cycle time.

# 3.6 Configuring query types

## Overview

Use a query type in B.Data to specify a time range, which is queried for example in a report.

B.Data provides predefined query types, e.g. "week", or "year". You may set up a custom query type if the list of predefined query types does not contain a suitable entry.

Specify the following values when setting a query type:

Duration

Use the "Duration" setting to specify the time period that is to be queried, for example 1 month.

A period of one month is queried in the report, e.g. from 01.02.2013 to 28.02.2013.

Offset

Use the "Offset" setting to specify the offset for the time range that you specified in "Duration", for example 1 day.

A period of one month with an offset of one day is queried in the report, e.g. from 02.02.2013 to 01.03.2013.

Shift selection

Use "Shift selection" to specify that the duration of a shift will be used as the query time range. In addition you need an object of type "shift" or "typical day", which you copy under the query type.

This configuration is an alternative to using "Duration", "Offset", and "One-time offset" Using the subordinate "shift" or "typical day" object, you can more flexibly design the query type.

## Requirement

An object of type "shift" or "typical day" type has been created (optional).

## Procedure

- 1. Select the folder in which you want to create the query type.
- Click the "Insert Query Type" button in the menu bar under "Master Data > Configuration".

The "Query type" dialog opens.

- 3. Type in a name for the query type.
- 4. You may also enter a description for the query type.
- 5. Specify the interval for automatic deletion of report results from the project tree of Plant Explorer in the "Report default delete interval" section.

This data is activated when you select the configured query type in the "Delete interval" area in the course of report configuration. You can overwrite this activated data.

3.6 Configuring query types

- 6. If you would like to define a query type based on a duration:
  - Enter a value in "Duration" and select the unit, e.g. "1" and "[M] Months".
  - Enter a value in "Offset" and select the unit, e.g. "1" and "[d] days".

The offset is added to the "Duration" during periodic forwarding.

- As needed, select "One-time offset".

The value under "Offset" will be added one time, during the first periodic forwarding. During the next forwarding, only the value under "Duration" will be used.

		Query Type - 1 mth +	+ 1 d	
Name:	1 mth + 1 d			
Description:	1 month plus 1	day		^
				¥
Duration:		1	Unit:	[M] month 🔹
Offset:		1	Unit:	[d] day 🔻
Report defau	It delete interval:		Unit:	[Y] year 🔹
		Singular Offset		
			0	K Cancel

- 7. If you would like to define a query type based on a shift:
  - Select "Shift selection".

The settings under "Duration" and "Offset" will be ignored.

ii.		Query Type - Day_3S	Shifts			×
Name: Description:	Day_3Shifts					
Description	1					Ŷ
		1	Unit:	[d] day		-
		0	Unit:	[d] day		-
Report defaul	It delete interval:	1	Unit:	[W] week		•
		<ul> <li>Singular Offset</li> <li>Shift Picker</li> </ul>				
			O	К	Cancel	

- Copy the "shift" or "typical day" object in the project tree under the query type.

ProductionMonitor
 Consumption\_Production1
 Day\_3Shifts
 G 3-8h\_shift

The sequence of the "shift" or "typical day" objects under query type has no effect. In the query, the shifts or typical days will be sorted according to the times that are actually configured.

#### Result

The query type is configured and set up in Plant Explorer. The query type is available in each object, in which time periods are queried, for example in dashboards or reports.

3.6 Configuring query types

3.7 Creating objects for Enterprise Resource Planning

# 3.7 Creating objects for Enterprise Resource Planning

## 3.7.1 Basics on objects for Enterprise Resource Planning

Additional information is needed when booking services in ERP. In B.Data , this information is mapped in the form of the following objects:

- 1. ERP domain
- 2. Service type
- 3. Cost center
- 4. Cost center relation

3.7 Creating objects for Enterprise Resource Planning

## 3.7.2 Creating ERP domains

#### **Overview**

ERP domains are necessary for accounting by means of cost center relations and serve as criterion for selection of the respective cost centers.

#### Requirement

The ERP objects have been properly installed.

#### Procedure

- 1. Select the folder in which the ERP domain is going to be created.
- Click the "Insert ERP Business Unit" button in the menu bar under "Master Data > ERP". The "ERP Domain" dialog opens.

	ERP Business Unit - Siemens 001	-		×
Name:	Siemens 001			
Description:				^
Extern Label:	Siemens 001			~
	ОК	Ca	ancel	

3. Enter a meaningful "Name" and an optional "Description" as well as the "external label". Click "OK" to confirm your entries and to generate the ERP domain.

占 📴 Business Unit

#### Result

You have successfully created the ERP domain and it is now ready for use by the cost centers.

3.7 Creating objects for Enterprise Resource Planning

## 3.7.3 Creating service types

## Overview

Service types are required for settlement details in the cost center relations.

## Requirement

The ERP objects have been properly installed.

## Procedure

- 1. Select the folder in which the service type is going to be created.
- 2. Click the "Insert ERP Cost Element" button in the menu bar under "Master Data > ERP".

The "ERP Service Type" dialog opens.

И	ERP Cost	t Element - F	PH1	_ □	×
Name:	PH1				
Description:					^
					~
Extern Label:	PH1				
		ОK		Cancel	

3. Enter a meaningful "Name" and an optional "Description" as well as the "external label". Click "OK" to confirm your entries and to generate the service type.



## Result

You have successfully created the service type and it is now ready for use in the settlement details for cost center relations.

3.7 Creating objects for Enterprise Resource Planning

# 3.7.4 Creating cost centers

#### **Overview**

Cost centers are necessary for accounting by means of cost center relations and are assigned to exactly one domain.

#### Requirement

The ERP objects have been properly installed.

#### Procedure

- 1. Select the folder in which the cost center is to be created.
- Click the "Insert ERP Cost Center" button in the menu bar under "Master Data > ERP". The "ERP Cost Center" dialog opens.

20	ERP Cost Centre - CC 1239099 🛛 – 🗖 🗙	
Name:	CC 1239099	
Description:		
Extern Label:	CC 1239099	
Business Unit	Siemens 001 🗸	
	0K Cancel	1

3. Enter a meaningful "Name" and an optional "Description" as well as the "external label". After having assigned the cost center to a domain, click "OK" to confirm your entries and to generate the cost center.



#### Result

You have successfully created the cost center and it is now ready for use with the cost center relations.

3.7 Creating objects for Enterprise Resource Planning

# 3.7.5 Creating cost center relations

#### Overview

Cost center relations are necessary for the settlement of values computed in B.Data in an external ERP system.

#### Requirement

The ERP objects have been properly installed.

#### Procedure

- 1. Select the folder in which the cost center relation is going to be created.
- Click the "Insert ERP Cost Center Relation" button in the menu bar under "Master Data > ERP".

#### The "ERP Cost Center Relation" dialog opens.

Name: C	C 12390	99 - CC 1239100		
Description:				
Extern Label: C	C 12390	99 - CC 1239100		
Accounting From	n/To			
Business Unit		Siemens 001		
Source Cost Cer	ntre:	CC1239099		
Destination Cost	Centre:	CC1239100		
Accounting Deta	ails			
CostElement	PH1			
Personnel Numb	oer: 666			
Accounting Day:			30	
		tive		

3. Enter a meaningful "Name" and an optional "Description" as well as the "external label". Select the domain and set the source and destination cost centers in the "Settlement From/To" area. Set up the service type in the settlement details. The specified personnel number is used to launch the transaction on the ERP system on the specified accounting day, provided the "Active" state has been set.



#### Result

You have successfully configured the cost center relation and it is now ready for use in accounting.

3.7 Creating objects for Enterprise Resource Planning

# 3.8 Managing energy efficiency measures

# 3.8.1 Basics on managing energy efficiency measures

The "Energy Efficiency" module in B.Data provides company-wide transparency in the management of energy efficiency measures. The "Energy Efficiency" module in B.Data was developed in accordance with DIN EN ISO 50001.

The "Energy Efficiency" module in B.Data provides the following options for management of the energy efficiency measures:

- You can enter all energy efficiency measures for all locations of your company.
- You can enter the saving potential and cost of the energy efficiency measure and calculate its cost efficiency.
- You can assign a status that indicates the degree to which the energy efficiency measure has been implemented.

#### Procedure for managing energy efficiency measures

- 1. Create an energy efficiency measure.
- 2. Enter the plant and location for which you defined the energy efficiency measure.
- 3. Enter the financial saving potential for the plant.
- 4. Enter the running costs for the plant and calculate the cost effectiveness of your energy efficiency measure.
- 5. Define a user responsible for the energy efficiency measure.
- 6. Create one or several domains that are permitted to view and edit an energy efficiency measure.
- 7. Select a status for the energy efficiency measure.

#### See also

Creating energy efficiency measures (Page 113)

Entering financial saving potentials for an energy efficiency measure (Page 115)

Calculating cost efficiency for energy efficiency measures (Page 117)

Specifying responsibilities for an energy efficiency measure (Page 119)

Specifying clients for an energy efficiency measure (Page 120)

Displaying information about an energy efficiency measure (Page 122)

# 3.8.2 Creating energy efficiency measures

#### Procedure

 Click the "Insert Energy Efficiency Measures View" button in the menu bar under "Analysis > Energy Efficiency".

The "Energy Efficiency Measures View" dialog opens.

2. Click "New".

The "Energy Efficiency Measure" dialog opens.

- 3. Select a name for the energy efficiency measure under "Project Name" on the "General" tab.
- 4. If required, also enter a description of the actual state and target state of the consumption situation.
- Select the priority of the energy efficiency measure under "Category", for example, "A-Project" for the top priority.
- 6. Enter a region, a plant and a business unit for efficient filtering of the energy efficiency measure.

•	Energy Efficiency Measure - Reduce water consumption – 🗖
Overview	Common 🕴 Responsibility Saving Capabilities Cost Effectiveness 📶 Domains Attachments
ProjectNam	me: Reduce water consumption
Description	of Current Situation:
	consumption of the production is very high. nd time of rinsing water are also too high.
Description	ofOptimal Situation:
Ontimizatio	on of the control system to reduce the amount and time of rinsing water.
opunizan	
opumizan	
	Production plant
Equipment	
	Production plant
Equipment Category:	Production plant C-Project Linz
Equipment Category: Region: Business U	Production plant C-Project Linz

7. Confirm the configuration with "OK".

# Result

You created the energy efficiency measure.

leasures Filter Cr	reate Node	Currency: EUR						Refresh	
Name	Region	Bus. Unit	PI. Sav. (€Y)	Act. Sav. (€Y)	Pl. CO2 Red. [	Act. CO2 Red	Pay Back (Y)	Status	New
Reduce water consump	Linz	IA	15000,00	0,00	0,00	0,00	1,43	Initial	Edit
Optimization of the com	Munich	BT	12000,00	0,00	97,20	0,00	0,87	Evaluate	Euit
Exchange boiler	Linz	IA	10600,00	11130,00	86,80	91,14	4.70	Realized	Delete
Optimization of lighting	Munich	BT	10400,00	0,00	84,24	0,00		Initial	
Optimization of lighting	Munich	BT	10400,00						
			10400,00	0,00	84,24		3,50		

You can edit or delete the energy efficiency measure, or create a new one.

# See also

Configuring the plant (Page 311)

# 3.8.3 Entering financial saving potentials for an energy efficiency measure

#### Overview

Enter the financial saving potential of an energy efficiency measure in the "Saving Capabilities" tab separately for each consumption medium. The saving potentials comprise:

- · Costs incurred prior to the introduction of the energy efficiency measure
- Scheduled costs following the introduction of the energy efficiency measure
- · Costs incurred after introduction of the energy efficiency measure

#### Requirement

You created the energy efficiency measure.

#### Procedure

1. Double-click the relevant energy efficiency measure in the overview of energy efficiency measures.

The "Energy Efficiency Measure" dialog opens.

- 2. Select the "Saving Capabilities" tab.
- 3. Enter a consumption medium.
- 4. Select a unit for the consumption medium.
- 5. Select a parameter, or enter a constant value for the costs and the CO<sub>2</sub> production per unit.
- 6. Enter your values for the post measure state and the planned state of consumption.
- 7. Confirm the configuration with "OK".

# Result

You have successfully entered the financial saving potentials for the energy efficiency measure. The total of all savings and the CO<sub>2</sub> reduction is calculated in the "Summary" area. The difference between the planned and the actual state of consumption is calculated under "Diff. Pl." and "Act. Diff.".

Energy Effic	ciency Measure	- Reduce water	consumption		_ 🗆 🗙
Overview Common 🕴 Responsibility Saving Capa	abilities Cost Effe	ectiveness 📶 Dom	nains Attachment	S	
Possible Savings:					
Medium	Pl. Sav. [6]	Pl. CO2 Red. [	Act. Sav. [6]	Act. CO2 Red	New
Water	15000,00	0,00	0,00	0,00	Edit
					Delete
					Delete
Summary					
Savings Planned:	15000 €	Savings Realize	d:	0,00	) €
CO2 Reduction Planned:	0 Tons/Year	CO2 Reduction F	Realized:	(	) Tons/Year

You can edit, delete, or enter new financial energy-saving potentials.

#### See also

Creating energy efficiency measures (Page 113)

# 3.8.4 Calculating cost efficiency for energy efficiency measures

### Overview

Implementation of an energy efficiency measure is initially subject to costs, e.g. purchase of a generator with lower consumption figures. On the "Cost Effectiveness" tab, enter the investment costs, the running costs, and the time period for the costs of the energy efficiency measure. Continue by calculating the cost efficiency of the energy efficiency measure.

#### Requirement

You created the energy efficiency measure.

# Procedure

1. Double-click the relevant energy efficiency measure in the overview of energy efficiency measures.

The "Energy Efficiency Measure" dialog opens.

- 2. Select the "Cost Effectiveness" tab.
- 3. Select a period for which you want to calculate the cost efficiency of an energy efficiency measure.
- 4. Enter a name and a value for the annual active costs.
- 5. Enter the values for the investment costs and for the internal interest rate.

- Click "Calculate" to calculate the cost effectiveness of the energy efficiency measure. The result is displayed in the "Calculations" area of the following fields.
  - ROI: Displays the ID for returns on investments.
  - NPV: Displays the net present value of capital.
  - Amortization time: Displays the amortization period.

•		Energy	Efficiency I	Measure - Redu	ce water cons	sumpti	on			)
Overview Co	mmon 🕴 Resp			Cost Effectivenes	s 📶 Domains	Attachr	ments			
Observation Pe	eriod: from 201	3 🗸	to 2018	•						
Costs per Yea	r.									
Name							Costs		New	
Maintenance								1000	Edit	
									Delete	
Sum: 1000,00	)€									
		Internal Interest								
Sum: 1000,00 nvest:		Internal Interest:								
		Internal Interest: «ConstValue»	•	v						
			• 10 9	%						
				%						
nvest:				% Pay Back						
nvest: Calculations		<constvalue></constvalue>		Pay Back	1,43 Yea	ars	Calc			
nvest: Calculations	20000 €	<constvalue></constvalue>	10 9	Pay Back	1,43 Yea	ars	Calc			

7. Confirm the configuration with "OK".

#### Result

You have successfully calculated the cost efficiency of the energy efficiency measure. You can edit the entries and recalculate the cost efficiency of the energy efficiency measure.

# See also

Creating energy efficiency measures (Page 113)

# 3.8.5 Specifying responsibilities for an energy efficiency measure

#### **Overview**

On the "Responsibility" tab, you define the responsible person for an energy efficiency measure for information purposes.

#### Requirement

- You created the energy efficiency measure.
- The user has been created.

#### Procedure

1. Double-click the relevant energy efficiency measure in the overview of energy efficiency measures.

The "Energy Efficiency Measure" dialog opens.

- 2. Select the "Responsibility" tab.
- 3. Select the responsible person.

The user details are displayed.

L	Energy Efficiency Measure - Reduce water consumption – 🗖 🗙
Overview Commo	on 🕴 Responsibility Saving Capabilities Cost Effectiveness 📶 Domains Attachments
Responsible User.	MUSTERMANNM
User details	
Firstname	Max Lastname Mustermann
Email	max.mustermann@siemens.com
Department	Paper United
Address	Paper United Street 1
Zip Code	D-91052 City Erlangen
Country	Germany
Phone	+ 49 (0)9131 12345678-9
	OK Apply Cancel

4. Confirm the configuration with "OK".

#### Result

You have successfully specified responsibilities for the energy efficiency measure.

# 3.8.6 Specifying clients for an energy efficiency measure

#### Overview

Use the "Domains" tab to specify domains that are permitted to view and edit an energy efficiency measure.

By assigning a domain to an energy efficiency measure, you ensure that company employees will only be able to view and edit the energy efficiency measures that are implemented at their location.

#### Requirement

- You created the energy efficiency measure.
- The client has been created.

#### Procedure

1. Double-click the relevant energy efficiency measure in the overview of energy efficiency measures.

The "Energy Efficiency Measure" dialog opens.

- 2. Select the "Domains" tab.
- 3. Select the required client under"Available" and assign this client to the "Assigned" group.

			E	Energy Efficiency	Measure - Redu	ce v	ater cor	nsumption		-	×
Overview	Common	i	Responsibility	Saving Capabilities	CostEffectiveness		Domains	Attachments			
			Available						Assigned		
					¢		Admin	Mandant			
						ſ	Oł	<	Apply	Ca	ncel

4. Confirm the configuration with "OK".

#### Result

You have specified the client for use of the energy efficiency measure. You can remove the client from the "Assigned" group, or assign a new client to this group.

# 3.8.7 Inserting documents for an energy efficiency measure

#### Overview

On the "Attachments" tab, insert documents that contain additional information for an energy efficiency measure, e.g. charts or sketches. These documents are not managed in the B.Data document management.

#### Requirement

You created the energy efficiency measure.

#### Procedure

1. Double-click the relevant energy efficiency measure in the overview of energy efficiency measures.

The "Energy Efficiency Measure" dialog opens.

2. Select the "Attachments" tab.

	Energy Efficiency Measure - Reduce water consumptio	n	
Overview	Common 🕴 Responsibility Saving Capabilities Cost Effectiveness 📶 Domains Attachme	nts	
ttached F	iles:		
lcon	File Name	Size	Add
	Detailed Description PlantA.bt	76 B	Open
			Save As
			Delete
	OK	Apply	

- 3. Click "Add" and select the document that you want to insert for the energy efficiency measure.
- 4. Confirm the configuration with "OK".

#### Result

You have successfully inserted the document for the energy efficiency measure. You can edit or delete the document, or add a new one.

# 3.8.8 Displaying information about an energy efficiency measure

#### Overview

The "Overview" tab shows you information on an energy efficiency measure, including:

- Name
- Investment costs
- Saving potentials
- Responsible person
- Location

You can also assign a status for the energy efficiency measure in the "Overview" tab and export the information on the energy efficiency measure to Microsoft Excel.

# Requirement

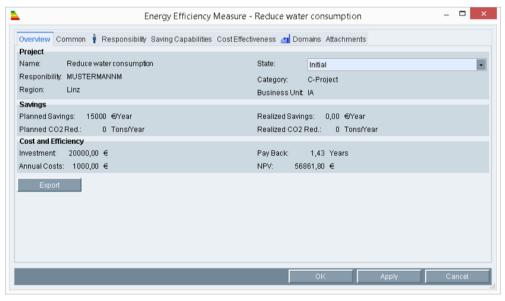
You created the energy efficiency measure.

#### Procedure

1. Double-click the relevant energy efficiency measure in the overview of energy efficiency measures.

The "Overview" tab opens in the "Energy Efficiency Measure" dialog.

- 2. Under "Status", select the required status to assign it to the energy efficiency measure.
- 3. Click "Export" to visualize the information provided on the "Overview" tab in Microsoft Excel.



4. Confirm the configuration with "OK".

# 3.8.9 Generating a filtered overview object

#### **Overview**

A filtered overview object provides you with an overview of all energy efficiency measures that are important to you.

If you want to generate a report that contains all data of an energy efficiency measure in Microsoft Excel , insert the filtered overview object under the module of the report.

#### Requirement

You created the energy efficiency measure.

#### Procedure

- 1. Select the folder under which you wish to create the filtered overview object.
- 2. Click "EE Overview" under "Master Data" in Plant Explorer. The "Energy Efficiency Measures View" dialog opens.
- 3. Click "Create Node".
- 4. Enter a unique name and an optional description for the filtered overview object.
- 5. Click "Filter" to filter the relevant energy efficiency measures.

The "Energy Efficiency Measurements View Filter" dialog opens.

6. Enter the filter data.

<b>T</b>	E	nergy Efficiency Measurents View	/ Filter –	×
Name				
Region:				
Business Unit				
Sav. Cap. [€/Y]:	🗌 Min	0 🗆 Max	0	
Sav. Cap. Pl. [\$\$/Y]:	Min	0 🗌 Max	0	
Status:	Initial			-
CO2 Red. PI. [T/Y]:	Min	0 🗌 Max	0	
CO2 Red. Af. [T/Y]:	Min	0 🗌 Max	0	
Pay Back [Y]:	🗌 Min	o 🗌 Max	0	
Category:	A-Projec	1		-
Equipment				
Investment [€]:	🗌 Min	0 🗌 Max	0	
Currency:	EUR [€]			-
	_		01/ 000	40
			OK Can	cei -

7. Confirm your entries with "OK".

The relevant energy efficiency measure is displayed in the "Measures" area.

ame: All Measures									
escription:									
easures Filter Pay E	lack [Y]: 0-2; Cu	rrency EUR						Refresh	I.
									1
Name	Region	Bus. Unit		Act. Sav. (€/Y)	Pl. CO2 Red. [	Act. CO2 Red	Pay Back [Y]	Status	New
Reduce water consump Optimization of the com	Linz Munich	IA BT	15000,00	0,00	0,00	0,00		Initial Evaluate	Edit
									Delete
						_			
ummary								,	J
	2 To	tal CO2 Red. PI:	97,20 Tons/Year	Total CO2 Red. At	: 0.00 Tons/Yea	r ROLAverage:	10.38		
Project Count: Total Investment: 30	000,00 € To	tal Savings PI.: 2	7000,00 €Year	Total Savings Af .:	0,00 erear				

8. Confirm the configuration with "OK".

#### Result

You have created the filtered overview object.



Double-click the filtered overview object to view the filtered energy efficiency measure.

To generate a report for the filtered energy efficiency measure, insert the filtered overview object under the report. Use the "Energy Efficiency Measure" module for this report. You can find more information on this topic in the "Module Overview" chapter, keyword "Energy Efficiency Measure".

#### See also

Creating a report (Page 191) Module overview (Page 478)

# Calculation level 1 "The loop concept"

# 4.1 Basic information on calculation level 1

#### **Overview**

You can pre-process the measured values you import to B.Data before you save these to the database. For example, you can compress the acquisition values to daily values or calculate a conditional average value of different measurement series.

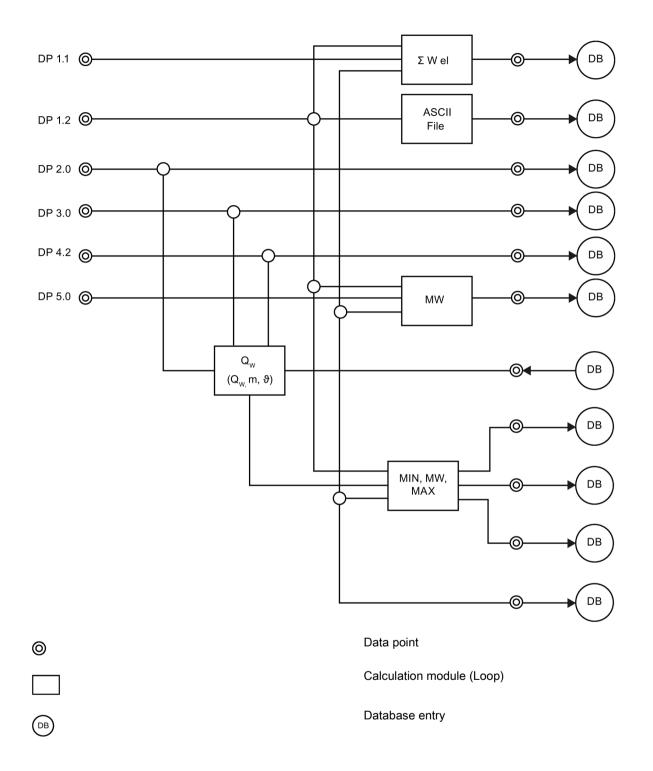
B.Data provides two options for real-time pre-processing of measured values:

- Compression of measured values during import
- Processing measured values with loops

The processing of values before entering them into the database is known as "Calculation level 1".

The following diagram illustrates the pre-processing of measured values imported to B.Data. You can use the loop concept to individually process or link the measured values of different data points: This allows you to calculate average, minimum and maximum values, for example.

4.1 Basic information on calculation level 1



4.1 Basic information on calculation level 1

# Compression of measured values during import

You can compress the acquisition values in the import phase. This "Online compression" is activated by default. You then configure the selected compression functions in the data point. It is also possible to configure a substitute value strategy.

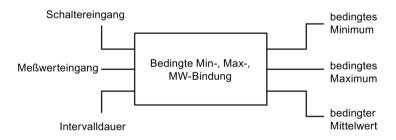
As an alternative, you can compress acquisition values with jobs at any time, or recalculate compressed values.

Application example: You wish to import counter states to B.Data. The consumption values and daily consumption values will be calculated by differentiation during the import.

#### Processing measured values with loops

Loops are calculation functions that you apply to one or several data points. You can use loops, for example, to calculate or link measured value series of different recording periods. B.Data allows you to use preconfigured loops, or to program your own calculation functions using the Measurement Compile Language (MCL) programming language. B.Data Provides various calculation functions, for example, conditional recordings, extensive filter functions, trigonometric functions, logic operators, compare operations, or conversion operations. You can also map non-linear processes with unknown function rules or equations in the form of tables. Users with corresponding configuration authorization may always change data point assignments, calculation modules, and logic conditions by means of the user system.

Application example: Conditional calculation of minimum, maximum and average values. The interval duration for the grouping function (e.g. ½ h), the measured values with corresponding interval duration, and the trigger input are set at the loop input for conditional calculation. The calculation is only initiated if the trigger input is set to active high state (=1). Results of the calculation are output for the corresponding period on the right side based on the conditional minimum, maximum and average values.



This functionality is defined in the Plant Explorer based on MCL (Measurement Compile Language).

#### Additional information

The next chapters illustrate the following contents related to "Calculation level 1":

- Creating and configuring data points
- Creating and configuring loops
- Creating prototypes
- Functions for prototypes
- Description of the MCL language

Calculation level 1 "The loop concept"

4.1 Basic information on calculation level 1

# 4.2.1 Creating generic data point

#### Overview

A generic data point does not receive its value directly from a particular interface, but from a different source. Such different sources could be ODBC connectors, matrices, or loops.

#### Requirement

- All software components are installed.
- All necessary objects have been configured, e.g. the hardware, driver source, process, drivers, or the IO area.

#### Procedure

- 1. Select the folder in which the data point is to be created.
- Click the "Insert Measurement" button in the menu bar under "Acquisition > Data Point". The "Data Point" dialog opens.

Name:       e_Gas_Total         Description:       Gas Total         Inventory N#:       NO_KKS         Ident. Token:       Ident. Token:         Process:       a_acq_simulation         Image: Active       Creation Date:         28.04.2009 07:50:5	58
Inventory N#: NO_KKS Ident. Token:	v 
	38
Process: a_acq_simulation Active Creation Date: 28.04.2009 07:50:6	58
Unit: kWh Log to DB Valid at: 28.04.2009 07:50:	58 🗸
Input Unit: K/// K// Kernel Valid until: 01.01.2500 00:00:	00 🔹
Function: Measurement Priority High	
Versionizing: No Replacement NO Replace I	nvalids
Cycle Time: 1 month Calculation Window. 1 Unit: 15 min	-
Country: Germany Corrected until: 28.04.2009 00:00:00	
Туре:	
Generic Name Value	
Datapoint	
Oconstant	
Details Occurtor Discussion Constant	
Details Counter Plausibility Compression Export	
DK Canc	el

- 3. Parameterize the fields.
  - Enter the "Name" for the measurement, taking naming conventions into account.
  - You may also enter a "description".
  - Enter the "Inventory N#".

The inventory number is a KKS or FIS number. The inventory number is output if you select the "KKS Text" mode for a report.

- Enter "Ident. Token" as additional identifier, if necessary.

The "Ident. Token" is used only by a special import/export interface.

- You can select a "Process" that is not actively used for data acquisition, e.g. "a\_erf\_null", or "a\_rech\_PDS".
- Select the physical unit.

The unit may depend on the processing routine (loop), or on the lower-level data type.

- Select the "Input Unit" check box and select the unit.

The "Input Unit" is used for the manual input of matrix data.

Example: You selected the "kW" unit and defined the "MW" input unit. The value 500,000 W is stored in the database with the notation "500 kW". You can enter the value "0.5 MW" manually in the matrix.

- Enable or disable versioning of the data of this measurement using the "Versioning" drop-down list box.
- Enter the "Cycle Time" for cyclic availability of the values.
- Under "Country", select the country whose time zone you want to use for the acquisition.
- Select the "Active" check box if the measurement is used in the system (e.g. loops).
- Select the "Log to DB" check box to write the values returned from a loop to a database.
- Select the "Kernel" check box to enable the use of the acquisition component of this measurement.
- Select the "Priority High" check box to enable write protection for manual matrix input.
- Select "Measurement" from the "Function" field.
- Accept the "NO" setting in the "Replacement" field.
- Set the "Generic" radio button in the "Type" area.
- 4. Confirm your entries with "OK".

#### Result

The configuration dialog is closed. The server object is now generated at the corresponding tree position.



The current date is set in "Creation Date", "Valid from", and "Valid until" date fields when you create a new measurement. Further functionalities are currently not associated with these fields.

Once the measurement has been corrected, the date and time are set automatically in the "Corrected until" field.

The user name of a user who changes the configuration of the measurement is entered in the "Last changed by" field.

You successfully configured the generic point and it is now ready for use.

#### See also

Countries (Page 401)

# 4.2.2 Creating data points

#### Overview

This section provides instructions related to the following actions:

Creation and configuration of data points

Data points are operating data points which receive their values directly from an interface (database interface, drivers, etc.).

# Requirement

All necessary objects have been configured: hardware, driver source, process, drivers, IO area, etc.

#### Procedure

- 1. Select the folder in which the data point is going to be created.
- Click the "Insert Measurement" button in the menu bar under "Acquisition > Data Point". The "Data Point" dialog opens.

		Measurement -	d_temper	ature	- 🗆 ×
Name:	d_temperature				
Description:					^
					×
Inventory N#:	NO_KKS		ldent. Toker	1:	
Process: a_a	acq_OPC	•	Active	Creation Date:	11.09.2008 11:27:09
Unit: 1			Log to D	9 Valid at:	11.09.2008 11:27:09
Input Unit:	1		🖌 Kernel	Valid until:	11.09.2008 11:27:09
Function: Me	asurement	•	Priority H	igh	
Versionizing:	No	Replacement	NO		<ul> <li>Replace Invalids</li> </ul>
Cycle Time:	1s 🝷	Calculation Window	:	1 Uni	t: 15 min 🝷
Country:	Germany 🔹	Corrected until:	✓ 11.09.	2008 11:27:09 💽	
Туре:					
Generic	Name		Val	ue	
<ul> <li>Datapoint</li> </ul>	Name		d_t	emperature	
Oconstant	Description				
Operived	Address		Boi	er_01.Tag_0001	
0	Cycle Time		1 s		
	Driver		trqz	_OPC_Matrikon	
	Data Type			float	
	IO Buffer		io_	DPC	
	Details	Counter	Plausibility	Compression	Export
9				ОК	Cancel

- 3. Fill out or parameterize the fields as follows:
  - Enter the "Name" of the measurement (data point type). Observe the naming conventions.
  - You can enter additional information on the measurement in the Description field.
  - You can enter a KKS or FIS number, or a user-specific text in the "Inventory no." field. This text will be output, for example, if the "KKS Text" mode is selected for a report.
  - Select the process from which the data is acquired.
  - Select the required unit.
  - Select the "Input Unit" check box to use a unit for the manual input of matrix data.

You may define the "kW" unit and the "MW" input unit. The value 500,000 W is then stored in the database with the notation "500 kW". The value is displayed or entered in the format 0.5 MW for manual matrix input.

- The user who most recently modified the measurement configuration is entered automatically in the "Last changed by" field.
- The Corrected until date field is set automatically by a job after the measurement has been revised. The default is set to 01/01/2007.
- Enable or disable versioning of the data of this measurement using the "Versioning" drop-down list box.
- In the Cycle Time field, enter the period during which the values will be available cyclically. For data points, this period is copied automatically from the cycle time entry specified the detail settings.
- Under "Country", select the country whose time zone you want to use for the acquisition.
- Select the "Active" check box if the measurement is to be used (logged) by the system.
- The Log to DB check box is only set if the acquired values are transferred directly to the database without having been calculated.
- Select the "Kernel" check box to enable the use of the acquisition component of this measurement.
- The current date is set in "Creation Date", "Valid from", and "Valid until" date fields when you create a new measurement. The "Valid until" field is set to the default date 01/01/2500. Further functionalities are currently not associated with these fields.
- You may enter an additional identifier in the "Ident. Token" field. However, this ID is used only by a special import/export interface.
- Select "Measurement" from the "Function" drop-down list box.
- The substitute value" is set to "NO" by default.
- Select the "Data point" radio button in the "Type:" area.
- After having selected the "Datapoint" type, click "Details..." to open the Data point dialog for detailed configuration:

ł	•	Datapoint – 🗆 🗙
	Name:	d_temperature
	Description:	
	Address:	Boiler_01.Tag_0001 Browse OPC Server
	Driver Source:	trqz_OPC_Matrikon VIO Buffer: io_OPC V
	Cycletime:	1 s Datatype: dty_float
	Comment	^
		✓
		OK Cancel
		i.

- The short and long texts copied from the main dialog are displayed, but cannot be edited in this dialog.
- In the "Address" field, enter the precise address name that the particular driver needs for unique identification of the data point.
- Select the driver that acquires the data from the "Driver Source" field.
- In the "Cycle time" field, specify the interval for polling the values of this data point.
- You may enter a user-specific text in the Comment field.
- In the "IO Buffer" field, you can select all of the IO buffers that have been configured for the driver source selected (e.g. a separate IO buffer for each scan cycle).
- In the "Data type" field, you can select one of the types dty\_float, dty\_integer, dty\_boolean, or dty\_string (available only for OPC).
- The "Browse OPC Server..." button is activated if an OPC driver has been selected in "Driver Source". You can browse all OPC servers and their tags that are locally available on the acquisition computer running the acquisition kernel and enter these in the "Address" field with double-click.

#### Note

An IO buffer should always contain data points with the same cycle time. Otherwise, data points with a higher cycle time will always be included in the scan cycle.

4. Confirm your entries with "OK". The configuration dialog is closed. The server object is now generated at the corresponding tree position.

```
⊡ Data Points
⊡ d_temperature
```

#### See also

Countries (Page 401)

# 4.2.3 Creating constants

#### **Overview**

A constant represents a special type of data point that is used as default for data acquisition or for generation of a substitute value. For example, if the averaging period of loops is set by means of a constant, a change to this constant will instantaneously change the averaging period of all loops concerned. Otherwise, you would have to parameterize each loop individually. A replacement value can be generated for each data point and may be used to substitute missing values, provided the "Substitute value" strategy has been selected.

# Requirement

All software components are installed.

# Procedure

- 1. Select the folder in which the constant is going to be created.
- Click the "Insert Measurement" button in the menu bar under "Acquisition > Data Point". The "Data Point" dialog opens.

		Measurer	nent - <b>k_</b> 60		- □ ×
Name:	k_60				
Description:					^
					~
Inventory N#:	NO_KKS		Ident. Token:		
Process: a	_acq_simulation		Active	Creation Date:	25.02.2014 16:15:54
Unit: -			Log to DB	Valid at:	25.02.2014 16:15:54
Input Unit:	-		Kernel	Valid until:	01.01.2500 00:00:00
Function: M	leasurement	•	Priority High	Last changed by:	Admin
Versionizing:	No	Replacement	NO		Replace Invalids
Cycle Time:	15 min 🔹	Calculation Windov	v	1 Unit	
Country:	Germany 🔹	Corrected until:	01.01.20	12 00:00:00 🔽	
Type: O Generic	Name	_	Value	_	
Datapoint	Constant		60,00		
<ul> <li>Constant</li> </ul>					
Operived					
		I			
	Details	Counter	Plausibility	Compression	Export
<b>\$</b>				OK	Cancel

- 3. Fill out or parameterize the fields as follows:
  - Enter the "Name" for the measurement (data type constant). Observe the naming conventions.
  - You can enter additional information on the measurement in the Description field.
  - In the "Inventory no." field, you can enter a KKS or FIS number or a user-specific text that is not intended for further use in constants.
  - In the "Process" field, select the process that is parameterized on the PC that has to work with this constant.
  - Select the physical unit.
  - The user who most recently modified the measurement configuration is entered automatically in the "Last changed by" field.
  - The "Corrected until" date field is irrelevant for constants.
  - The "Versioning" field is irrelevant for constants. Therefore, select "NO".
  - The cycle time, too, is irrelevant and can be set to one second.
  - Under "Country", select the country whose time zone you want to use for the acquisition.
  - Select the "Active" check box to enable the constant for use in the system.
  - Do not select the "Log to DB" check box, as the value is only read from the database but not written.
  - Select the "Kernel" check box to enable the use of this constant by the acquisition component.
  - The current date is set in "Creation Date", "Valid from", and "Valid until" date fields when you recreate the measurement. Further functionalities are currently not associated with these fields.
  - You may enter an additional identifier in the "Ident. Token" field.
  - Select "Measurement" from the "Function" drop-down list box.
  - Keep the "NO" entry in the "Substitute value" field, as this function cannot be used for constants.
  - Select the "Constant" radio button in the "Type:" area.
  - After having selected the "Constant" type, click "Details..." to open the dialog for detailed configuration of the constant:

~	Constant Value	_ 🗆 🗙
		60
	ОК	Cancel

- Enter the constant value.

When using the constant as substitute value for the substitute value strategy, briefly change to the "Constant" type, enter the substitute value and then restore the previous type setting.

4. Confirm your entries with "OK". The configuration dialog is closed. The server object is now generated at the corresponding tree position.

⊡-⊡ Constants |--- 🛃 k\_60

#### Result

You successfully configured the constant and it is now ready for use.

# See also

Countries (Page 401)

# 4.2.4 Creating derived data points

#### Overview

Derived data points represent operating data points that are used to write MEVA results to the database. This means instead of being provided by a sublevel control system, the values are calculated directly in B.Data. Once calculated, the values are written back to the database again as separate data stream.

#### Procedure

- 1. Select the folder in which the data point is to be created.
- 2. Click the "Insert Measurement" button in the menu bar under "Acquisition > Data Point".

#### The "Data Point" dialog opens.

	M	easurement - a_Pla	ant_A_pr	oz_de∖	riation		×
Name:	a_Plant_A_proz_deviation	1					
Description:							~
Decemption							
				_			
Inventory N#:	NO_KKS		ldent. To	ken:			
Process: a	_acq_simulation	-	Active		Creation Date:	21.08.2009 11:39:19	
Unit: KV			Log to DB		Valid at:	21.08.2009 11:39:19	
14			🗌 Kerne	el			
Input Unit:	k///h	-	Driorit	ly High	Valid until:	01.01.2500 00:00:00	•
Function: Me	easurement	•	FIIOII	iy miyir			
Versionizing:	No 💌	Replacement	NO			Replace Inva	alids
Cycle Time:	15 min 🔹	Calculation Window			1 Unit:	15 min	-
Country:	Germany 🗸	Corrected until:		4 2007			
oodniry.	Germany 🔹	Confected diffili.	01.0	11.2007	00:00:00		
Туре:							
Generic	Name			Value			
Datapoint	Start				09 00:00:00		
<ul> <li>Constant</li> </ul>	Comp Level		E	Entry val	ues		
Derived	End		1	21.08.20	09 00:00:00		
Obolinou	Computed until			21.08.20	09 00:00:00		
	Priority		1	Normal			
	Categorization		1	real valu	e		
	Auto calculation		F	False			
	Current Model			True			
	Offset			0			
	Offset Unit		\$	s			
	Details	Counter	Plausibil	lity	Compression	Export	
					ок	Cancel	

3. Enter the general information on the data point.

Do not activate the "Kernel" option.

4. Activate the item "Derived" under "Type" and click on "Details".

The "Derived Measurement" dialog opens.

- Derived	dMeasurement	-		×
From:	21.08.2009 00:00:00	•		
To:	21.08.2009 00:00:00	-		
Calculated until:	21.08.2009 00:00:00	-		
Categorization:	real value			-
Priority:	Normal			-
	Auto Calculation Actual Model			
Comp Level:	Entry values			-
Offset:	0			
Offset Unit:	[s] second			-
	ок	Ca	incel	

- 5. Configure the derived data point as follows:
  - Under "From" and "To", enter a calculation time range.

The "To" time can be in the future.

- The "Calculated until" field shows the time up to which the derived data point is already calculated.
- If you select the "Future values" option under "Categorization", the derived data point is recalculated if the value change time stamp of an assigned data point is in the future.
- If you select the "Current value" option under "Categorization" the derived data point is not recalculated if the time stamp of a value change of an assigned data point is in the future.
- Select the priority.
- Activate "Automatic recalculation" to recalculate the derived data point if new or update values are available.
- If you activate "Current model", the derived data point is calculated based on the current model of the MEVA structure.
- Select a compression level.

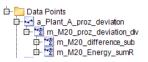
The selected compression level is transferred to the configured measuring variable. This measuring variable calculates based on the values of the selected compression level.

- Enter a value in "Offset" and select the unit, e.g. "6" and "[h] hours".
- Click "OK".
- 6. Click "OK" again.

The derived data point is now generated at the corresponding project tree position.

Ġ~ 🚞	Data Points	
ġ.	🗠 a_Plant_A_proz_devia	tion

7. Copy the required measuring variable, which includes the calculation rule for the derived data point, under the derived data point.



#### Note

Automatic recalculation is discarded in the following situation:

If a derived data point is recalculated manually using the "Recalculate" function, only the actual data point and its directly nested data points are calculated. Any data points at lower levels or data points above the actual data point are not recalculated. This rule is not valid for data points transferred via interfaces.

8. Specify how to calculate the derived measurement.

The following options are available:

- Calculation with a task using Task Management
- Calculation in a report using a module
- Automatic recalculation using the "Recalculate derived measurements" job and activated "Automatic recalculation" option in the data point details.

Result

The derived data point is configured.

See also

Countries (Page 401)

# 4.2.5 Configuring data point versioning

This section provides instructions related to the following actions:

• Configuration of data point versioning

All values are saved along with their date of creation if you are using versioning. By using this function, you limit the view to data on a specific date of creation.

# Requirement

The data point has been properly created and configured.

# Procedure

- 1. Select the data point to be versioned in the Plant Explorer.
- 2. Select the "Edit" command from the shortcut menu of the data point.

# The "Data Point" dialog opens.

<u>~</u>		Measuremen	it - d_A_E	_V_11	7a	_ □	×
Name:	d_A_E_V_117a						٦
Description:							ŷ
Inventory N#:	NO_KKS		ldent. T	oken:			
Process: a_	acq_wincc_PCS7	•	<ul> <li>Active</li> </ul>		Creation Date:	15.10.2008 12:24:11	
Unit: KV	Vh	-	Log to I	DB	Valid at:	15.10.2008 12:24:11	-
Input Unit: 🗌	k///h	-	Kernel		Valid until:	15.10.2008 12:24:11	
Function: Me	easurement	•	Priority	High	Last changed by:	ADMIN	
Versionizing:	No	Replacement	NO			Replace Invalid	ls
Cycle Time:	No Optimized	Calculation Windo	ow.		1 Unit	1 h	•
Country:	Yes	Corrected until:	<b>I</b> 15.	10.200	08 12:24:11 💽		
Type:							
Generic	Name			Value			
<ul> <li>Datapoint</li> </ul>	Name			d_A_E	_V_117a		
Constant	Description						П
Derived	Address			A_E_V	/_117a_counter		
Obolinod	Cycle Time			15 mir	n		
	Driver			trqz_A	SCII_FTP		
	Data Type			dty_flo	at		
	IO Buffer			io_EX0	CELCSV		
	Details	Counter	Plausib	ility	Compression	Export	
9					ОК	Cancel	

3. Select the required versioning type under "Versioning".

#### – No

No versioning. The time set entered last is saved in the system. 01.01.1980 00:00:00 is displayed in the measured value editor as the version date.

Datapoint: d_A_E_V	-		0.0040.00.00							
nterval: Interval from Time	13.08.2010 00: Timezone	Value (	Interval	Duration	MinMaxTime	A.Status	Corr.Status	Comp.Level	Count: Version	192
13.08.2010 00:15:00	summertime	3107	900	900	25.01.2012 11:	STER_OK	valid	Entry values	01.01.1980	
13.08.2010 00:30:00	summertime	3107	900	900	25.01.2012 11:	STER_OK	valid	Entry values	01.01.1980	
13.08.2010 00:45:00	summertime	3107	900	900	25.01.2012 11:	STER_OK	valid	Entry values	01.01.1980	
13.08.2010 01:00:00	summertime	3107	900	900	25.01.2012 11:	STER_OK	valid	Entry values	01.01.1980	
13.08.2010 01:15:00	summertime	3107	900	900	25.01.2012 11:	STER_OK	valid	Entry values	01.01.1980	-
<b>\$</b>	dd Close	Edit	Delete	Refr	resh Filte	r Manu	ual insert	Filter Imp	ort	Export

Yes

All time sets are saved to the system, including the corresponding generation dates. The date and time of the system entry is displayed as version.

atapoint: d_A_E_V											
nterval: Interval from	12.08.2010 00:	00:01 to 13.	08.2010 00:00	0:01					Count:	177	
									Version	^	U
12.08.2010 00:15:00	summertime	3103	900	900	10.03.2014 10:	STER_OK	valid	Entry values	10.03.2014 10:13:34		
12.08.2010 00:15:00	summertime	3103	900	900	10.03.2014 10:	STER_OK	valid	Entry values	10.03.2014 10:13:29		
12.08.2010 00:15:00	summertime	3103	900	900	25.01.2012 11:	STER_OK	valid	Entry values	01.01.1980 00:00:00		
12.08.2010 00:15:00	summertime	3103	900	900	10.03.2014 10:	STER_OK	valid	Entry values	10.03.2014 10:13:38		
12.08.2010 00:15:00	summertime	3103	900	900	10.03.2014 10:	STER_OK	valid	Entry values	10.03.2014 10:22:26	Ŧ	D
	Add		dit	Delete	Refresh	Filter	Manual inse	t Filter	Import	Expo	

#### - Optimized

No new version is assigned as long as the measured values are entered as ascending time set. However, a new version is assigned if the time stamp of the measured values is chronologically older than the values that have been entered previously.

					Measurem	ents			-		×
atapoint: d_A_E_V_ nterval: Interval from	117a 12.08.2010.00:0	00:01 to 13.0	08.2010 00:00	0:01					Count	96	
Time	Timezone		Interval	Duration	MinMaxTime	A.Status	Corr.Status		Version	-	Up
12.08.2010 00:15:00	summertime	3103	900	900	10.03.2014 10:	STER_OK	valid	Entry values	10.03.2014 10:24:47		_
12.08.2010 00:30:00	summertime	3103	900	900	10.03.2014 10:	STER_OK	valid	Entry values	10.03.2014 10:24:47	11	
12.08.2010 00:45:00	summertime	3103	900	900	10.03.2014 10:	STER_OK	valid	Entry values	10.03.2014 10:24:47	11	
12.08.2010 01:00:00	summertime	3103	900	900	10.03.2014 10:	STER_OK	valid	Entry values	10.03.2014 10:24:47	11	
12.08.2010 01:15:00	summertime	3103	900	900	10.03.2014 10:	STER_OK	valid	Entry values	10.03.2014 10:24:47	1	Dw
•	Add Close		dit	Delete	Refresh	Filter	Manual inse	rt Filter	Import (	Export	_

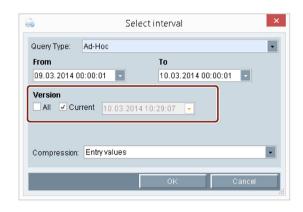
#### Result

You successfully configured versioning for the data point and the function is now ready for use.

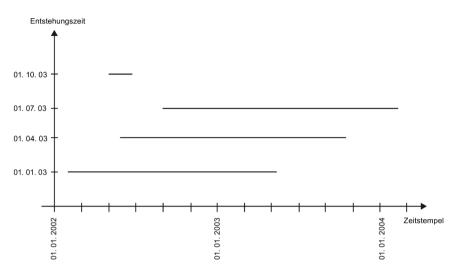
When starting a report or trend, you can use the actual version or a maximum creation date. It is also possible to display all versions in the measured value editor.

<b>X</b> )		Start Report		- 1	
Module Common	Parameter Query Type: Mo	onth	То		•
😓 max_rise		2014 00:00:00 🔹	01.04.201	4 00:00:00 💌	¥
<pre>State_not_ok</pre>	Version	0.03.2014 10:26:29 💌	Model	. : :	]
	Compression Lev Batches:	vel: Entry values		^	
	Keep: Country:	Germany		×	Ţ
Cancel			Back N	ext Sta	rt

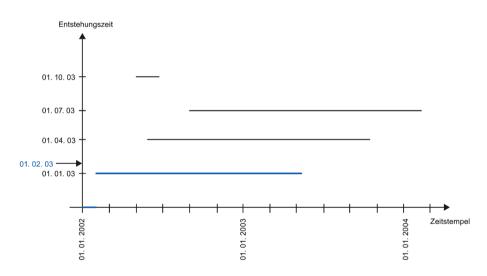
[	×		Т	render		-		×
		Query Type: From 09.03.2014 0 nel nline Kernel	Ad-Hoc	<b>To</b> ■ 10.03.	2014 00:00:01			
	Keep: Compression En level:	Entry values						¥
	9				ОК	Ca	ncel	



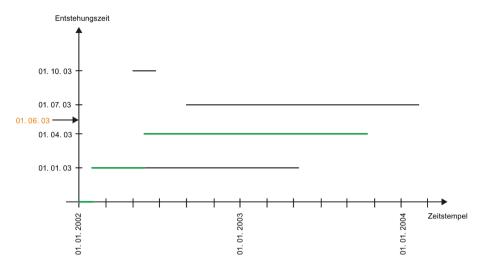
The following example shows up to four dates/times at which data sets have been entered in the system (01/01/2003, 04/01/2003, 07/01/2003, and 10/01/2003)



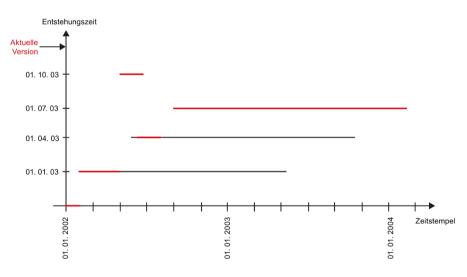
Values used for version date 02/01/2003:



Values used for version date 06/01/2003:



Values used for the "actual version":



# 4.2.6 Configuring substitute value strategies for a data point

#### Overview

The following substitute value strategies are available for closing gaps in measured values or compressed values of a data point:

- You can use the measured values of a different data point to eliminate gaps in the measured value series of a data point.
- You can use fixed values to eliminate gaps in the measured value series of a data point.
- You cannot eliminate gaps in the measured value series of a data point.
- You can use the most recent valid measured value to eliminate a gap in the measured value series of a data point.

#### Requirement

- The data point is configured.
- The measuring journal contains at least one entry for the data point.

# Procedure

1. Click "Edit" in the shortcut menu of the selected data point.

The data point configuration dialog opens.

- 2. Proceed as follows to eliminate gaps in the measured value series of a data point using the measured values of a different data point:
  - Select "PIS" under "Substitute".
  - Insert the other data point underneath the data point that contains the gap.
- 3. Proceed as follows to eliminate a gap in the measured value series of a data point using a fixed value:
  - Select "Substitute value" under "Substitute".
  - Select "Constant" under "Type".
  - Enter the selected substitute value under "Details" and confirm the configuration with "OK".
  - Change back to the original type of the data point.
- 4. Select "NONE" under "Substitute" if you do not want to eliminate the gap in the measurement series of the data point.
- 5. Select "LRU" under "Substitute" if you want use the last valid value to eliminate the gap in the measurement series of the data point.
- 6. Activate "Replace invalid" to replace invalid measured values of the data point with the selected equivalent value strategy.
- 7. Select the time as of which you want to replace the gap under "Corrected until".
- 8. Confirm the configuration with "OK".

# Result

You have successfully configured the substitute value strategy for the data point. Select "Administration > Job queue" to run one of the following jobs for closing gaps with substitute values:

- If you want to close gaps in measured values series: "Job for correcting the measuring journal".
- If you want to close gaps in compressed values: "Job for general recalculation".

#### See also

Using the job queue (Page 371) Database jobs (Page 599)

# 4.2.7 Configuring data point counters

#### Overview

Counters represent operating data points that save count values instead of consumption values as measurement values to the database. In order to enable the correct evaluation of the differentials of these counter values by means of MEVA functions, it is necessary to provide information on the configuration of the count device.

#### Requirement

The data point has been properly created and configured.

#### Procedure

- 1. Select the data point for which a counter is to be created and then select the "Edit" command from the shortcut menu to open the data point configuration.
- 2. The "Measurement" configuration dialog opens. Select "Counter" to open the counter configuration.
- 3. Select the counter type (e.g. active energy) and a location (e.g. consumer 117a).

	Counter							- • ×			
ame:	e_A_E_V_117a										
escription: ocation:						Type:	ype: Active energy				
Dev. Nr.	Description	Installed 10.03.2014 10:32:01	StartVal	Const 1	StartRa 0	EndRa 999999999	WamRa 0	Planned Change 01.01.2500 00:00:00	EndVal	Comm	New
		10.03.2014 10.32.01	0		0	39939999	0	01.01.2500 00.00.00	0		Edit
											Delete
_											
_									04	4	Cancel

#### Note

The "Active energy" counter may only be used for measured values acquired by means of the scanner functionality of B.Data Mobile. The counter type is used for data points that record measured values instead of real count values to provide the device number that is necessary for identification.

4. Click New to to create a new counting device for which the following information is required:

ł	~	Counter Device	-		×
	Device Number:	1			
	Description:	1			
	Installation Date:	10.03.2014 10:32:01 💽			
	Start Value:	0			
	Constant	1			
	Range Start:	0			
	Range End:	99999999			
	Range Warning:	0			
	Replacement	01.01.2500 00:00:00			
	Value at Repl.:	0			
	Comment				
	Manufacturer				
		ок	Са	ncel	

- 5. A consecutive number should be used as counter number (not conditional, serves only for a clear overview). If the counters are read using B.Data Mobile and barcode scanners, enter the barcode of the counting device as counter number.
- 6. The short text that is extended with the counter number is automatically suggested as descriptive text. This description must be unambiguous.

Enter the date of installation. This entry is of particular importance if the system already contains several counting devices and the analysis has to include counters that have been replaced.

Note on counter replacement:

The "Date of installation" of the new counter must be more recent than that of the last value measured with the old counter. Otherwise, the result could be an overflow error.

Starting with installation of the second counting device, the count value is of particular importance to enable proper calculations.

7. The default counter constant is set automatically to the value 1 and can be customized. The resultant difference is then multiplied with this constant.

The value at which the counter starts the count is entered as start value of the counting range and is of importance with regard to the proper calculation of differences upon overflow.

The value at which the counter sets an overflow flag and resumes the count at the start of the counting range is entered as value for the end of the counting range. This, too, is of importance for the proper calculation of differences upon overflow.

The counting range alarm is currently not functional and is merely informative.

In the "Planned Replacements" field, enter the estimated date of counting device replacement. Currently not functional and merely informative.

Starting with the removal of the second counting device, the count value is of particular importance to enable proper calculations.

The "Comments" field can be used to save comments related to the counting device.

- 8. The name of the counting device manufacturer can be saved by entering it in the "Manufacturer" field.
- 9. The counting device data is saved with OK and is used by the respective MEVA functions for calculation of the differential values.

## Result

You have successfully configured the counter configuration of the data point and it is now ready for use.

# 4.2.8 Configuring data point limits

## Overview

Configure the datapoint limits that you want to use to monitor the limits of a measured value. You can configure different datapoint limits in the "Plausibility" dialog:

		Alerts
Upper Limit: 1000		
Lower Limit: 900		<ul> <li>✓</li> </ul>
Max Change: 50		<b>v</b>
Min Change: 10		
Gap Detection: Delay Time 15 [mir	n] minute	
Max diff to DP: e_Gas_Production_2		•
absolute	o [kWh]	
relative	10 [%]	
Max. diff. absolute	10 [KVVh]	
to previous month :	100 [%]	
Max. diff. Oabsolute	10 [kWh]	
to previous year : • relative	100 [%]	
Warning Level: 20 [%]		
	ОК	Cancel

- 1 The high and low limit of a measured value, as well as the maximum / minimum change of a measured value between intervals
- 2 Time window in which it is tested whether the measured value series of a datapoint has gaps.<sup>1</sup>
- ③ Maximum difference of a measured value compared to the measured value of different datapoint
- ④ Maximum difference of a measured value compared to the measured value of the previous month or year
- (5) Warning limit
- 6 Entry in a message list if configured limits are exceeded

<sup>1</sup> Example for datapoint with "15 min" cycle time and "15 min" delay time: The values are tested by the system at the full minute, for example, at 02:30:00 p.m. and not at 02:30:05 p.m. The system checks whether at least one value exists in the measured value series of the datapoint for the last cycle time + period (15 min + 15 min = 30 min), for example, from 02:00:00 p.m. to 02:30:00 p.m. If no value exists, a message is generated. In addition, the affected datapoint is listed under "GAP Detection" in the Service Cockpit.

If the cycle time of a datapoint is less than 1 minute, the number of values is also checked for completeness.

Example for datapoint with cycle time "10 s" and delay time "1 min": The values are tested by the system at the full minute, for example, at 02:30:00 p.m. and not at 02:30:05 p.m. The system checks whether at least one value exists in the measured value series of the datapoint for the last cycle time + period (10 sec + 1 min = 1:10 min), for example, from 02:28:50 p.m. to 02:30:00 p.m. In addition, the number of values is tested for completeness for the last minute, for example, from 02:27:50 p.m. to 02:28:50 p.m. / 6 values per minute at "10 s" cycle time.

# Applications

The limits of the measured values are evaluated for the following applications:

- Matrix in B.Data and in B.Data Web
- B.Data Mobile
- Message lists
- Module type for "Plaus. check deviation reference datapoint" report
- · Module type for "Plausibility check of max. rate of rise" reports
- Module type for "Plausibility check of MIN/MAX" reports

The measured values at which the limits have been exceeded are marked in red color in the matrix and in B.Data Mobile .

# Requirement

The datapoint is configured.

# Procedure

#### Note

#### Subsequent modification of limits

Changes to the limit definitions only affect newly acquired data. Existing data is not updated.

1. Click "Edit" in the shortcut menu of the datapoint.

The datapoint configuration dialog opens.

2. Click "Plausibility".

The "Plausibility" dialog opens.

- 3. Enter the required limits for the measured value.
- 4. To determine gaps in the measured value series of a datapoint, select the desired entry in "Delay Time".

- 5. Proceed as follows to enter the maximum difference to a different datapoint:
  - Select "Active".
  - Select a datapoint.
  - Enter an absolute or a relative value.
- 6. Define a warning limit by entering the requested deviation in percent in the "Warning level" field.
- 7. Activate "Alarming" to generate a message in a message list if configured limits are exceeded.
- 8. Click "OK".

#### Result

You have successfully configured the datapoint limits.

#### See also

Message lists (Page 362) Working with matrixes in B.Data Web (Page 433) Using B.Data Mobile (Page 459) Module overview (Page 478) Service Cockpit (Page 389)

# 4.2.9 Configuring the compression function for a data point

#### Note

The compression of measured values is supported only for data points with function type "Measurement" and "Count value". The "Counter diff. (overflow, change) without range" and "Counter value diff. with overflow, counter change" compression levels are only available for the "Count value" function.

#### Note

#### Activating online compression

To enable compression of the measured values during their import in B.Data, the administrator must activate online compression in B.Data options.

- 1. Click "B.Data options" under "Administration" in the Plant Explorer. The "Administration" dialog opens.
- 2. Click the "Database" tab.
- 3. Enter the value "1" under "PREPROCESSOR\_ENABLE".

## Requirement

The data point is configured.

# Procedure

1. Click "Edit" in the shortcut menu of the selected data point.

The data point configuration dialog opens.

2. Click "Compression".

The "Compression" dialog opens.

3. Click "New" in the "Compression" dialog.

The "Compression" dialog opens.

- 4. Configure the compression settings for the measured values of the data point:
  - Select the compression mode under "Type", e.g. "Compress to maximum".
  - Under "From:" and "To:", select the compression level, e.g. "Acquisition values" and "Hourly values". If you're compressing counter values, always select "Count value" under "From".

When compressing values, you need to change from a higher to a lower compression level, e.g. "Hourly values" to "Daily values".

To expand the values, you need to change from a lower to a higher compression level, e.g. "Monthly values" to "Daily values".

- Under "Activity", select the further procedure for handling the imported acquisition values of the data points on completion of the compression.

#### Note

If you select the "Delete after compression" action, you cannot configure any further compressions on the basis of the acquisition values for this data point.

- Select a date at which compression ends.
- Activate "Active" to activate the configured compression.

	•			Ν	leasurement	- e_Elec	ctricity		>	<
	Nam	ne: cription:	e_Electric	ity						
	Inve	ntory N#:	NO_KKS			Ident. To	ken:			
-					Compressi	on				×
e_Electricity										
Compressi	on	From		То	Active	Ac	tivity (	Compressed until	New	
Sum		Entry val	ues	Daily values	✓	no	activities 0	1.01.2012 00:00:00		_
Compress t	o avg	Entry val	ues	8 hour values	✓	no	activities 0	1.01.2012 00:00:00	Edit	
	OD	erived					Type: From: To: Activity: Comp. until:	Active	Delet	
		_	De	etails Cou	inter	Plausil				-
								OK	Cancel	

5. Confirm the configuration with "OK".

# Result

You successfully configured compression of the measured values of the data point. A separate time column with time stamp is stored in the data point for each configured compression:

- All imported measured values will be compressed if online compression is activated. Incomplete measured values are initially saved to the buffer. Select "Administration > Job queue" to run the "General post-processing job" in order to compress measured values received at a later time.
- Launch the "Job for compressing the measurement journal" under "Administration > Job queue" if online compression is not activated.

# See also

B.Data options (Page 373) Using the job queue (Page 371) Database jobs (Page 599)

# 4.2.10 Configuring the export function for a data point

#### Overview

The export functionality is used to provide measured value sets in a specified format to other system. The result may be a file that contains the measured value sets, table entries, or viewing by means of View VW\_EXPORT\_VIEW.

#### Note

To use View VW\_EXPORT\_VIEW, you must be using your own Oracle version.

Along with the data point configuration, you also need a corresponding database job.

#### Requirement

The data point has been properly created and configured.

## Procedure

- 1. Select the data point for which the export function is to be created and then select the "Edit" command from the shortcut menu to open the data point configuration.
- 2. The "Measurement" configuration dialog opens. Select "Export" to open the export configuration dialog.

-		Export		- 🗆 ×
d_A_E_V_117a				
Function	Function Descripti Filename	Ident. Token	Comment	New
				Edit
				Delete
			ОК	Cancel

3. Click "New" to create a new export function for which the following information is required:

	Exp	port	_ [	×
				_
Name:	d_A_E_V_117a			
Description:				~
				~
Export Function:	b.data Standard 💌 I	dentification Token:	e_A_E_V_1	17a
Filename:	A_E_V_117a			
Comment	ASCII-Export			~
	L			-
		ОК	Canc	el

4. The name and description are transferred from the data point and cannot be edited

Export function: B.Data-Standard, EDM Forecast, PDR (or SAT250 EDM), SAP PM VT historical 6h, SAP PM VVT historical 6h, VIEW

Identification token: Used for identification in the partner system

File name: Name of the output file

Comment: Any descriptive text

5. Click "OK" to generate the export function.

-	-			Export		_ 🗆 ×
	d_A_E_V_117a					
	Function	Function Descripti	Filename	ldent. Token	Comment	New
	b.data Standard	b.data Standard	A_E_V_117a	e_A_E_V_117a	ASCII-Export	Edit
						Delete
					ОК	Cancel

6. Add the "Job for ASCII export B.Data standard" to the job queue to enable execution of the configured export function.

It is not necessary to provide an active job for the VIEW export function, because as soon as a data point has been assigned to this export function, its data can be called by means of View vw\_export\_view.

#### Result

You successfully configured the export function(s) of the data point and these are now ready for use.

# 4.3 Creating prototypes

# 4.3.1 Configuring prototypes

#### Overview

Prototypes represent the basis for loops. The algorithms are predefined and available for further calculations.

#### Requirement

B.Data is properly installed and the "p\_test01" prototype is available.

#### Procedure

- 1. Select the folder in which the prototype is going to be created.
- Click the "Insert Prototype" button in the menu bar under "Processing > Preprocessing". The "Prototype Editor" dialog opens.

<b>B</b>		Prototype Editor - p_add_avg	- • ×
Name: p_	_add_avg		
Description: Ac	ddition prototyp	e	^
			×
prototype p_add	_avg(out outpu	; in input1 , in input2) {	
local:			
zw1; implementatio	•	Edit Prototype Parameter 🛛 – 🗖 🗙	
zw1 := inpi output := a	Prototype: p	_add_avg	
output u	Name:	output	
	Description:	result of addition	
}			×
		×	
Parameter Name	In/Out:	out 🔹	New
output	Index	1	Edit
input1		OK Cancel	Delete
input2			Delete
			Up
			Down
<b>#</b>		ок	Cancel

3. Enter the prototype name in the "Name:" input field. The "p\_" prefix must be added for prototype identification. You may enter additional information on the prototype in the "Description:" field. Specify the prototype's response by means of MCL declaration. Enter

# 4.3 Creating prototypes

all necessary I/Os in the parameters. Click "New" and enter the "Name" and "Description". Select the output (out) or input (in) type and the order of transfer. Confirm your entries with "OK".

4. Once you have added all necessary I/O parameters, save the new prototype with "OK".

			1100	otype Editor - p_add_a	avg		
Name:	p_add_av	g					
Description:	Addition p	rototype					^
							V
prototype p_	_add_avg(ou	it output, in	input1, i	in input2) {			
	tation: nput1+input: = avg(zw1,6(		);				^
							~
Parameter		Nr	1/0	Description		bleu	~
Parameter Name		Nr.	I/O out	Description result of addition		New	~
<b>Parameter</b> Name output						New Edit	~
Parameter Name output input1		1	out	result of addition			~
Parameter Name output input1		1	out in	result of addition 1. value to add up		Edit	~
Parameter Name output input1		1	out in	result of addition 1. value to add up		Edit	
Parameter Name output input1 input2		1	out in	result of addition 1. value to add up		Edit	
Parameter Name output input1		1	out in	result of addition 1. value to add up		Edit Delete	

 Select "Edit" to edit existing parameter names and declarations. You may select "Delete" to delete parameters, or change their order with "Up" or "Down" (use with caution for existing loops).

#### Result

A new prototype is available and can be used to configure new loops.

#### See also

Operations for generating calculation blocks (prototypes) (Page 522) Description of MCL (Page 532)

# 4.4 Creating loops

# 4.4.1 Configuring loops

#### Overview

This section provides instructions related to the following actions:

- Creating loops
- Configuring loops

## Requirement

The necessary data points and prototypes have been successfully created in the system.

## Procedure

- 1. Select the folder in which the loop is going to be created.
- Click the "Insert Loop" button in the menu bar under "Processing > Preprocessing". The "Loop" dialog opens.

e		Loop -	l_add_avg		_ <b>□</b> ×
Name: I_add Description:	I_avg				<b>^</b>
Process: a_acq_ Prototype: State: ✓ Active Parameter		×			3.2014 10:47:41 💌
Parameter	WO	Measurement	Unit		Assign Release Mcl
			ОК	Apply	Recompile

3. Enter the loop name in the "Name:" input field. The "I\_" prefix must be added for loop identification. You may enter additional information in the "Description:" field. If available, you may also enter a KKS or FIS number as inventory ID. The current time is set by default for the date of initial creation of the loop. The logged on user is automatically entered in the "User:" field. Select the process that is to run the loop in the "Process:" field. This selection assigns the loop to a specific hardware. A separate process is usually

# 4.4 Creating loops

created for loop calculations. Set the ACTIVE state in the "State:" field and select the "Active" check box.

4. Confirm your entries with "OK".

The configuration dialog is closed. The server object is now generated at the corresponding tree position.

다. Calculation Level I Loop / Prototype 다 ᇶ Ladd\_avg

5. Copy the necessary prototype and the data points/constants to be processed to the new loop structure.

```
Calculation Level I Loop / Prototype
Calculation Level I Loop / Prototype
Calculation Level I Loop / Prototype
Calculation
Calculatio
Calculation
Calculation
Calculatio
Calc
```

6. Select the new loop. Select "Edit..." from the shortcut menu.

The loop configuration dialog opens.

7. Select the prototype in the next step.

10		Loop	- I_add_avg		- 🗆 🗙
Name: I_add Description:	_avg				<b>^</b>
Process: a_acq_ Prototype: p_add_ State: <ul> <li>Active</li> </ul>	avg	×	Invento	ny N#: Date: 11.09.2008	12:50:05 💌
Parameter	1/0	Measurement	Unit		Assign
output input1 input2	out in in				Release McI Recompile
9			ОК	Apply	Cancel

The dialog displays the parameters and their type, depending on the respective prototype.

8. The real data points and constants are assigned to the parameters in the next step. Select the parameter to be assigned a measurement and click "Assign".

ਵੋਰ	Loop - I_add_avg	- 🗆 ×
Name: L_add_avg Description:		<b>^</b>
Process: a_acq_OPC Prototype: p_ac	Select a Measurement -	0:05 🔹
Parameter Parameter output input1 input2	OK Cancel	Assign Release
		McI Recompile
9	OK Apply	Cancel

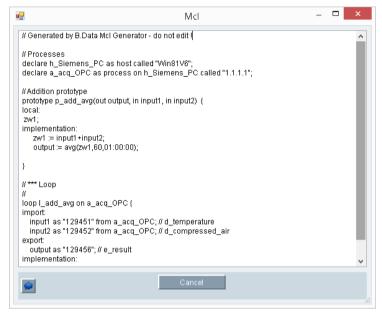
9. The next window displays all measurements that are available. Select a measurement and confirm this with OK.

<b>₹</b> €			Lo	op - I_add_	avg		- 🗆 ×
Name:	l_add_av	g					
Description	r.						<u>^</u>
Process:	a_acq_OPC	>	•		Inventor	y N#:	
Prototype:	p_add_avg		-		I	Date: 11.09.2008	12:50:05 🚽
State:	<ul> <li>Active</li> </ul>						
Parameter							
Paramete	r	I/O	Measurement		Unit		Assign
output		out	e_result				Release
input1		in	d_temperature		1		
input2		in	d_compressed_	air	1		
							-
							Mci
							Recompile
9				ОК		Apply	Cancel

The loop configuration is completed once you have assigned all data points or constants to the respective parameters. Exit the dialog with "OK".

# 4.4 Creating loops

10.You can click "MCL..." to check the appearance of the loop in the MCL language and how it is compiled by the B.Data kernel.



11. The "Recompile" function can be used at runtime to modify an existing or active loop. Example: A different scaling factor needs to be assigned because it has been changed in the PLC.

#### Result

You have now configured a loop that is compiled during restart by the responsible kernel, saved to an mcl file, and assigned values that are calculated online.

# 4.5.1 Basics on the measured value editor

#### Overview

The measured value editor is used to view and edit measured values or enter new ones. The measured value editor supports data export, as well as data import from ASCII files.

# Requirement

- The data points to be used for visualization have been successfully created in the system.
- Data is available for the query period.

# 4.5.2 Opening the measured value editor

## Procedure

- 1. Select the data point for which you want to request the measured data.
- 2. Select the "Edit measured values" command from the shortcut menu of the data point.

#### The dialog for defining the query period opens.

6	Sele	ct interval		>
Query Type:	Ad-Hoc			-
From		То		
11.08.2010 00	0:00:00 💽	13.08.2010 0	0:00:00 🔽	
Version				
All 🗹 Cur	rent 10.03.2014	10:54:27 💌		
All Cur	rent 10.03.2014 Entry values	10:54:27 💌		٠
		10:54:27 🔹		×

- 3. Enter a start time in the "FROM" field.
- 4. Do not change the default "AdHoc" setting in the "Polling type" field if you want to enter an individual end time. Enter the end time in the "TO" field. Otherwise, the end time is set automatically in the "TO" field, depending on the selected "query type". The time range is rounded at the same time, depending on the query type.
- 5. If recorded data has been versioned, you can enter corresponding settings in the "Version" field.
- 6. Activate "All" to include all available data in the calculation.
- 7. Enter a time if you select the "Current" option in order to use only the data that was available in the system prior to the defined time for calculations.
- 8. Save your entries with "OK".

# Result

The measured value editor opens.

Time	Timezone	Value (kWh)	Interval	Duration	MinMaxTime	A.Status	Corr.Status	Comp.Level	Version	<b>^</b>
1.08.2010 00:15:00	summertime	30987160	900	900	25.01.2012 11:	STER_OK	valid	Entry values	01.01.1980 00:00:00	
1.08.2010 00:30:00	summertime	30987317	900	900	25.01.2012 11:	STER_OK	valid	Entry values	01.01.1980 00:00:00	
1.08.2010 00:45:00	summertime	30987475	900	900	25.01.2012 11:	STER_OK	valid	Entry values	01.01.1980 00:00:00	
1.08.2010 01:00:00	summertime	30987631	900	900	25.01.2012 11:	STER_OK	valid	Entry values	01.01.1980 00:00:00	
1.08.2010 01:15:00	summertime	30987785	900	900	25.01.2012 11:	STER_OK	valid	Entry values	01.01.1980 00:00:00	
1.08.2010 01:30:00	summertime	30987940	900	900	25.01.2012 11:	STER_OK	valid	Entry values	01.01.1980 00:00:00	
1.08.2010 01:45:00	summertime	30988095	900	900	25.01.2012 11:	STER_OK	valid	Entry values	01.01.1980 00:00:00	
1.08.2010 02:00:00	summertime	30988250	900	900	25.01.2012 11:	STER_OK	valid	Entry values	01.01.1980 00:00:00	
1.08.2010 02:15:00	summertime	30988403	900	900	25.01.2012 11:	STER_OK	valid	Entry values	01.01.1980 00:00:00	
1.08.2010 02:30:00	summertime	30988559	900	900	25.01.2012 11:	STER_OK	valid	Entry values	01.01.1980 00:00:00	
1.08.2010 02:45:00	summertime	30988717	900	900	25.01.2012 11:	STER_OK	valid	Entry values	01.01.1980 00:00:00	
1.08.2010 03:00:00	summertime	30988872	900	900	25.01.2012 11:	STER_OK	valid	Entry values	01.01.1980 00:00:00	
1.08.2010 03:15:00	summertime	30989029	900	900	25.01.2012 11:	STER_OK	valid	Entry values	01.01.1980 00:00:00	-

The data point identifier and the selected interval are displayed on the top left. Click "Up" or "Down" to page the monitoring interval up or down by one step.

Select "Refresh" to reload the selected time range from the database.

Select the "Insert", "Edit", "Remove", or "Manual Input" buttons to insert, edit, or delete values.

Click "Close" to exit the measured value editor.

# 4.5.3 Manipulating values

#### Overview

This section provides instructions related to the following actions:

- Inserting, editing, and deleting values
- Manual input
- Data structure for measured values
- Acquisition status
- Correction status

#### Procedure

- 1. To delete one or several measured values, select these accordingly and then click "Delete".
- 2. To edit a measured value, select it accordingly and then click "Edit".

a.D4 EditMe	easurement – 🗆 🗙	
Timestamp:	11.08.2010 00:15:00 💌	
Time zone:	summertime 👻	
Value:	30987160	
Interval:	þoc	
Duration:	900	
MinMax Timestan	np: 📝 25.01.2012 11:31:05 🔤	
Text:		
Dataaquisition st	ate: STER_OK	
Corr. state:	valid 🗸	
Comp. level:	Entry values 🗸	
	OK Cancel	1

3. Edit the selected values and click "OK".

The "Corr.Status" entry is toggled automatically to "valid with manual manipulation".

This result is displayed in orange color in all evaluations using this corrected value for calculations. This functionality allows you to clearly determine whether the result was modified by means of system input or manual manipulation.

4. Click "Manual input" if you want to supplement specific values.

The "Manual data input" dialog box opens.

B.D/A		Manual	inserting data		-		×
New ma	nual data						
From:	11.08.2010 00:00:00	To:	13.08.2010 00:00:00				-
Value:		0,00 Timezone:	summertime				•
Interval:	15 min	Compr.:	Entry values				-
				ОК	Ca	ncel	

- 5. Supplement the data of the new value as follows:
  - Enter the selected period in the "FROM / TO" fields.
  - Enter the "Value".
  - Select the "Interval".
  - Enter the "Time Zone" and compression ("Compr.").
- 6. Click "OK".

# Result

All values entered, edited, or deleted in this way will be logged in the Logging Editor.

All values are saved to the B.Data system, including the following data.

- Time stamp
- Time zone (daylight saving time)
- Value
- Interval (in seconds).
- Duration (in seconds).
- MinMaxTime (entered only by few functions)
- Text (a data point configured for text input is entered in this field)
- Acquisition status (entered by the data acquisition function)
- Correction status (manual manipulation, adjustment jobs,..)
- Compression level (acquisition values; other compression levels are not generated until a compression is carried out.)
- Version date (if the data point is not configured for versioning, the version is always entered with the time stamp 01.01.1980 00:00:00)

Possible acquisition states

- STER\_OK
- STER\_INVALID
- STER\_CONFUSE
- STER\_GAP
- STER\_FIRST
- STER\_FIRST\_INVALID
- STER\_FIRST\_CONFUSE
- STER\_FIRST\_INVALID\_CONFUSE
- STER\_LAST
- STER\_LAST\_INVALID
- STER\_LAST\_CONFUSE
- implemented in the NLS
- DB update locked in the NLS
- Calculated process value
- Invalid in CAD
- Adjusted in CAD
- Application-specific
- Outliers
- Substitute value

Possible correction states:

- Valid
- Invalid
- Corrected with LRU
- Corrected with substitute measurement
- Corrected with substitute value
- Valid with manual manipulation
- Valid corr. with LRU and manual manipulation
- Valid corr. with substitute m. and manual manipulation.
- Valid corr. with substitute v. and manual manipulation.
- Import
- Invalid import
- Import valid, corr. with LRU
- Import valid, corr. with substitute measurement
- Import valid, corrected with substitute value
- Import valid with manual manipulation
- Import valid, corrected LRU+manual manipulation.
- Import valid, corr. with substitute m.+manual manipulation.
- Import valid, corr. with substitute v.+manual manipulation.
- Corrected

# 4.5.4 Filtering in the measurement value editor

## Filter options

Use the filter function for fast access to information. Click "Filter" in the measurement value editor to open the "Filter" dialog.

B.DP		Filter	- 🗆 ×
Value [kWh]	× > •	20	AND -
Interval	• = •	900	•
Time	<b>•</b>	10.03.2014 10:59:10	-
Time	<b>•</b> = <b>•</b>	10.03.2014 10:59:10	
		ОК	Cancel

Select the column from the first list. Select the operator from the second list. Additional entries are available in the third column, depending on the entry you selected in the first column. You may also logically link the filters by setting an "AND" or "OR" operation in the fourth column.

Click "OK" to activate the filters. The result is displayed in the measurement value editor. Uncheck the "Filter" check box to cancel filtering.

# 4.5.5 Exporting and importing process data

## Overview

This section provides instructions related to the following actions:

- 1. Exporting data
- 2. Editing data
- 3. Importing data

# Requirement

The measurement value editor is open.

# Exporting data

1. Select the data in the measurement value editor and click "Export".

The Save As... dialog opens.

2. Select a target folder and specify a file name. Click "Save".

The selected data is saved to a text file in B.Data standard format.

#### Note

Version information is not included in the export data. Data of older versions that you export and then re-import is always imported to the current version.

Data export is logged in B.Data . A corresponding export object is generated in the "Import/Export" folder. The data point whose values were exported is inserted under the export object.

# Editing data

1. Double-click on the export object to edit it.

The export object will be opened in the corresponding application, e.g. Notepad or Microsoft Excel.

2. Edit the selected data and save it again to a file in \*.TXT or \*.CSV format.

Microsoft Excel replaces the separator ";" with a tab character.

# Importing data

1. Click "Import" in the measurement value editor.

The "Open" dialog opens.

2. Select the file in B.Data standard format and click "Open".

The data is now imported.

If the data point is configured for saving values with versioning: All values entered are assigned a new version. If you import the data of a different data point, the following message is output: "Caution: MeasID inconsistent. Do you want to continue?" Confirm this prompt with "Yes", or cancel the import with "No". The purpose of this message is to prevent unintentional overwriting of the data of a wrong data point.

A plausibility check of the data is discarded if you run the import using the "Edit > Import measured values" command from the B.Data menu bar.

The "Update type" dialog is opened if the data point is configured so that the data is saved without versioning.

B.D/	Update type	_ □	×
INSERT			
INSERT or	nly new records		
INSERT ar	Id UPDATE		
	ОК	Cancel	

- 3. Select the option:
  - "INSERT": Inserts only values that are not yet available in the database.
  - "INSERT only new values": Inserts only values that are not yet available in the database. Use this option whenever possible when importing large data volumes.
  - "INSERT and UPDATE": inserts new values and overwrites existing ones.

#### Result

On successful completion of the import, a message such as "Inserted 24 of 24 data records" is displayed.

Data import is logged in B.Data . A corresponding import object is generated in the "Import/Export" folder. The corresponding datapoint is inserted under the import object.

🛱 🛅 Import/Export
d_A_E_V_117a
□- ■→ Import BDATA_SYS (25.02.2014 17:32:49)

# 4.5.6 Configuring a matrix

## Overview

Use the "Matrix" object to manually enter B.Data and B.Data Web data. This section provides instructions related to the following actions:

- 1. Configuring matrix objects
- 2. Assignment of datapoints
- 3. Possible datapoint configurations
- 4. Data input

# Requirement

Datapoints have been created.

## Configuring matrix objects

- 1. Select the folder in which the matrix object is going to be created.
- Click the "Insert Matrix" button in the menu bar under "Acquisition > Manual Acquisition". The configuration dialog of the matrix object opens.

IJ	Matrix - Supply	- 🗆 ×
Name: Supp	lly	
Description:		^
		×
Query Type: Mo	nth	•
From	То	
01.08.2010 00:00	01.09.2010 00:00:00 💌	
Text Type:	Name	🗹 Web Insert
Cycle Time:	15 min 🔹	Plausibility
Corr. State:	valid	Transposed
Charge Values:	d_A_E_V_116a_counter	Acyclic
Comp Level Filter:	Entry values	
	Edit Values	
	ок	Cancel

3. Enter a "Name", an optional "Description", and the Query type".

The query type determines the time horizon that is displayed in the matrix. Example: You have entered daily values in the course of a week. In this case, the query type used is "Week", and the "Cycle time" is 1 d for the days. The system automatically calculates the "FROM / TO" time period.

4. Select the datapoint entry to display in the matrix header from the "Text Type:" list box.

- 5. Select the "Cycle Time: as required. Ensure that this cycle time matches the cycle time of the datapoint.
- 6. Adjust the "Corr. Status:" entry if applicable.
- 7. Select the "Web Insert" check box to enable user input of values via the Web.
- 8. Select the "Plausibility" check box if you want to enable the plausibility check function.
- 9. Select the "Transposed" check box if you want to change the time axis from vertical to horizontal mode. The same procedure applies to the datapoint name.
- 10.Select the "Acyclic" check box to enable the input of batch-related data in the matrix. Select the datapoint that contains the batch information from the "Charge Values" list box.
- 11.Click "OK" to create the matrix object in B.Data.
- 12.OK input saves the settings to the database and creates an object in the B.Data system.

ģ 📄	Manual Data Collection
i di-	📑 Supply

13.Assign the datapoints to the matrix in the conclusive step. Ensure that this cycle time matches the cycle time of the datapoint.

🖕 🛅 Manual Data Collection
🖨 💷 Supply
d_OPC_xxxDatapointName15s_1xxxx
d_OPC_xxxDatapointName15s_2xxxx

Provided the "Plausibility" function has been enabled, the "high limit" and "low limit" are used to check the plausibility of the datapoint configuration in the matrix.

The following function types of the datapoint will affect the matrix:

- "Event Measurement T1 spontaneous", "Event Measurement T1 cyclic", and the definition of the datapoint that contains the batch information
- "Text": The values entered are saved to a text field.
- "Priority high": Although you may enter values in this datapoint, it is not possible to edit these values using the matrix.

#### Background: Batch-related data

To enable the display of batch information in a datapoint, select one of the following entries in the "Function" list box:

- "Event Measurement T1 spontaneous"
- "Event Measurement T1 acyclic"

•	Measurement - d_Reactor_1_Ten	np_1	- 🗆 🗙
Name: d_Reactor_1_Temp_1			
Description:			^
			~
Inventory N#: NO_KKS	Ident. Token:		
Process: a_acq_OPC	- Active	Creation Date: 20.10.2	008 08:36:50
Unit: •C	Log to DB	Valid at: 20.10.2	008 08:36:50 💽
Input Unit: 📃 ° C	✓ Kernel	Valid until: 01.01.2	500 00:00:00
Function: Event measurement T1 spo	ntaneous Priority High		

The data is stored in the datapoint (Event Measurement T1 spontaneous) as follows:

Time stamp	Value
01.02.2008 14:32	0
01.02.2008 15:12	1
01.02.2008 18:20	0
01.02.2008 21:10	1

Each changing value defines the end or start of a batch. In a scenario as mentioned above, values may be defined for the following time ranges in the matrix.

- 01.02.2008 14:32 01.02.2008 15:12
- 01.02.2008 15:12 01.02.2008 18:20
- 01.02.2008 18:20 01.02.2008 21:10

The data is stored in the datapoint (Event Measurement T1 cyclic) as follows.

Time stamp	Value
01.02.2008 14:32	0
01.02.2008 14:33	0
01.02.2008 14:34	1
01.02.2008 14:35	1
01.02.2008 14:36	0

In this case, it is possible to define values for the following time ranges in the matrix.

- 01.02.2008 14:32 01.02.2008 14:34
- 01.02.2008 14:34 01.02.2008 14:36

The values entered are written to the database with "TO" time stamp and are therefore available for further evaluations.

# Data input via matrix

- 1. Double-click the matrix object to enter the data in the matrix.
  - The configuration dialog of the matrix object opens.
- 2. Click "Input Values" to create the matrix based on the time stamps and connected datapoints.

A separate column is generated for each datapoint connected to the matrix node.

ROM 01.08.2010 TO 0	1.09.2010	<< Previous Page Next Page >>
	d_OPC_xxxDatapointName15s_1xxxx [.]	d_OPC_xxxDatapointName15s_2xxxx [kW]
01.08.2010 00:15:00	275	250
01.08.2010 00:30:00	280	255
01.08.2010 00:45:00	260	253
01.08.2010 01:00:00	100	254
01.08.2010 01:15:00	244	251
01.08.2010 01:30:00	240	251
01.08.2010 01:45:00	243	252
01.08.2010 02:00:00	251	248
01.08.2010 02:15:00	250	246
01.08.2010 02:30:00	1 000	245
01.08.2010 02:45:00	242	2 000
01.08.2010 03:00:00	241	246
01.08.2010 03:15:00	240	243
01.08.2010 03:30:00	243	800
01.08.2010 03:45:00	239	241
01.08.2010 04:00:00	244	239
01.08.2010 04:15:00	254	246
04-00-2040-04-20-00	262	207
)1.08.2010 00:15:00 / d_	OPC_xxxDatapointName15s_1xxxx [.]	🗌 Mark Changes 📃 Copy With Header

3. Enter the values in the fields provided for this purpose.

Provided the "Plausibility" option has been set in the matrix configuration dialog, the bottom area of the input dialog for the active field displays the valid scope along with the datapoint name. Value entries outside the valid range are marked in red color (see above). A corresponding message notifies you of this situation: "Value 8 must be >= 20!".

4. Click "Apply" to save your changes to the database.

The result is displayed below the "Apply" button. Example: "5 values inserted, 0 values updated, 0 values removed."

- 5. Use the "Page up" and "Page down" keys to modify the monitoring period. The corresponding values are loaded from the database.
- 6. Assign the value 1 to the name "TimestampsAlignLeft " in "B.Data Options > Appl." in order to switch the representation in the matrix to the valid range.

FROM 01.08.2010 TO 01.09.2010				
Date	d_OPC_xxxDatapointName15s_1xxxx [.]			
01.08.2010 00:00:00 - 01.08.2010 00:15:00	275			
01.08.2010 00:15:00 - 01.08.2010 00:30:00	280			
01.08.2010 00:30:00 - 01.08.2010 00:45:00	260			
01.08.2010 00:45:00 - 01.08.2010 01:00:00	100			
01.08.2010 01:00:00 - 01.08.2010 01:15:00	244			

The time stamp representation is setup by default: TimestampsAlignLeft = 0.

FROM 01.08.2010 TO 01.09.2010				
Date	d_OPC_xxxDatapointName15s_1xxxx[.]			
01.08.2010 00:15:00	275			
01.08.2010 00:30:00	280			
01.08.2010 00:45:00	260			
01.08.2010 01:00:00	100			
01.08.2010 01:15:00	244			

These settings are valid for B.Data and B.Data Web.

# See also

B.Data options (Page 373)

Calculation level 1 "The loop concept"

4.5 Manual data acquisition

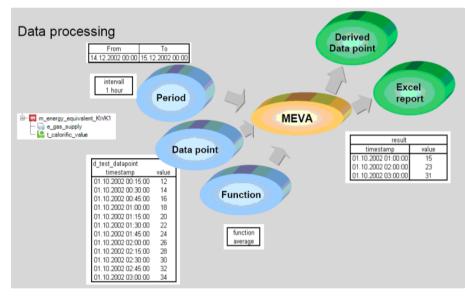
# Calculation level 2 "The MEVA concept"

# 5.1 Introduction

A measurements variable, also known as MEVA in the system, forms the basis for calculating the various parameters in the analyses and reports.

# **MEVA concept**

A MEVA describes the linking of one or several operating data sets, parameters or other measurement variables to the corresponding evaluation algorithm. The MEVA is calculated when a report is requested. This means that instead of providing pre-calculated accumulated process data in the database, the results of the calculation are returned on request and within a defined evaluation period.



The outstanding advantage of this concept is that the MEVAs are only calculated for the data sets that are needed for analysis within a specific evaluation period. This approach leads to a drastic reduction of database memory and archiving requirements.

# 5.1 Introduction

The results of the MEVAs can be written to derived data points or be visualized directly in MS Excel. The quality of the values is color coded.

The mathematical rules are configured and represented directly in the Plant Explorer by arranging MEVA functionalities in a successive order.

Monometric Strom Market Strom Arbeit Strom Arbeit Strom Arbeit 1	Consumption area A	d_data_point_1 timestamp 01.03.2008 00:15 01.03.2008 00:45 01.03.2008 01:00 - 01.03.2008 01:00	value 9,000 9,120 9,320 9,530 -9,720
⊖ m_Gesamtkosten_Strom_mulb1 ⊕ m_m_Gesamteinspeisung_add1 ⊕ m_m_Preis_Strom_Arbeit_para		1 01.03.2008 01:30 1 01.03.2008 01:45 01.03.2008 02:00 01.03.2008 02:15 01.03.2008 02:30 01.03.2008 02:45	9.900 20 210 370 570 790
Total costs =	Consumption area B	d_data_point_2 timestamp 01.03.2008 15:00 01.03.2008 15:15 01.03.2008 15:35 01.03.2008 15:45 01.03.2008 16:00	value 80 120 200 210 190
	 ett — 🛄 m_Einspeisung_2_sumR 25 — — 🗔 d_A_EV_118a2	01.03.2008 16:15 01.03.2008 16:30 01.03.2008 16:45 01.03.2008 17:00 01.03.2008 17:15 01.03.2008 17:30	180 240 140 160 200 220

# 5.2 Creating parameters

# 5.2.1 Configuring parameters

### Overview

This section provides instructions related to the following actions:

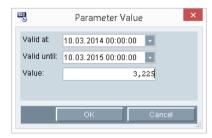
- Creating parameters
- Configuring parameters
- Reading parameters by means of Meva

### Procedure

- 1. Select the folder in which the parameter is going to be created.
- Click the "Insert Parameter" button in the menu bar under "Processing > Calculation". The "Parameters" dialog opens.

			Parameter - t	price_electrica	al_energy	-
Name:	t_pric	e_electrica	al_energy			
Description:						
ReplacementVa	ilue:		β,225		Unit: ct/KWh	
Valid from V	/alid until	Value	Changed at	Changed by		New
						Edit
						Delete
					ок	Cancel

- 3. Enter a meaningful name (t\_xxx) and a description (optional). If you enter the substitute value 3.225, i.e., as long as no valid values have been defined, the value 3.225 is always returned for this parameter.
- 4. Click "New" to open the dialog for editing the parameter values.
- 5. Define the "Value" and the duration of validity. Save and confirm your entries with "OK".



### 5.2 Creating parameters

 The value entered is now displayed, can be edited using the "Edit" function, and be deleted again with "Delete". Moreover, you can add new values for additional time ranges.

1	10	Parar	neter - t_p	orice_electrical_en	ergy	-		×
	Name:	t_price_electrical_ene	rgy					
	Description:							$\hat{\mathbf{v}}$
	ReplacementValue:	3,	,225		Unit: EUR/kWh			•
	Valid from $ extsf{ }  ext$	Valid until	Value	Changed at	Changed by		New	
	10.03.2014 00:00:00	11.03.2014 00:00:00	3,225	10.03.2014 11:26:02	Admin			
	11.03.2014 00:00:00	10.03.2015 00:00:00	3,65	10.03.2014 11:25:53	Admin		Edit	
							Delete	
	9				ОК		Cancel	

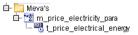
7. Click "OK" to generate the parameter with the defined values.

When making changes to the values, you need to recalculate the reports that access the valid range of these values.

In addition, you need MEVAs that read the parameter values and provide these for calculation or output.

🛅 Measur	ing Variable - m_price_electricity_para 🛛 – 🗖 🔜	×
Name:	m_price_electricity_para	
Description:	· · · · · · · · · · · · · · · · · · ·	^
		~
KKS:		
Function Type:	Parameter	- N
r difetion rypo.	Parameter Details	
Unit:	ctkWh	•
		•

8. Enter a meaningful name (m\_xxx) and a description (optional). Select "Parameter" as function type. In order to deduct the function directly from the MEVA name, this name should have the ending "\_para". Save and confirm your entries with "OK".



9. Connect the parameter to the MEVA node in order to complete the MEVA configuration.

### See also

Configuring measurement variables (Page 187)

# 5.3 Configuring measurement variables

# Overview

This section provides instructions related to the following actions:

- Creating a MEVA
- Configuring a MEVA

# Requirement

The necessary data points and parameters have been successfully created in the system.

# Procedure

- 1. Select the folder in which the MEVA is going to be created.
- Click the "Insert Measuring Variable" button in the menu bar under "Processing > Calculation".

#### The "Measurement Variable" dialog opens.

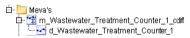
1 Measuring	Variable - m_Wastewater_Treatment_Counter_1_cdiff	×
Name:	m_Wastewater_Treatment_Counter_1_cdiff	٦
Description:		^
		$\checkmark$
KKS:		
Function Type:	Counter Difference Light incl. overflow handli 💽 Details	
Unit:	m <sup>3</sup>	-
Compression Level:	Entry values	•
	OK Cancel	

- 3. Enter the MEVA name in the "Name:" input field. The "m\_" prefix must be added for MEVA identification. You may enter additional information on the MEVA in the "Description:" field. If available, you may also enter a KKS or FIS number as inventory ID. Select a processing routine as function type (click Details to view a short description of the function). Select the unit that is derived from the processing routine and sublevel data points or MEVAs.
- 4. Confirm your entries with "OK".

The configuration dialog is closed. The server object is now generated at the corresponding tree position.

ഥ⊢ 📴 Meva's ഥ⊢ 🛅 m\_Wastewater\_Treatment\_Counter\_1\_cdiff

5. Copy the data points, parameters, or MEVAs to the new measurement variable.



### Calculation level 2 "The MEVA concept"

5.3 Configuring measurement variables

### Result

You have now configured a MEVA that you can use for further processing in reports or derived data points.

# See also

Database functions for measurement variables (Page 535)

# Calculation level 3 "Report and visualization concept"

# 6.1 Basic information on calculation level 3

### Definition

"Calculation level 3" denotes the time-independent processing and visualization of measuring values in reports. You can use Microsoft Excel or Microsoft Word to visualize the reports.

You can process the data exported from B.Data using the entire functionality of Microsoft Excel or Microsoft Word, for example, statistical functions such as correlation or regression analysis from Microsoft Excel. You can also process the result data using graphics or diagrams.

# Application

"Calculation level 3" supports you in the following activities:

- Creation of company-specific reports for all departments and information demands.
- IT-related, system-wide analysis of different business units for holistic assessments of your company.
- The workflow system of B.Data reduces your staff's workload:
  - Automatic and cyclical calculation of performance indicators and accounting results (task management).
  - Automatic generation of standard analyses for predefined periods, e.g. day, month, shift, year.
  - Automatic sending of evaluations to printers in the company-wide printer network.
  - Automatic dispatch of analyses and accounting bases by means of email attachment to internal and external recipients of the business unit.

When generating reports, you can always access previous configurations (historicization), or different measured value versions (versioning).

# Configuration

Specify the following when configuring reports:

- Query type: Time range that is queried in the report.
- Module: Visualization of the report in Microsoft Excel or Microsoft Word.

Each module is provided with values from its assigned measuring variables. Once the template has been generated, the final report result is stored in the project tree under the selected query type, and can be called with a double-click.

6.1 Basic information on calculation level 3



- ① The report employs the module "Comparative accounting" ② and query type "Month" ③ for the analysis.
- ② The module is provided with values from two measuring variables that calculate the measuring values by means of the database function "Multiplication of n Mevas".
- ③ Results of the report that was generated twice are stored at the query type.

# 6.2 Creating a report

# 6.2.1 Basics on reports

#### Overview

You can visualize or process the measured values that have been acquired in B.Data. B.Data generates the reports in files, in the Microsoft Excel or Microsoft Word format. The visualization of the values as a table of diagram is always based on the functionality of Microsoft Excel. Reports in Microsoft Word use embedded Excel object to visualize the values.

In both applications, all formatting and elements can be used to design the reports.

Reports can be generated manually or automatically, dispatched by email, print it, save to a file server, and view in B.Data.

Report results are stored in the structure tree of Plant Explorer. The name of report results consists of the name, calculation period and the creation date.

You can use the predefined reports provided in B.Data as the basis for your project. The default reports are available in "Customer > Reports".

### Components for creating reports

You need a query type and a module to create a report.

Use a query type specify the time range of report and to configure automatic reporting.

Use a module to specify how the acquired measured values will be calculated and visualized. The following module types are available:

- Query module: Returns values without calculation, e.g. the measured values of a month on a daily basis.
- Balancing module: Returns a value for a time period, e.g. the monthly energy costs.
- Protocol module: Returns values for all intervals of a time period, e.g. the monthly energy costs on a daily basis.

Certain modules need additional parameters when you start a report. A protocol module, for example, needs interval as start parameter.

### Procedure for creating reports

Proceed as follows to create a report:

- 1. Create a report.
- 2. Configure a query type and a module for the report.
- 3. Configure a template for the report.

- 4. Enter the reported values.
- 5. Generate the report.

# See also

Creating a report (Page 193) Configuring the query type for a report (Page 195) Configuring a module for reports (Page 199) Configuring a template for an Excel report (Page 204) Entering values in reports (Page 214) Opening report results (Page 219) Using B.Data Web (Page 415) Display modes (Page 519)

# 6.2.2 Creating a report

# Procedure

- 1. Select the folder in which the report is going to be created.
- In the menu bar under "Analysis > Reporting", click the "Insert Excel report" button or the "Insert Word report" button.

The "Report" dialog opens.

- 3. Enter a unique name and an optional description for the report.
- 4. Select a display type.

The display type specifies the heading for the datapoint'S value column.

- 5. Under "Country", select the country whose time zone you want to use for the calculation.
- 6. Configure one or more query types (Page 195).
- 7. Configure one or more modules (Page 199).
- 8. Confirm the configuration with "OK".

### Result

The report is created.

	Bericht - KPI Batch	Production	- 🗆 ×
Name: KPI Batch Pro	duction		
Description:			^
			~
Display Type			
Text Type: Description	- Cour	ntry: Germany	-
Query Types			
Name	스 Comp. Level S	S. P. M. D.	New
Ad-Hoc	Entry values		Edit
Week	Entry values		
		·	Delete
		Ti A E	]
Modules [\ Parameters]	Туре	Ti A. F.	New
Name balance_week	Type Balance	Off N N	New
Name balance_week balance_month	Type Balance Balance	N N ByQYN	Edit
Name balance_week	Type Balance	Off N N	
Name balance_week balance_month	Type Balance Balance	N N ByQYN	Edit
Name balance_week balance_month	Type Balance Balance	N N ByQYN	Edit Delete
Name balance_week balance_month	Type Balance Balance	N N ByQYN	Edit Delete
Name balance_week balance_month	Type Balance Balance	N N ByQYN	Edit Delete
Name balance_week balance_month	Type Balance Balance	N N ByQYN	Edit Delete
Name balance_week balance_month balance_year	Type Balance Balance	N N ByQYN	Edit Delete
Name balance_week balance_month balance_year	Type Balance Balance Balance	N N ByQY N ByQY N	Edit Delete
Name balance_week balance_month balance_year	Type Balance Balance	N N ByQ Y N ByQ Y N	Edit Delete
Name balance_week balance_month balance_year	Type Balance Balance Balance	N N By Q Y N By Q Y N	Edit Delete

# See also

Configuring a template for an Excel report (Page 204) Entering values in reports (Page 214) Query types (Page 469) Module overview (Page 478) Display modes (Page 519) Assign time zone for acquisition or calculation (Page 405)

# 6.2.3 Configuring the query type for a report

### Overview

Use a query type to configure the time frame that is queried in a report. You may configure several query types in the report. A folder is created in the project tree of Plant Explorer for each query type of a report.

# Requirement

- The report is configured.
- For the "Print" and "Save in directory" options:
  - The printer has been created.
  - The directory has been created.
- For the "Send by Mail" option:
  - The connection to an SMTP server is configured in the B.Data options.
  - User has been created with an email address.
- For the "Send Link to Recipient by Mail" option:

The U for B.Data Web has ben entered under "B.Data options" on the "Database tab" in the "RSERV\_SMTP\_WEBSERVER" field, for example "http://localhost/BDataWeb".

### Procedure

1. Double-click the selected report in the project tree of Plant Explorer.

The "Report" dialog opens.

2. Click "New" in the "Query types" field.

The "Query type" dialog opens.

- 3. Select a query type and enter a description if necessary.
- 4. Select a compression level.

Usually, you select "Entry values".

5. Go to "Delete interval" to set the interval for automatic deletion of report results from the project tree of Plant Explorer.

If you want to automatically delete the report results, you also need to start the "Job for deleting analyses".

6. Activate the corresponding options for automatic generation or printing of reports.

- 7. Proceed as follows to automatically save and email the report:
  - Activate the "Send by Mail" option.
  - Activate the report format for mailing, e.g. "PDF".
  - Activate the "Send Link to Recipient by Mail" check box if you only want to email the link to the stored report.

The recipient will receive an email with the link instead of the file.

The recipient accesses this report by clicking this link, logging in to B.Data Web, and opening the report.

- After finishing the configuration, copy the "User" object under the query type.

- 8. Proceed as follows to automatically save the report to a directory:
  - Activate the "Save in directory" option.
  - Activate the report format for saving.
  - After finishing the configuration, copy the "Directory" object under the query type.



9. If you want to generate the report automatically you should also start the job for automatic evaluations.

You may also use B.Data Task Management for automatic generation of the report.

	Report Query Type - Month –	×
Query Type:	Month	
Description:		^
		~
Compression Level:	Entry values	•
Persistence Time:	1 Unit: Y	
	matically el OPDF	
	il Linkto Recipient	
Save to D		

10.Click "OK".

### Result

The query type is configured for the report.

You can edit or delete the query type, or add a new one for the report.

	Bericht - Plant Performance		- 🗆 🗙
Name: Description:	Plant Performance		^
<ul> <li>Display T</li> <li>Text Type:</li> <li>Query Ty</li> </ul>	Description  Country: Germany	/	•
Name Month		M. D.	New Edit Delete
Modules Name ⊡- Protoco	[\Parameters]           Type         Ti           I         Protocol with from/to         Off	A. F. N N	New Edit Delete Clone
Template Oper		Apply	Cancel

### See also

Creating a report (Page 193) Configuring a module for reports (Page 199) Query types (Page 469) Time unit abbreviations (Page 477) Creating a printer (Page 82) Creating a folder (Page 84) Database jobs (Page 599) Task Management (Page 396) Setting up users (Page 88)

# 6.2.4 Configuring a module for reports

### Overview

Use a module to configure the visualization of a report in Microsoft Excel or Microsoft Word. You can configure several modules for a report.

#### Note

Use a general name for the first protocol, e.g. "PROT", if you want to clone a report.

### Requirement

The report is configured.

# Procedure

1. Double-click the selected report in the structure tree of Plant Explorer.

The "Report" dialog opens.

2. Click "New" in the "Module" area.

The module configuration dialog opens.

3. Enter a unique name and an optional description for the module.

Give the report module a name other than those for the worksheets and cells in Microsoft Excel. Otherwise B.Data will not allow creation, because B.Data is working with that name. Microsoft Excel only allows names that do not match a cell reference.

Example: You cannot create an "A1" module, because in Microsoft Excel there is a cell named "A1".

- 4. Select a module type.
  - You need a datapoint to configure a query module.
  - You need a measuring variable to configure a balancing module or a protocol module.
- 5. Activate "Query interval at start" to enter the interval at the start of the report.
- 6. Activate "Insert rows before the values" in order to insert rows for the new values. Corresponding rows will be inserted prior to the wiring of values. Activate this option, for example, when using graphic objects in the template.

Existing rows will be overwritten by default. Activate this option, for example, when using row operations in Microsoft Excel .

7. Click "time window correction" and select a time under "With query type" for starting report evaluation .

8. In order to shift the time range for the evaluation of a report, click "Time period correction" and select a value and a time unit under "Align by".

<u>u</u>	Report Module - Balance – 🗖	X
Name:	Balance	
Description:		
Module Type:	Balance	•
	Query interval on start.	
	Insert rows before inserting values.	
	Timespan Correction	¥
	• Off	
	O By Query Type	
	O Align By	-
	0 d 💌	
_	OK Cancel	
	ON Calicer	

9. Confirm the configuration with "OK".

### Result

Ē	Bericht - Plant Performance	- 🗆 🗙
Name: Plant Performa	nce	
Description:		$\sim$
Display Type		
Text Type: Description	Country: Germany	•
📆 Query Types		
Name	△ Comp. Level S. P. M. D.	New
Month	Entry values	Edit
		Edit
		Delete
Modules [\ Parameters]		
Name	Type Ti A. F.	New
Balance	Balance Off N N	
□- Protocol	Protocol with from/to Off N N	Edit
Query Type Month	Interval Unit Text	Delete
Monut	1 u	Clone
Template		
Open Gener	ate Entry Points Import	
9	OK Apply	Cancel

The module is configured for the report. You can edit, delete, or clone the module, or insert a new one for the report.

If the module needs start parameters for the report, enter the corresponding start parameters in the "Module" area of the "Report" dialog, e.g. 1 h for the "Protocol" module. Missing start parameters for a module are marked in red color.

Balance Balance			
		N	N
Protocol Protocol with from/to	Off	N	N
Query Type Interval Unit	Text		
Month 0 d			

# See also

Basics of configuring the report template (Page 202) Creating a report (Page 193) Time unit abbreviations (Page 477) Module overview (Page 478)

# 6.2.5 Configuration of report templates

# 6.2.5.1 Basics of configuring the report template

### Overview

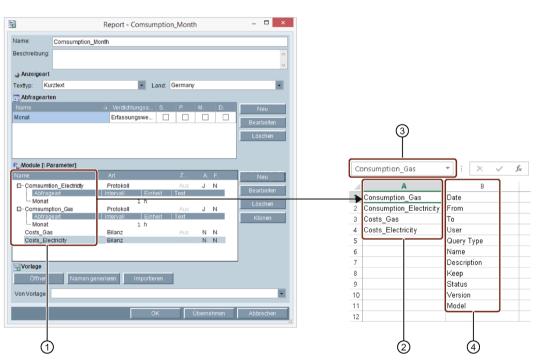
B.Data uses Microsoft Excel or Microsoft Word to visualize reports. Specify the layout and representation individually in the relevant program. In this way, for example, you can visualize consumption values in a diagram.

# Principle of name generation

#### Note

# Report templates based on Microsoft Word

In Microsoft Word, you use embedded Excel objects, into which B.Data imports values as in the figure shown below.



When you click "Generate name" in the report configuration, a new report template is created or an existing one is updated. The module names ① are entered in column "A" ②. A name with the relevant module name is created for each cell ③. In addition, the master data of the report is entered in column "B". A name with the relevant master data is created for each cell ④.

For report templates in Microsoft Word , the data are imported into the embedded Excel objects that contain the module names.

# **Entering values**

Values are entered as follows when you generate a report:

Modules: The values are entered as of the cell below the corresponding name. For this
reason, you need to shift each cell with a module name from column "A" to a position
where contents will not be overwritten.

Example: The daily listing of consumption values of a month usually needs between 29 and 32 rows: One row for the header and, depending on the months, between 28 and 31 days.

You can use the naming manager in Microsoft Excel to view and edit the names and their cell ranges.

You may also distribute the cells to several sheets.

#### Note

If you distribute cells that contain module names to several sheets, activate the sheet that contains the original definition of names before closing.

• Master data: The values are entered as of the cell with the corresponding name.

### Modifying or adding module names

Whenever you rename a module in B.Data, you also need to adjust the corresponding name of the cell in the report template. When adding an additional module for a report in B.Data, you must also assign this name to a cell in the report template.

Use the naming manager for both actions.

### See also

Configuring a template for an Excel report (Page 204) Configuring a module for reports (Page 199)

# 6.2.5.2 Configuring a template for an Excel report

### Overview

You can configure a template for an Excel report. In this template, you specify how the measured values are displayed.

# Requirement

- The report is configured.
- The query type is configured for the report.
- The module is configured for the report.

### Procedure

1. Double-click the desired Excel report in the structure tree of Plant Explorer.

The "Report" dialog opens.

2. To create a report template in Microsoft Excel, click "Generate name".

Microsoft Excel opens and the module name is entered in column "A".

- 3. Move the cell containing the module name to a position at which the module has sufficient space for its measured values.
- 4. Structure the template. You can find additional information in the Microsoft Excel online help.
- 5. If you want to run a macro in Microsoft Excel after you have generated the report, follow these steps:
  - Open the macro editor in Microsoft Excel.
  - Insert the Sub OnBDataLoadDone procedure in the spreadsheet that contains the original name definitions. Note that this entry is case-sensitive.
  - Write the program code and close the macro editor.
  - Set the security level to "low" in the Microsoft Excel security settings. Activate the "Trust access to Visual Basic projects" option under "Trusted Publishers".

### Note

You cannot run a macro without having made the aforementioned security settings.

6. Save the template to an Microsoft Excel file.

# Result

4	A	В	С	D	E	F	G	Н
12								
	From							
14	То							
15								
16	Entry point for Balance Modul	e						
17	Consumption Gas	GJ						
	Consumption Electricity	GJ						
	Costs Gas	EUR						
	Costs Electricity	EUR						
21	Total costs	EUR						
22	Unit consumption	GJ/mcig						
23								
24	Protocol							
<u>25</u> 26	time		Costs Gas	Costs Electricity	Total production	Unit consumption	Total consumption	
27								
28								

# The template is configured for the report.

### Alternative procedure

Alternatively, you can import an existing template for the report. To do this, click "Import" in the "Report" dialog and select the required file. If required, you can adapt the module names in the report template using the name manager.

### See also

Basics of configuring the report template (Page 202) Creating a report (Page 193)

Configuring the query type for a report (Page 195)

Configuring a module for reports (Page 199)

# 6.2.5.3 Configuring a template for a Word report

### Overview

You can configure a template for a Word report. In this template, you specify how the measured values are displayed.

Use the following objects to visualize the measured values:

- Tabular representation: Embedded Excel table
- Graphical representation: Trend chart

### Requirement

- The report is configured.
- The query type is configured for the report.
- The module is configured for the report.

### Procedure

- Double-click the desired Word report in the structure tree of Plant Explorer. The "Report" dialog opens.
- In order to prepare a template for the report in Microsoft Word, click "Open". Microsoft Word opens.
- 3. Insert the desired objects, for example an embedded Excel table.

💽 🔒 🐬 🖑	Ŧ	BData207216656	i [Compa	tibility Mo	ode] - Re	port - öffnen	- MonthlyRep	ort		?	<b>A</b> -	□ ×
FILE HOME	INSERT	DESIGN PAGE LAY	OUT	REFEREN	CES	MAILINGS	REVIEW	VIEW			S	ign in 🔼
Pages Table Pictu	res Online Pictures		Apps	Online Video	Links	Komment	<ul> <li>Header •</li> <li>Footer •</li> <li>Page Num</li> </ul>	nber •		■ - 📝 4 - 💀	ΥΩ Symbo	s
Insert Table				Media		Comments	Header & F	ooter	-	Fext		-14
□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□												
Excel Spr	eadsheet											
Quick Ia		ENGLISH (UNITED STATES)					- EFF		<b>-</b> -		+	100%

- 4. Save and close the template.
- 5. Click "Generate name".

Microsoft Word opens. A "B.Data" worksheet is inserted into each chart or each embedded table. The module name is entered in column "A" on this worksheet.

		BData2081233	3421 [Con	npatibility	Mode] - F	leport - öf	fnen - Mo	onthlyRepo	ort			×
File Window												
🗄 🕤 🖓												?
н	OME	INSERT PAGE	LAYOUT	FORMULA	S DATA	REVIEW	V VIEW					
Protocol	<b>-</b> :	$\times \checkmark f_x$	Proto	col								~
_												
		A B	C	D	E	F	G	Н				
	1 Req	uest Date										
	2 Prot	tocol From										
	3	То										
	4	User										
	5	Query_T	/pe									
	6	Name										
	7	Descripti	on							2		
	8	Keep										
	9	State										
	10	Version [	Date									
	11	Model Da	ate									
	12	Land										
	13									-		
		Sheet	1 B.Dat	a sheet	+	: •			E F			
2	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	A B uest Date tocol From To User Query_Ty Name Descripti Keep State Version I Model Da Land Sheet				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			-
												<b>b</b>
PAGE 1 OF 1	0 WORDS	D2 ENGLISH	(UNITED STA	TES)					] 🗟 -		+ 10	J%

6. Move the cell containing the module name to a different worksheet, to a position where the module has sufficient space for its measured values.

#### Note

During generation of the report, only those module names will be populated, which are contained on a different "B.Data sheet" worksheet.

- 7. To design the template, use Microsoft Word.'s formatting options and elements.
- 8. Save the template to a Microsoft Word file.

### Result

The template is configured for the report.

# 6.2.6 Working with templates

### 6.2.6.1 Create a template

#### Introduction

In B.Data, you can use an existing report to create a template that is the basis for new reports. If you create a new report and assign a template to it, the following configurations from the template are applied:

- Display modes
- Query types
- Modules
- Report layout

Using templates for reports makes sense for similarly structured plants or sites, for example when separate reports are required for nearly identical production lines. Changes to the template affect all reports that are generated in the future, which are based on this template.

#### Requirement

A report has been created.

### Procedure

- Select the "Report as template" command from the shortcut menu of the report. The "Report" dialog opens.
- 2. Enter a new name for the template.

]	Templa	te		_ 🗆 🗙
Name: Template_Consur	nption			
Description:				^
				~
Display Type				
Text Type: Name	- Cou	ntry: Germany		-
🔁 Query Types				
Name	△ Comp. Level	S. P. I	M. D.	New
Monat	Entry values			Edit
				Delete
Modules [\ Parameters]				
Name	Туре	Ti	A. F.	New
			3Z 81	
□- Comsumption_Gas	Protocol	UII	Y N	Edit
Query Type	Interval Unit	Text	YN	Edit
		Text	Y N	Edit Delete
Query Type Monat Comsumtion_Electricity Costs_Electricity	Interval Unit 1 h Protocol Balance	Off Off	Y N N N	
Query Type Monat Comsumtion_Electridty	Interval Unit 1 h Protocol	Off	Y N	Delete
Query Type Monat Comsumtion_Electricity Costs_Electricity	Interval Unit 1 h Protocol Balance	Off Off	Y N N N	Delete
Query Type Monat Comsumtion_Electricity Costs_Electricity	Interval Unit 1 h Protocol Balance	Off Off	Y N N N	Delete
Query Type Monat Comsumtion_Electricity Costs_Electricity	Interval Unit 1 h Protocol Balance	Off Off	Y N N N	Delete
Query Type Monat Comsumtion_Electridy Costs_Electricity Costs_Gas	Interval Unit 1 h Protocol Balance	Off Off	Y N N N	Delete
Query Type Monat Comsumtion_Electridty Costs_Electricity Costs_Gas	Interval Unit 1 h Protocol Balance Balance	Off Off Off	Y N N N	Delete
Query Type Monat Comsumtion_Electridty Costs_Electricity Costs_Gas	Interval Unit 1 h Protocol Balance	Off Off Off	Y N N N	Delete
Query Type Monat Comsumtion_Electridty Costs_Electricity Costs_Gas	Interval Unit 1 h Protocol Balance Balance	Off Off Off	Y N N N	Delete

3. As needed, change query types, modules or the report layout.

4. Save the template.

### Result

The template has been created.

# See also

Edit template (Page 211)

# 6.2.6.2 Using a template

### Requirement

A template has been created.

# Procedure

- 1. Select the folder in which the report is going to be created.
- 2. In the menu bar under "Analysis > Reporting", click the "Insert Excel report" button or the "Insert Word report" button.

	Bericht - Validation_Plant2	- 🗆 🗙
Name: Validation_Pla	ant2	
Description:		~
		~
Display Type		
Fext Type: Name	Country: Germany	
Query Types		_
Name		New
Month	Entry values	Edit
		Delete
		Delete
Modules [\ Parameters]	]	
Name	Type Ti A. F.	New
gaps	Validation gap Off N N	Edit
State not ok	Validation status not ok Off N N	
State_not_ok	Validation Min Max Off N N	Datata
min_max max_rise	Validation Min Max Off N N Validation max.increase Off N N	Delete
min_max		Delete Clone
min_max max_rise	Validation max.increase Off N N	
min_max max_rise	Validation max.increase Off N N	
min_max max_rise	Validation max.increase Off N N	
min_max max_rise ref_DP	Validation max.increase Off N N	
min_max max_rise ref_DP	Validation max.increase Off N N Validation deviation refer Off N N	
min_max max_rise ref_DP	Validation max.increase Off N N Validation deviation refer Off N N erate Entry Points Import	Clone
min_max max_rise ref_DP	Validation max.increase Off N N Validation deviation refer Off N N erate Entry Points Import	
min_max max_rise ref_DP	Validation max.increase Off N N Validation deviation refer Off N N erate Entry Points Import	Clone

The "Report" dialog opens.

- 3. Enter a meaningful name and an optional description for the report.
- Select a template from the list under "From template", and click "Apply". The "Report" dialog is filled out with the template's specifications.
- 5. Save the report.

# Result

A new report based on a template has been created.

# 6.2.6.3 Edit template

# Introduction

Templates for reports are centrally managed in the "Templates" dialog. You can create, edit or delete templates:

- "Edit": The changes affect all reports that are generated in the future, which are based on the edited template.
- "Delete": The template is disconnected from all templates that are based on the template that is to be deleted. Then the template including the configured query types and modules is deleted.

#### Note

If a template has been disconnected from a report, you can never again assign a template to this report.

# Requirement

A template has been created.

# Procedure

- 1. Under "Analysis > Reporting", click the "Report templates" button.
  - The "Templates dialog" opens, and displays the list of templates.

Fi	le Acquisition Processing	Analysis	Master Data	Administration	Help
	🗒 F 🖻 🖻 🚨 🖻	<b></b>	<b>H</b>		
		Tem	plates		- 🗆 🗙
E List	of Templates				
Туре	Reportname		Save date	Saved by	Edit
	Template_Degree Days		29/10/2014 10:49		Delete
Ex.	Template_Validation		29/10/2014 10:49		
	Power_ComsumptionKK		17/10/2014 12:35		_
<b>1</b>	Power_ComsumptionSIK		17/10/2014 12:34	200 Admin	_
					Close

- 2. In order to edit a template:
  - Select a template, and click "Edit".

The "Template" dialog opens.

- Perform the changes.
- Save the template.
- 3. In order to delete a template:
  - Select a template, and click "Delete".

# See also

Create a template (Page 208)

Disconnecting a report from a template (Page 213)

# 6.2.6.4 Disconnecting a report from a template

### Requirement

A report was created using a template.

# Procedure

1. Open the report.

The "Report" dialog opens.

2. Click "Disconnect".

#### Note

If you disconnect a template from a report, you can never again assign a template to this report. However, you can create a template for other reports from this report.

- 3. As needed, change the configured query types, modules or the report layout.
- 4. Save the report.

# Result

The template is disconnected from the report.

# See also

Edit template (Page 211)

# 6.2.7 Entering values in reports

# Requirement

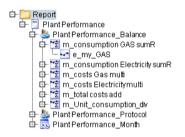
- The report is configured.
- The data point and measuring variable have been created.
- You have created the printer, the directory, and the user.
- The module and request type are configured for the report.

# Procedure

- 1. Assign the module the corresponding data points or measuring variables in order to visualize the selected values in the report.
  - Assign the module a data point if you have configured a query module.
  - Assign the module a measuring variable if you have configured a balancing module, or a protocol module.
- 2. To print, save, or e-mail the report automatically, assign the corresponding printer, e-mail address and/or directory to the query type.

# Result

The values are entered in the report.



# See also

Configuring the query type for a report (Page 195) Configuring a module for reports (Page 199) Fundamentals of creating printer and directory (Page 81) Setting up users (Page 88)

# 6.2.8 Generating reports

#### Overview

You can generate the configured report at any time.

### Requirement

- The report is configured.
- The module and request type are configured for the report.
- The template is configured for the report.
- The values for the report have been set.

# Generating reports

1. Click "Start" in the shortcut menu of the selected report.

The "Start report" dialog opens.

The "General" tab is activated in the "Module" area.

The "Module" area lists modules that you have configured for the report and that require additional information for report generation.

6	Start Repor	t		-	×
Module	Parameter				
Common	Query Type: Ad-Hoc				-
🕹 balance	From	То			
👆 hour_distribution	09.03.2014 00:00:00		10.03.2014 00:00:00	•	
😓 protocol					
	Advanced Parameter				*
Cancel		Back	Next	S	tart

- 2. Select the query type for the report.
- 3. Specify a time range for the report.
- 4. Click "Advanced parameters" to specify additional parameters for report generation.
- 5. You can edit module start parameters by selecting and editing the selected module in the "Module" area.

You may also click "Next" to select the module.

6. Click "Start".

# Specifying additional parameters for the report (optional)

- 1. Click "Advanced parameters".
  - The advanced parameters are displayed.

i		Start Report		_ □
Module	Parameter			
Common	Query Type:	Ad-Hoc		-
🖖 balance	From		To	
hour_distribution	09.03	3.2014 00:00:00	10.03.2014 0	0:00:00
😓 protocol	Advanced Para			*
		meter		*
	Version Current	10.03.2014 12:18:16 💌	Model	:: 🔹
	Compression L	evel: Entry values		•
	Batches:			^
	Кеер:			×
	Country:	Germany		-
Cancel			Back Next	

2. Disable "Current" and select a date to define the measured value version for evaluation. All measured values generated prior to this data are evaluated.

The current date is activated by default.

3. Deactivate "Current" and enter a model date to define a calculation model for evaluation of the report.

The report is evaluated by default based on the current calculation model.

- 4. Select the compression level in a report to evaluate the compression level values.
- 5. To select a batch, click "..." and select the batch ID from the batch list.
- 6. You can exclude the report from cyclic delete actions by activating the "Keep" option. The job for deleting analyses is executed if you do not activate this "Keep" option.
- 7. Under "Country", select the country whose time zone you want to use for the calculation.

### Editing module start parameters (optional)

- 1. Select the module from the "Module" area.
- 2. Specify the query type and time range if you have activated the "Query interval at start" option in the module configuration.
- 3. You can always edit the interval, as well as the high and low limit of configured module start parameters.

The start parameters are derived from the module configuration.

<b>(3</b> )		Start Report			-		×
Module	Parameter						
Common	Query Type:	Ad-Hoc					-
💩 balance	From		То				
😓 <u>hour_distribu</u>	09.	.03.2014 00:00:00		10.03.2014 00:00:00	•		
😓 protocol	Lower Bound:	20					
	Upper Bound:	140					
	Interval:	20					
	Advanced Par	ameter					*
Cancel			Back	Next	S	tart	

4. Edit the corresponding parameters if you have configured modules that need an interval and unit as start parameters.

The start parameters are derived from the module configuration.

3		Start Report			-	×
Module	Parameter					
Common 🖂	Query Type: Ad-Hoc					-
💩 balance	From		То			
🕹 hour_distribution	09.03.2014	00:00:00		10.03.2014 00:00:00	•	
💺 proto	Interval:	1 d	٠			
	Advanced Parameter					*
Cancel			Back	Next	Sta	ırt .

# Result

The report is generated and opened automatically.

Report ResultUtilization - from: 2014.03.09 till: 2014.0	
Calculating report information. 🗹	
Generating report.	
Opening report.	
Progress	
Close	ļ

Click "Close" to prevent the reports from being opened automatically.

# Alternative procedure

You can also start the report by means of the shortcut menu of the respective query type.

## See also

Assign time zone for acquisition or calculation (Page 405)

# 6.2.9 Opening report results

### Overview

Report results are stored in the folder for the configured query type in the structured tree of Plant Explorer.

- E Reports
D- S Validation
🗄 🗮 Energy
d- 式 KPI
🗄 🔜 KPI Batch Production
👜 🖫 KPI Batch Production balance week
🗄 🖫 KPI Batch Production_balance_month
🗇 🖫 KPI Batch Production balance year
Rel Ratch Production Week
KPI Batch Production - from: 2011.09.19 till: 2011.09.26 created: 2013.

You can open the report results as follows:

- In Microsoft Excel or Microsoft Word
- As PDF

### Requirement

- The report is generated.
- Microsoft Excel or Microsoft Word is installed.
- PDF-Reader is installed.

#### Procedure

- 1. To open the report result in the visualization program, click "Open" in the shortcut menu of the selected report result.
- 2. Open the report in PDF format by clicking "Open as PDF" in the shortcut menu of the report result.

# Result

#### The report result is displayed.

4	A	В	С	D	E	F	G	Н
12								
13	From	01.03.2012						
14	То	01.04.2012						
15								
16	Entry point for Balance Mod	lule						
17	Consumption Gas	GJ	4.936,00					
18	Consumption Electricity	GJ	6.856,00					
19	Costs Gas	EUR	20.731,20					
20	Costs Electricity	EUR	21.253,60					
21	Total costs	EUR	41.984,80					
22	Unit consumption	GJ/incig	38,71269					
23								
24	Protocol							
25	tij E		Costs Gas	Costs Electricity	Total production	Unit consumption	Total consumption	
26	01.03.2012	02.03.2012	504,00	564,2	12000	39,7351	302,00	
27	02.03.2012	03.03.2012	588,00	626,2	14000	40,9357	342,00	
28	03.03.2012	04.03.2012	672,00	688,2	15000	39,267	382,00	
29	04.03.2012	05.03.2012	630,00	657,2	14000	38,674	362,00	
30	05.03.2012	06.03.2012	609,00	641,7	12500	35,5114	352,00	
31	06.03.2012	07.03.2012	596,40	632,4	13000	37,5723	346,00	
32	07.03.2012	08.03.2012	625,80	654,1	14500	40,2778	360,00	
33	08.03.2012	09.03.2012	693,00	703,7	15000	38,2653	392,00	
34	09.03.2012	10.03.2012	756,00	750,2	16000	37,9147	422,00	
35	10.03.2012	11.03.2012	924,00	874,2	19500	38,8446	502,00	
36	11.03.2012	12.03.2012	840,00	812,2	18000	38,961	462,00	

# Color code of the measured values in the report

The measured values are color-coded as follows for the following status:

Status	Color code
Result OK	Black
No data available for measuring variable	Magenta
Result of manual correction	Orange
Result from substitute value	Light blue
Result not OK	Red
Missing measured values	Light green

6.3 Creating trends

# 6.3 Creating trends

# 6.3.1 Basics on trends

#### Overview

The Trender is used to create graphic evaluations that can be used to visualize current and historical process values or operational parameters.

The Trender offers you extensive functions for simple extraction of useful information from the data pool.

This chapter provides you with an overview of the corresponding functionalities in B.Data Trender. It also provides detailed information on Trender configuration and startup.

The next chapters present the following contents related to the Trender.

- 1. Configuring trends
- 2. Starting trends
- 3. Data transfer to the Microsoft Office environment
- 4. Overview of the Trender functions

#### Requirement

Successful installation of all software components.

6.3 Creating trends

# 6.3.2 Configuring trends

### Overview

This section provides instructions related to the following actions:

- Creating trend objects
- Assigning data points
- Configuring trend objects

### Requirement

The data points to be used for visualization have been successfully created in the system.

## **Creating Trender objects**

- 1. Select the folder in which the trend is going to be created.
- 2. Click the "Insert Trend" button in the menu bar under "Analysis > Reporting".

The Trender configuration dialog opens.

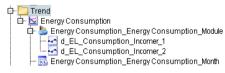
- 3. Select the "General" tab and enter the trend name in the "Caption text" field, e.g. "targetactual comparison".
- 4. Click "OK".
- 5. To create the Trender object, select "File" > "Close and return to Plant Explorer". Confirm the following prompt with "OK".

The Trender object will be created in the B.Data tree. A module for the data points to be visualized, including the "Ad-Hoc" and "Day" query types, will be generated automatically for this trend.

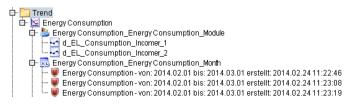


# Assigning data points

1. Copy the data points to be used for visualization directly to the new module node.



2. If you need query types other than "Ad-Hoc" or "Day", start the trend with the selected query type directly from the trend. The query type is generated automatically.



# **Configuring Trender objects**

 To configure the Trender object, select the "Configure" command from its shortcut menu. The Trender and the configuration dialog are opened. The dialog displays the legend for the connected data points.

• K Trender Diagram Server - [Energy_Consumption - from: 2014.03.09 till: 2014.03.10 created: 2014.03	3 – 🗆 ×
😥 File Edit B.Data View Options Window Help	- 8 ×
$\square \blacksquare \blacksquare$	
Plot Properties	
Plot Method Ranges & Limits Pen Legend Markers Bands General Scales Plot Area Grid Highlight Pen Printing	
Caption text: Energy Consumption	
Plot Mode	
Gaps Plot       Gaps Plot       Show gaps plot       All off       Status Symbols       Show symbols	
Snap range:  20%	
-1 OK Cancel Apply	
X1           - d_EL_Consumption_Incomer_1 d_EL_Consumption_Incomer_1 01.010.000 1.000         Minimum         Maximum           - d_EL_Consumption_Incomer_2 01.01 01:00:00 1.000         01.01 01:00:00 1.000         01.01 01:00:00 1.000	Average 1.000 1.000
Ready (B:01.01 01:00:00, L:-0.997)	

- 2. Select the "Pen" tab in the configuration dialog.
- 3. Click "Color" to change the color of the selected data point.
- 4. Select red.
- 5. Likewise, change the color of the second data point.
- 6. Select the "Plot Method" tab in the configuration dialog.
- 7. Select "Polyline".
- 8. Likewise, change the line type for the second data point.
- 9. Confirm your entries with "OK" and answer with "Yes" when prompted to save the configuration.

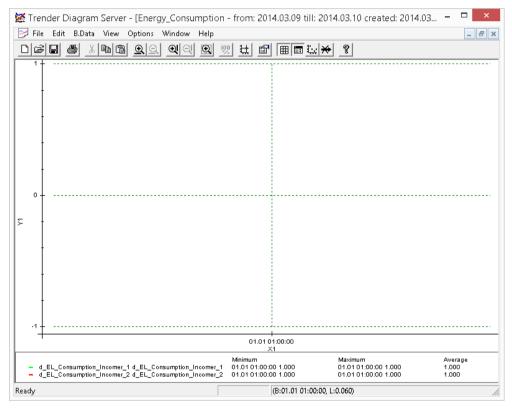
10. Right-click the legend to open its configuration dialog.

Legend Pro	operties	
Function  d_EL_Consumption_Incomer_1 d_EL_Consumption_Incomer_1  d_EL_Consumption_Incomer_2 d_EL_Consumption_Incomer_2	Status Visible Visible	Status Show Status Statum Up Status Awerage Rightmost Marker
ОК	Cancel	L

11.In the "Show" area, select the values to be displayed in the legend, e.g. "Minimum", "Maximum", and Average".

12.Click "OK" to save the configuration.

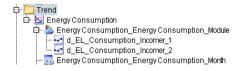
13.OK activates the configuration data.



14.Exit the Trender to complete the configuration session.

### Result

You have successfully created and configured a trend in the B.Data system.



6.3 Creating trends

# 6.3.3 Generating trends

#### Overview

This section provides instructions related to the following actions:

- Selecting Trender objects
- Configuring an interval selection dialog

#### Requirement

The trend to be started has been configured.

#### Procedure

- Select the query type and run the "Start..." command from the shortcut menu. The "Trender" dialog opens.
- 2. Enter the start time of the evaluation period in the "FROM" field.
- 3. Select the "Query type".

The end of the evaluation period is entered automatically depending on the "Query type" selected.

 You can specify the evaluation or monitoring period in the next dialog; the default query type is set permanently.

	Trei	nder	- 🗆 ×
Query Type From 01.05.201 • Historic • Online Kernel • Historic_Online Kernel		<b>To</b> 01.04.2014 00:00:00	•
Keep: Compression level: Batches:			
•		ОК	Cancel

5. If recorded data has been versioned, you can enter corresponding settings in the "Version" field.

6. Activate the evaluation type in the "Type" field.

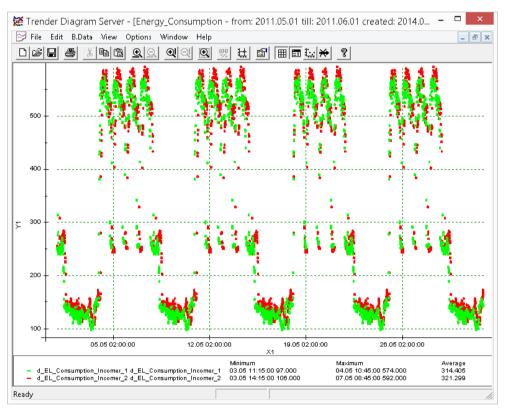
#### Note

The online functionality is only available if the data is acquired via the kernel.

7. Click "OK" to launch calculation and to open the trend.

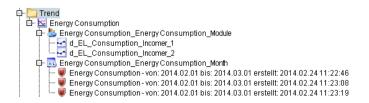
#### Result

The Trender outputs the graphic view of configured process data and parameters.



In the Trender, you can edit and modify the graph, or read parameters from the trend. Select "File > Close and return to Plant Explorer" to save the trend and return to the Plant Explorer.

A new node with the corresponding trend name and date is now stored in the Plant Explorer.



#### See also

"Trends" editor (Page 576)

6.3 Creating trends

# 6.3.4 Importing data into the MS Office environment

#### Overview

You can use the clipboard as a simple means of transferring data from the Trender to a Microsoft Office product (e.g. Excel, Word, or PowerPoint).

#### Requirement

A completely configured and calculated Trender.

#### Procedure

1. Select the trend and copy it to the clipboard with <CTRL+C>.

The marking is displayed by a superimposed dotted line.

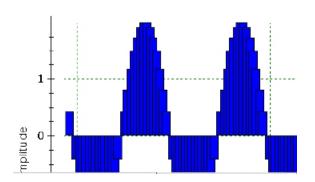
- 2. Open the Office application and paste the trend with <CTRL+V> to the selected position.
- 3. You may also drag-and-drop trends from B.Data to the Office application.

#### Result

A time set with time stamp and value is inserted into the Excel sheet.

	A	В	С	D	E
1			04.04.2005 00:15	162	
2			04.04.2005 00:30	157	
3			04.04.2005 00:45	158	
4			04.04.2005 01:00	156	
5			04.04.2005 01:15	154	
6			04.04.2005 01:30	155	
7			04.04.2005 01:45	155	
8			04.04.2005 02:00	155	
9			04.04.2005 02:15	153	
10			04.04.2005 02:30	156	
11			04.04.2005 02:45	158	
12			04.04.2005 03:00	155	

In MS Word, the trend is inserted as graphic image:



6.3 Creating trends

# 6.4 Creating visualization

# 6.4.1 Basics on visualizations

#### Overview

B.Data Visualization enables the online presentation of process values in diagrams.

This chapter provides you with an overview of the corresponding functionalities in B.Data Visualization. It also provides detailed information on the configuration and start of visualization.

The next chapters present the following contents related to visualization.

- Configuring visualization
- Starting visualization

#### Requirement

Successful installation of all software components.

# 6.4.2 Configuring visualization

#### Overview

This section provides instructions related to the following actions:

- Creating visualization objects
- Arranging data points
- Formatting data points
- Specifying data input

### Requirement

- The data points to be used for visualization have been successfully created in the system.
- An image file with "\*.bmp", "\*.jpg", "\*.gif" or "\*.png" format as available as background image for visualization.

#### Note

The image file used should not exceed a maximum size of 100 KB so that you are able to configure the graphic object along with the visualization project.

### Creating visualization objects

- 1. Select the folder in which the visualization is going to be created.
- 2. Click the "Insert Visualization" button in the menu bar under "Analysis > Reporting".

#### The "Visualization" dialog opens.

<b></b>				Visual	lization				- 🗆 ×
Name: Description:	Energy Flow								<b>^</b>
Name	XY	Font Height	Width	Italic	Format	Cycle Tir	me		Arrange Font Color Format Cycletime
Kernel	ODatabase	Refresh interval	:	30	[sec]	Time shift:		0 [sec]	
								ОК	Cancel

3. Enter a "Name" and an optional "Description" for the visualization.

- 4. Click "Import image" and select the required file.
- 5. Click "Open".
- 6. Save the configuration with "OK".

The "Visualization" object will be created.

7. Copy the data points to be used for visualization directly to the new visualization object node.



### Arranging data points

1. Select "Edit" from the shortcut menu of the visualization object to open the configuration dialog.

The visualization is opened along with the configuration dialog. Corresponding entries are now available for the connected data points.

lame:	Energ	y Flow								
escription:										-
Name	Х	Y	Font	Height	Width	Italic	Format			
d_NULL02	20	611	Arial	16	700			900		Arrange
d_NULL01		218	Arial	16	700			900		
d_NULL04	264	526	Arial	16	700			900		Font
4_NULL03	247	59	Arial	16	700			900		Color
										Format
										Cycletime
										Image
A		tabase	Refn	esh interval:		1	[sec]	Time shift:	3 [sec]	
( ) kornel										

2. Select the data point to position in the visualization and click "Arrange".

The visualization opens.

3. Double-click the insert position for the data point.

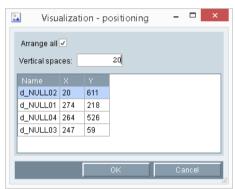
4. Click in the picture to position the data point with more precision.

The "Visualization - positioning" dialog opens. The "X" and "Y" columns display the current coordinates of the data point.

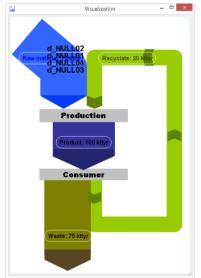
- You can edit these "X" and "Y" values to adjust the coordinates of a data point.

🔽 Visu	alizat	ion - p	ositioning	-		×
Arrange all						
Vertical spa	ces:		0			
Name	х	Y				
d_NULL02	276	266				
d_NULL01	274	218				
d_NULL04	264	526				
d_NULL03	247	59				
			-			
			ОК	Са	ncel	

 Select the "Arrange All" check box to left align several data points. Specify the "Vertical interval".



All data points will be arranged vertically at the defined interval.



5. Close the "Visualization" dialog to save your changes.

## Formatting data points

1. Select the data points for which you want to configure the "Font" and "Color". Click the relevant button and make your changes.

#### Note

Under the aspect that the colors red, orange, and green are used to indicate status violations, you should refrain from using these in your general design.

2. Click "Format" to define the visualization of values.

The following example shows a visualization of values with two decimal places:

🖳 Enter num	ber format		×
Format (999.99)	999.99		
	ок	Cancel	

## Specifying data input

Specify the data source in the conclusive step:

• "Kernel"

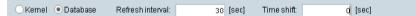
No further configuration required.

Requirements:

- The Kernel is in use.
- All data points used receive their data via interface.
- "Database"

The data is requested at cyclic intervals from the database using a "Requester".

1. Select the data source, e.g. "Database".



- 2. If "Database" has been activated:
  - Enter the "Refresh Interval" and "Time Shift" values.
  - Define the "Cycle time" for the data points.

	Cycle time	-		×
Cycle time [sec]	900			
	OK D	Ca	ancel	

3. Save the configuration with "OK".

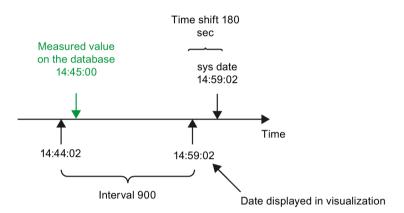
#### Result

You have created the visualization in B.Data.

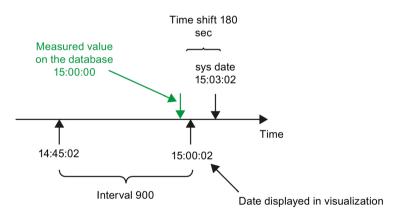


### Example

The two figures demonstrate how to calculate the correct values in the database with a "Time Shift" setting of 180 s and an "Interval" of 900 s. Assumption: A maximum time of three minutes expires between creation of the measured value and its availability in B.Data. "Sys date" denotes the "current time".



The following figure shows the situation that has developed one minute later:



# 6.4.3 Generating visualization

#### Requirement

The visualization to be started has been configured.

#### Procedure

1. Double-click the visualization object to start visualization.

#### Result

Visualization - Visualization - Consumer d\_NULL04 Waste: 75 kt/yr Consumer d\_NULL04

The value "NULL" is displayed if the database does not contain any values for the data point. The following table lists the color codes for the values. The acquisition status is listed before the adjustment status.

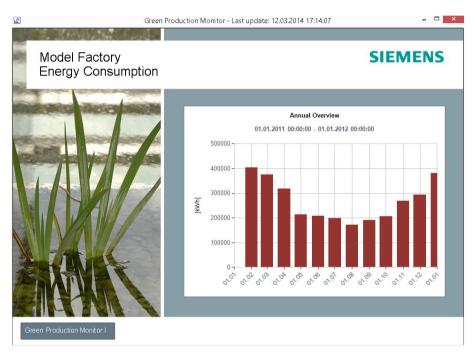
Color	Acquisition status	Correction status
Red	<> valid and no substitute value	Not relevant
Orange	valid	<> valid
Green	Substitute value	Not relevant

The visualization is generated.

# 6.5.1 Dashboard basics

### Definition of "Dashboard"

You can use the Dashboard and default objects to obtain a clear overview of history data from the B.Data database.

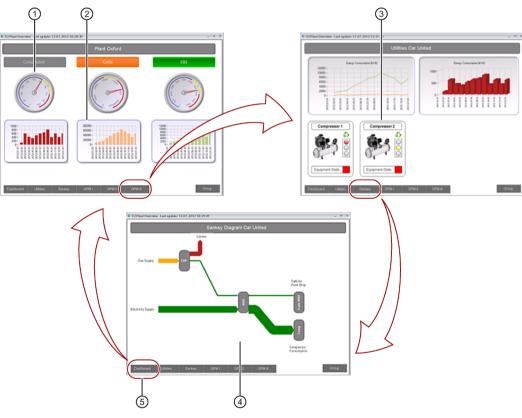


### Using the Dashboard

The Dashboard provides you with an overview of your production and consumption data. You may distribute the data to be visualized to several dashboards for a clearer overview. Add a navigation button to each Dashboard to facilitate navigation between the dashboards.

Use the B.Data "Dashboard" object in the following situations, for example:

- To visualize consumption or cost parameters
- To visualize consumption or cost states •
- To obtain a detailed overview of a production site, or of the combination of several production sites



You may also use B.Data Web to call the stored dashboards.

- 1, 2,
- Large selection of display object templates, for example, pointer instruments, diagrams,
- 3 or status displays.
- 4 Process visualization using dynamic Sankey objects
- (5) Buttons for navigation between multiple dashboards

### **Dashboard notes**

Observe the following information:

Value input

A Dashboard visualizes only values of the following data points:

- "Generic" data point type
- "Derived" data point type
- "Datapoint" data point type

You can visualize values that are calculated based on measurement functions by assigning each measurement function a derived data point.

• Time range

Make sure that you set the time range to be visualized to a sufficient length. Moreover, the data points must contain measurement data for the specified time range.

#### Rules for creating dashboards

Observe the following rules before you start to create a Dashboard:

- Plan the data quantity to be visualized and the corresponding distribution of this data.
- You can distribute large data quantities to several dashboards to improve the overview and performance.

Use a navigation button to switch between the dashboards; create this button in each Dashboard by means of dashboard object "Panel Switch".

• Recommendation: When configuring the refresh cycle for Dashboard, enter the time in seconds e.g. 900 seconds for a refresh cycle of 15 minutes.

You can use the B.Data object "Trend" to visualize the current values.

### Configuring dashboards

Create a graphic overview as follow:

- 1. Create one or several dashboards in the project tree of Plant Explorer.
- 2. Copy the data points to be visualized as nested entry to the Dashboard you created.
- 3. Create the Dashboard layout by compiling the selected dashboard objects in the "Dashboard" editor.
- 4. Assign the selected data points to the dashboard objects used and customize the layout of the dashboard objects.
- 5. If you have created several dashboards for a graphic overview, add one or several buttons to the Dashboard using dashboard object "Panel Switch" and assign the respective Dashboard to each button.

Use these buttons to switch between the dashboards.

6. Open the selected Dashboard in full-screen mode.

The Dashboard displays the values of the data points used for a defined period.

#### See also

Create dashboard (Page 244)

Dashboard objects (Page 648)

Configuring the time range (Page 649)

Example of configuring a dashboard (Page 256)

# 6.5.2 "Dashboard" editor

# Function

Use the "Dashboard" editor to create the layout for your Dashboard.

# Structure of the editor

The "Dashboard" editor has the following structure:

L.		Configuration - [CU Group Overview] – 🗖 🗙	
File Edit View		X	(1)
55 55 <u>66 m</u>	字目 40 目目 日		0
Dashboard pale	ette		
T	0		
RoundRectangle	Ellipse		
	/	Ellipse	
Polyline	Line	Y   Ellipse	
	8	Size Height 115 Width 115	~
Image	Traffic light	Linestyle	2
	V	Width 1 Color	
Value Diff	Value	Fillstyle	
State	Bar Chart	Ellipse	
		Text	
Pie Chart	Line Chart	Fontcolorstyle	
$\odot$		Fontsize 10 Bold Italic	
Gauge	DataTable		
C	${}^{\odot}$	OK Cancel	
Panel Switch	Picker		
Sankey palette			(3)

① Menu bar and toolbar

The menu bar and toolbar provide default commands and icons, for example, for saving files or aligning objects.

② Workspace

You visualize, compile and configure the dashboard objects for your Dashboard on the workspace.

③ Symbol palette

The symbol palette provides all dashboard objects that you can use. You can change between the Dashboard and Sankey palettes.

#### Menu bar of the editor

The menu bar of the "Dashboard" editor has the following structure:

File

The "File" menu is used to save, close or export/import the current Dashboard.

Use the "Export"/"Import" function to make the Dashboard available to other B.Data users.

#### Note

#### Exporting a Dashboard

The exported Dashboard can only be opened on a B.Data system.

Edit

The "Edit" menu commands are used to perform standard document editor actions such as copying or deleting objects.

View

The "View" menu lets you hide or unhide the pallets.

#### Editor toolbar

The toolbar of the "Dashboard" editor has the following structure:

Position

(┺┺┗)ш キ ╞ ル ╡ ┉ ◻ ⊕ ⇔

These icons are used to position dashboard objects on the workspace. These can be used, for example, to place a dashboard object into the background of a different dashboard.

Align

▝▖▚▖▙▐▆▆▆

These icons are used to align dashboard objects on the workspace. You can use them, for example, to align objects to the center.

Size

▝▖▚▖▖▖▖░ ጶ▕▖᠉ ╡ण(▋ ፼ ⇔)

These icons are used to resize dashboard objects on the workspace. You can use them, for example, to resize the width of a dashboard object to fit the width of a different dashboard object.

#### Note

#### Using the toolbar

The toolbar icons are only available if you select several dashboard objects on the workspace.

Press the <CTRL> key for multiple selection of dashboard objects.

Instead of the toolbar icons, you may use the shortcut menu commands of the dashboard objects:

Align Order	· ·
Order	•
Resize	
Configuration	

### See also

Aligning dashboard objects (Page 252) Exporting/importing dashboards (Page 253)

# 6.5.3 Create dashboard

#### Overview

You can create a Dashboard in B.Data setting up a Dashboard in the project tree of Plant Explorer.

#### Procedure

1. In Plant Explorer, select the folder in which you want to create a Dashboard.

🗗 🛃 Sy	stem
÷- 🛅	Customer
	🔄 Data collection
	Calculation Level I Loop / Prototype
	Calculation Level II MEVA's
	🔄 Reports
⊡	🔄 Trends
⊡	🔄 Visualization
<u> </u>	🔄 Dashboard

2. Click the "Dashboard " button in the menu bar under "Analysis > Reporting".

The dialog for creating the Dashboard opens.

Name	- 🗆 ×
CU Group Overview	
	^
	Y
OK	Cancel
	CU Group Overview

- 3. Enter a name such as "CU Group Overview" and an optional description for the Dashboard.
- 4. Click "OK".

### Result

The Dashboard is created in the project tree of Plant Explorer.

🕂 🎦 Dashboard

You can edit the name and description of the Dashboard by clicking "Edit" in the shortcut menu of the Dashboard.

Create the layout for the new Dashboard.

#### See also

Dashboard basics (Page 237) Creating the dashboard layout (Page 245) Example of configuring a dashboard (Page 256)

# 6.5.4 Creating the dashboard layout

#### Overview

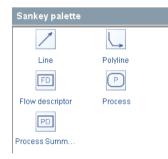
Create a layout for the Dashboard you created. This layout defines the appearance of the Dashboard.

You are provided two pallets, each containing different dashboard objects for creating the layout:

• Dashboard palette: Contains objects such as "Gauge" or "Pie Chart" for creating graphic overviews.



• Sankey palette: Contains objects such as "Process" for creating Sankey charts.

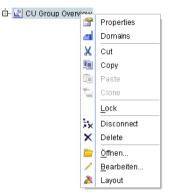


### Requirement

The Dashboard is created.

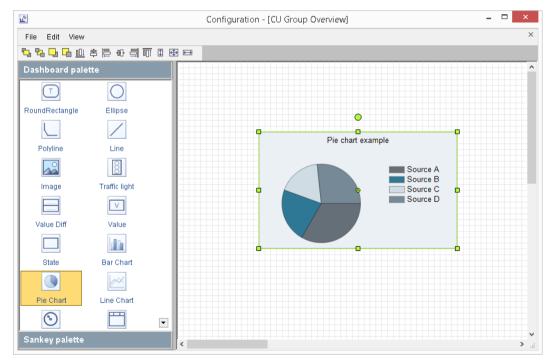
# Procedure

1. Click "Layout" in the shortcut menu of the Dashboard.



The "Dashboard" editor opens.

- 2. Click "Configuration" in the shortcut menu of the workspace to configure the Dashboard.
- 3. In the editor, select the symbol palette that contains the dashboard objects to be used in the layout: Dashboard Palette or Sankey Palette.
- 4. Drag-and-drop the selected dashboard objects from the symbol pallet to the workspace.



The objects are placed into the workspace.

5. Save the layout.

### Result

You have created the Dashboard layout.

Configure the dashboard objects used in order to customize them, or to link them with the selected data points.

## See also

- Create dashboard (Page 244) Dashboard objects (Page 648) "Dashboard" editor (Page 241) Configuring dashboard objects (Page 248) Aligning dashboard objects (Page 252)
- Configuring the dashboard (Page 648)
- Example of configuring a dashboard (Page 256)

# 6.5.5 Configuring dashboard objects

### Overview

After having created the Dashboard layout, configure the dashboard objects to be used as follows:

- Link the dashboard objects with the data points containing the values to be visualized on the Dashboard.
- Customize the appearance of the dashboard objects, for example, the background color or text layout.

#### Note

#### Configuration of the dashboard objects

The following figures show the configuration of the "Pie Chart" dashboard object.

For information about the configuration of other dashboard objects, refer to chapter "Dashboard objects".

### Requirement

- You have created the Dashboard layout and opened it in the "Dashboard" editor.
- The selected data points are set up in the project tree of Plant Explorer.

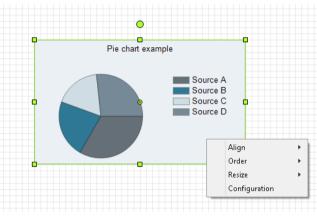
## Procedure

1. Copy the data points that contain the measured values to be visualized to the nested folder of the Dashboard.



2. You configure a selected dashboard object by double-clicking it on the workspace.

Alternatively, you can select the "Configuration" command from the shortcut menu of the dashboard object.



The dashboard configuration dialog opens.

3. Configure the dashboard object to suit your requirements.

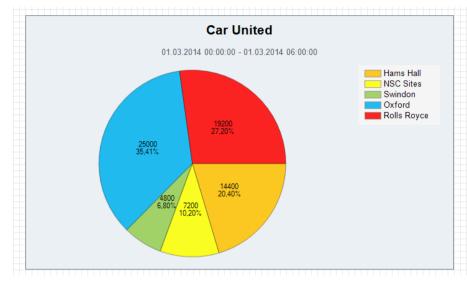
You can customize the "Pie Chart" dashboard object as follows, for example:

- Select "New" to set the number of bars to display in the pie chart.
- Select "Data point" to assign each bar the data point containing the values to be displayed in the pie chart.
- Select "Caption" to specify the text that describes the respective bar in the pie chart.
- Select "Layout" to define the bar colors for the pie chart and activate the selected option for displaying the measured values in the pie chart.

Point1 Point2 Point3 Point4	Data source information           Datapoint         d_consumption_plant_Hams_Hall           Datacycle:         900           Unit:         KWh           Datacycle:         900
°oint5	Legend Text Use  Hams Hall Description Name
	Layout Point color
	Border color Border width 1

- Select "Time range" to define the period from which the measured values are to be displayed in the pie chart.
- Select "Parameters" to define additional settings for the pie chart, for example, the background color or title.
- 4. Click "OK".

#### Result



#### You have configured the selected dashboard object.

You may also configure the background on which the dashboard objects are positioned. Right-click in an empty area of the workspace and select the "Configuration" command from the shortcut menu.

Configure all other objects that are used in your Dashboard, save the layout, and open the Dashboard in full-screen mode.

#### See also

Creating the dashboard layout (Page 245)

Dashboard objects (Page 648)

Displaying the dashboard in full-screen mode (Page 254)

Configuring the time range (Page 649)

Example of configuring a dashboard (Page 256)

# 6.5.6 Aligning dashboard objects

#### Overview

The "Dashboard" editor lets you set up different alignments for multiple dashboard objects. You need a reference object to which you can align other objects. Start by selecting an object in the "Dashboard" editor and define it as reference object.

### Requirement

- The "Dashboard" editor is open.
- You have created the Dashboard layout.

#### Procedure

- 1. On the workspace, select the reference object to which you are going to align other dashboard objects.
- 2. Select the dashboard objects by means of multiple selection.
- 3. Select the command from the toolbar, or from the shortcut menu of the dashboard objects.

#### Result

The selected objects are aligned.

# 6.5.7 Exporting/importing dashboards

## Overview

You can make a Dashboard available to external B.Data users by exporting the Dashboard to a file. Distribute this file, for example, by E-Mail.

B.Data users can now import and use the export Dashboard file on their B.Data system.

# Requirement

You have created the Dashboard and opened it in the "Dashboard" editor.

# Exporting dashboards

1. Select "File" > "Export" from the menu bar.

The dialog for saving the file opens.

- 2. Select the directory and enter the file name.
- 3. Save the file in EDD format, for example, "CU\_Group\_Overview.edd".
- 4. You can send the stored file by E-Mail.

## Importing dashboards

- Select "File" > "Import" from the menu bar. The dialog for opening the file opens.
- 2. Select the file in EDD format and click "Open".

The Dashboard is displayed in the "Dashboard" editor on the workspace.

#### See also

"Dashboard" editor (Page 241)

# 6.5.8 Displaying the dashboard in full-screen mode

## Overview

Once you have created the Dashboard layout and configured the dashboard objects used, you can display the Dashboard in full-screen mode. In full-screen mode, the dashboard is updated with corresponding data at cyclic intervals.

#### Note

#### Specifying the Dashboard update cycle

Specify the update cycle when configuring the Dashboard background.

The update cycle is set to 5 seconds by default.

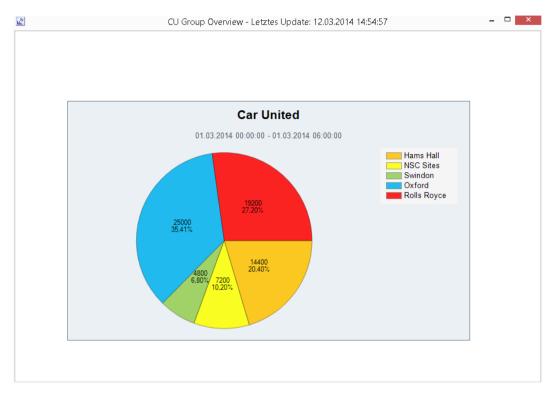
## Requirement

- You have created the Dashboard layout.
- You have configured the dashboard objects used.

## Procedure

1. Select the Dashboard from the project tree of Plant Explorer and right-click "Open" in the shortcut menu.

# Result



### The Dashboard is displayed in full-screen mode.

# Alternative procedure

You can also display the Dashboard in full-screen mode by means of double-click.

# See also

Creating the dashboard layout (Page 245) Configuring dashboard objects (Page 248) Example of configuring a dashboard (Page 256)

# 6.5.9 Example of configuring a dashboard

# 6.5.9.1 Example of creating data points for the dashboard

#### **Overview**

This example shows how you can visualize daily consumption in a week as bar chart in a dashboard. High limit overshoot is also to be visualized graphically.

#### Preparations

You need the following objects for this example:

- 2 data points
- 1 derived data point
- 1 matrix
- 1 measuring variable

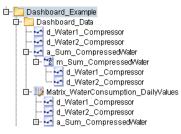
Name	Туре	Cycle	Valid from	Query type
d_Water1_Compressor	Data point	1 d	05.11.2012	-
d_Water2_Compressor	Data point	1 d	05.11.2012	-
a_Sum_CompressedWater1)	Derived	1 d	05.11.2012	-
Matrix_WaterConsumption_DailyValues	-	1 d	-	Month (starting on 01.11.2012)
m_Sum_CompressedWater	Addition with check- sum	-	-	-

1) When configuring the data point, select "Plausibility" to set the "High limit" to "200".

6.5 Creating dashboards

# Creating objects

1. Create a "Dashboard Example" folder and set up the aforementioned objects as follows:



2. Enter the following values in a matrix:

Time stamp	e_Water1_Compressor	e_Water2_Compressor
05.11.2012	50	60
06.11.2012	40	100
07.11.2012	20	60
08.11.2012	30	70
09.11.2012	60	100

3. Conclude your setup by calculating the derived data point for the time period "November 2012".

### See also

Example for creating a dashboard (Page 258)

# 6.5.9.2 Example for creating a dashboard

### Setting up the dashboard

- 1. Set up a new "Dashboard" object and enter the object name "Water Consumption Chart".
- 2. Copy the data points to the structure below the dashboard:

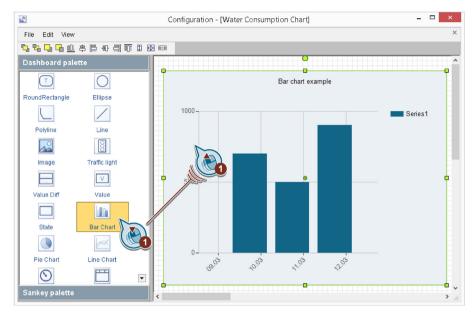
3. Select the "Layout" command from the shortcut menu of the dashboard to configure the dashboard.

The dashboard configuration dialog opens. The left pane displays the "Dashboard palette" by default. Drag-and-drop the dashboard objects from this palette to the workspace.

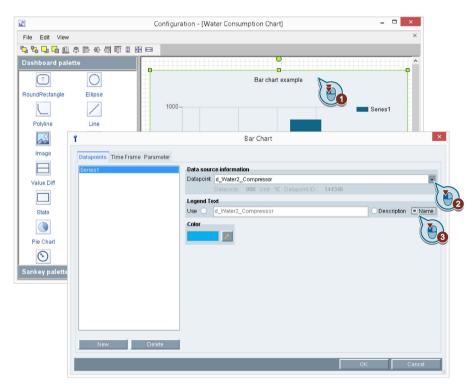
# Creating bar charts with three bars

Use a bar chart to provide a clear overview of data point values.

1. Insert the "Bar chart" dashboard object to visualize consumption values:



2. Select the data point to use for the input of bar values and set the caption text:



The default bar chart consists of one bar. You need three bars to visualize the three data points. Set different bar colors to highlight the difference.

- æ - 0 Configuration - [Water Consumption Chart] File Edit View Dashboard palet -T 0 Bar chart example RoundRectangle Ellipse 1000 -/ Series1 Polyline Line Y Bar Chart  $\sim$ Datapoints Time Frame Parameter Image Data source information Series1 Series2 Datapoint a\_Sum\_CompressedWate Value Diff Legend Text Use 🔘 a\_Sum\_CompressedWater ODescription 🔍 Name State Color 1 Pie Chart  $\odot$ ikey pale D.
- 3. Add two bars and assign these to the other two data points:

#### Interim result

You have set up three bars with the following data point assignments:

- Series 1: e\_Water1\_Compressor
- Series 2: e\_Water2\_Compressor
- Series 3: a\_Sum\_CompressedWater

# Set time range

Use the time range to define the data point values to be displayed. In this example you display the consumption volumes of the week in November from 05.11.2012 to 09.11.2012.

1. Enter the time range to visualize in this bar chart:

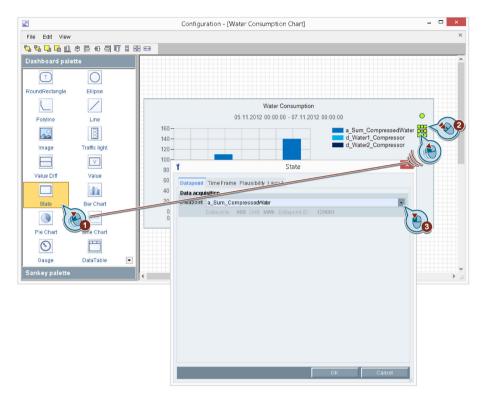
Configuration - [Water Consumption	on Chart] – 🗆 🗙
File Edit View	x
▝ <mark>▖▝▖</mark> ▋ ▋ \$ ₽ ₩ ▋ ₩ ₽ ₽	
Dashboard palette	
	Bar chart example
RoundRectangle Ellipse	
Polyline Line	Series1
	Chart ×
Image Datapoints Time Frame Parameter	
Timeframe	
Value Diff Ourentmer Day	
Value Diff Querytype: Day	*
Example: Data colorition from 12.02.2014.00:00:00 to 12.02.2014.00:	00:00
State       fixed date (Ad hoc):	
From: 05.11.2012 00:00:00 🕒 To: 🛽 11.2012 00:00:00	
Pie Chart from DateTime-Picker.	
Sankey palette Comp Level Filter: Entry values -	
Object refresh	
Refresh cycle 5 [sec]	
	0K Cancel

6.5 Creating dashboards

#### Insert warning when values are exceeded

For example, any limits that you defined for a data point in the "Plausibility" settings can be visualized with color coding in the dashboard. Rule of thumb: Always evaluate only one limit violation in a dashboard object. Use multiple dashboard objects if you have defined multiple limits.

1. Insert the "Status" dashboard object and select the data point:



u? -× Configuration - [Water Consumption Chart] File Edit View ╚ ╚ ┖ ╙ ㅎ ╞ ャ 릐 ╦ ║ @ ⇔ Ţ Ο RoundRectangle Ellipse / Water Consumption 0 05.11.2012 00:00:00 - 07.11.2012 00:00:00 Polyline Line a\_Sum\_CompressedWater 160 -8 140 -Image Traffic light 120 -100 -V × 80 -Ÿ State Value Diff Value 60 -Datapoint Time Frame Pla sibility Lavout dù 40 -Activ 20 -State Bar Chart Upper Limit: 0-05.11 0 Lower Limit: Max Change: Pie Chart Line Chart  $\odot$ Max diff to DP: DataTable • Gauge 0 [1] **\*** 10 [%] Max diff. to previous month: 10 [1] relative 100 [%] Max diff. to previous year: absolute 10 [1] 100 [%] e relative Warninglevel: 25 [%] 4 6

2. Define the limit to be evaluated.

3. Exit the configuration dialog and save the dashboard.

#### Result

The dashboard is configured.

#### See also

Example for displaying a dashboard (Page 264)

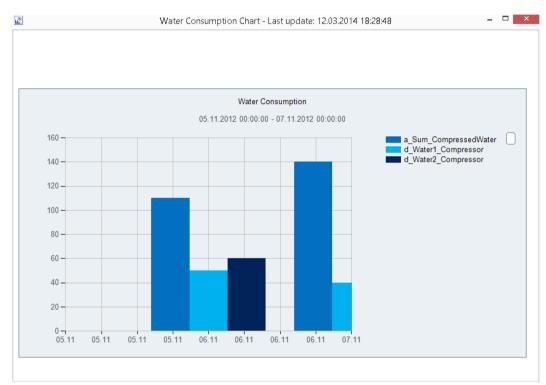
6.5 Creating dashboards

# 6.5.9.3 Example for displaying a dashboard

# Procedure

1. Double-click the dashboard in Plant Explorer.

The dashboard opens. The consumption values of the specified period are visualized graphically:

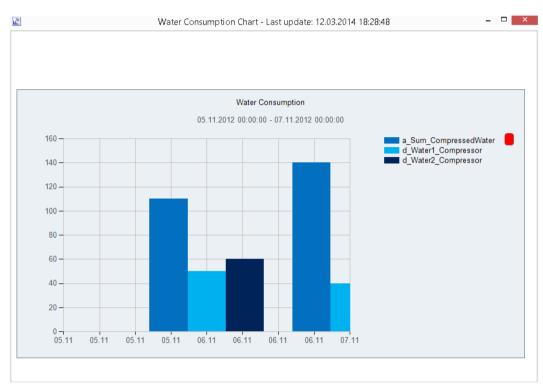


2. Change one of the values of time stamp "08.11.2012" in the matrix to "200".

3. Recalculate the derived data point.

## Result

The high limit of the consumption total is exceeded. The status indicator changes to "red":



# 6.6 Using the Quick Chart

# 6.6.1 Basic information on the Quick Chart

## Overview

You use the Quick Chart to display historical as well as current values as line graph. Use Quick Chart for quick visualization of measurement series.

You can display the values of the following objects in Quick Chart:

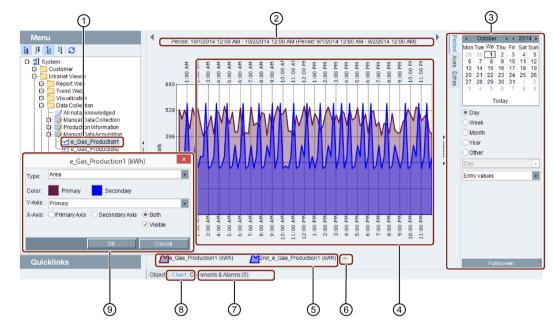
- Datapoints
- Matrix
- Report
- Trend

You can export the displayed Quick Chart in the following form:

- Quick Chart's values as a file in "\*.csv" format
- Quick Chart as a graphic in "\*.bmp", "\*.jpg" or "\*.png" format

Quick Chart is also supported with identical functionality in B.Data Web.

# **Quick Chart structure**



The figure below shows the representation of the Quick Chart in the Plant Explorer:

- ① Object in the Plant Explorer visualized in Quick Chart
- ② Display of the time range

Use the arrow keys to scroll back or forth by one period.

- 3 Configuration area
- ④ Visualization of the datapoints as line graph

Current values are read gradually and displayed. The following update cycles apply to the displayed values:

- 10 seconds in the B.Data Client
- 15 seconds in B.Data Web

The displayed configuration is automatically saved for the active user. The configuration is saved with the object in the database that is displayed in Quick Chart.

- (5) Legend with the datapoints represented in the Quick Chart If you click a datapoint, the configuration dialog (9) opens.
- 6 Inserting an additional datapoint.
- ⑦ Tab with the alarms and comments that are contained in the selected time range.
- 8 "Diagram" tab in the display area of the Plant Explorer
- (9) Configuration dialog for the visualization of a datapoint in (4).

6.6 Using the Quick Chart

# Structure of configuration area

3 Secondary Y - Axes Export. February + 4 2014 + Period (2)Period Mon Tue We Thu Fri Sat Sun 1 2 8 9 15 16 22 23 (4) 30 31 6 7 13 14 20 21 27 28 Y - Axis 1 Axes 29 5 12 19 26 Axes Axes 3 10 11 17 18 24 25 Secondary X - Axis Extras Extras EXUIT None Static Today Day Non Tue We Thu Fri Sat Sur 

 28
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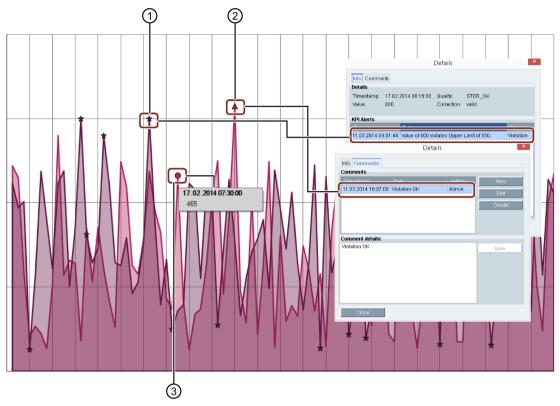
 1 2 8 9 15 16 22 23 Week Month 10 17 Year Other Today Ŧ Entry values Dynamic Period(s) -2 Offset: ∩

The figure below shows the structure of the configuration area:

- ① Full-screen display of the Quick Chart in a separate window
- ② Selection of time range and query type
- 3 Configuration of the X and Y axes
- ④ Exporting the content that is displayed in the Quick Chart

# Display of details in Quick Chart

The figure below shows which details are displayed for the measured values of a measurement series in Quick Chart:



Measured value with exceeded or undershot plausibility criterion ① and user-defined comment ②

Click the measured value to open the "Details" dialog.

Measured value with display of time stamp and value
 Move the mouse pointer across the line graph to open the display.

#### Note

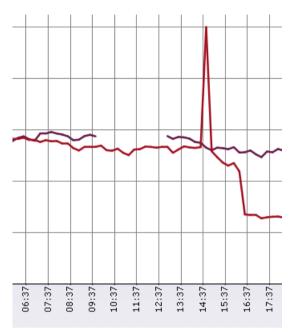
The view is compressed when the Quick Chart includes more than 6,000 measured values in the displayed time range. Not all details are displayed in the compressed view.

In this case, either select a smaller time range or zoom in on an area in the Quick Chart.

6.6 Using the Quick Chart

# **Missing values**

The line of the corresponding datapoint is interrupted when the values are missing in the measured value series of a datapoint.



# See also

Visualizing measured values in the Quick Chart (Page 271) Displaying details in the Quick Chart (Page 272) Exporting a Quick Chart (Page 275)

6.6 Using the Quick Chart

# 6.6.2 Visualizing measured values in the Quick Chart

#### Requirement

Data point, matrix, report or trend has been created.

#### Procedure

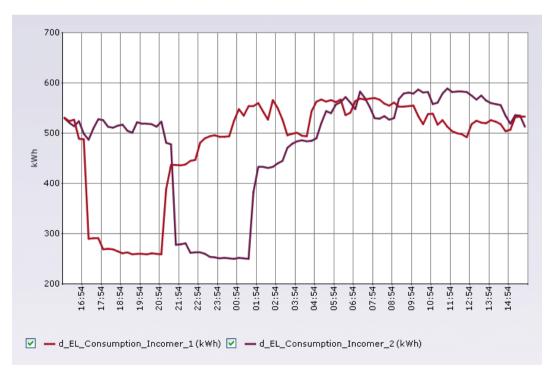
- 1. In the project tree of the Plant Explorer, select the B.Data object whose values you want to analyze in the Quick Chart.
- 2. Click on the "Diagrams" tab in the display area.

The Quick Chart appears. The settings of the selected object are generally applied as query type and compression level. Otherwise the configuration settings saved for the object are used.

- 3. Enter the query type, compression level and time range under "Time period" in the configuration area.
- 4. Define the axis assignment and the display for each data point under "Data points" in the configuration area.
- 5. Save the configuration, if necessary.

### Result

The values of the object are displayed in line graph format in the Quick Chart.



# 6.6.3 Displaying details in the Quick Chart

# Requirement

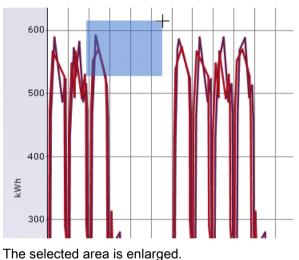
Measured values are displayed in the Quick Chart.

# Procedure

- 1. To enter a comment for a measured value:
  - Click on the measured value.

The "Details" dialog opens.

- Go to the "Comments" tab and click "Add".
- Enter the comment text.
- 2. To enlarge the display area:
  - Holding down the mouse button, enlarge the required area in the display area.



- To return to the original view, click "Original size".

# See also

Basic information on the Quick Chart (Page 266)

6.6 Using the Quick Chart

# 6.6.4 Compare a datapoint's values to different time ranges

### Introduction

You can compare the values of one or more datapoints that are displayed in the Quick Chart with the values from a different time range. The other time range is displayed as a secondary X axis on the upper border of the Quick Chart. Query type and compression were taken from the primary X axis.

The time range of the secondary X axis is either static or dynamic:

- Static: Fixed starting time in the past or future. Use the calendar to select the time range.
- Dynamic: Offset in periods relative to the time range of the primary X axis. A negative value means an offset in the direction of the past.

#### Requirement

A datapoint is visualized in the Quick Chart.x

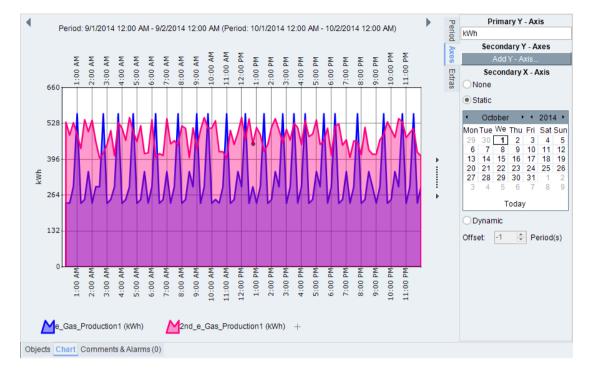
## Procedure

- 1. In the configuration area, under "Axes", select either "Static" or "Dynamic":
- 2. If you have selected "Static", select the desired starting time in the calendar.
- 3. If you have selected "Dynamic", enter the desired value for the period offset under "Offset".
- 4. In the legend, click the datapoint, whose values should additionally be displayed in the secondary X axis.

The configuration dialog is opened.

- 5. If you only want to display the comparison values, select "Secondary axis".
- 6. If you want to display the initial and comparison values, select "Both".

# Result



The datapoint's values are displayed in addition to the time range of the secondary axis. The datapoint is automatically inserted into the legend with the prefix "2nd\_".

# 6.6.5 Exporting a Quick Chart

## Introduction

You can export the values from a Quick Chart that is displayed on the screen:

- as a file: Values are exported in the "\*.csv" format as a comma-separated file, which you can edit for example in MS Excel.
- as an image: The graphics formats "\*.bmp", "\*.jpg" and "\*.png" are supported.

If you enlarge a section of the Quick Chart, only the measured values that are contained in that section are exported.

## Requirement

- The Quick Chart is displayed.
- The configuration area is displayed.

#### Exporting the Quick Chart's values to a file

To export a Quick Chart's measured values to a file, follow these steps:

1. In the configuration area, under "Extras", click "Export values as CSV...".

The "Save as" Windows dialog is displayed.

2. Enter a name for the file.

#### Result

The Quick Chart's measured values are saved in a file in "\*csv" format. You can open the file, for example in MS Excel. Each datapoint contained in the Quick Chart is displayed as a separate column. The first column contains the timestamp.

e_Gas_Production2 - Notepad -	□ ×
File Edit Format View Help	
MSJO_DATUM;e_Gas_Production2	^
05.10.2014 22:15:00;516	
05.10.2014 22:30:00;641	
05.10.2014 22:45:00;589	
05.10.2014 23:00:00;418	
05.10.2014 23:15:00;309	
05.10.2014 23:30:00;676	
05.10.2014 23:45:00;524	
06.10.2014 00:00:00;499	
06.10.2014 00:15:00;380	
06.10.2014 00:30:00;683	
06.10.2014 00:45:00;488	
06.10.2014 01:00:00;551	<b>v</b>
<	> .∄

6.6 Using the Quick Chart

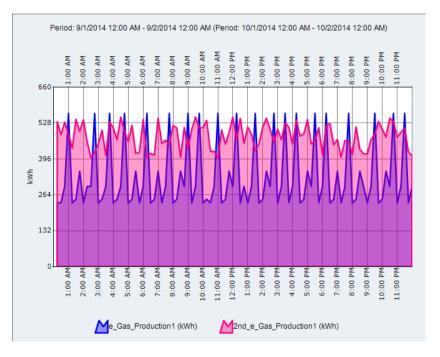
# Exporting a Quick Chart as an image

To export a Quick Chart data as an image, follow these steps:

- In the configuration area, under "Extras", click "Export chart as image...".
   The "Save as" Windows dialog is displayed.
- 2. Enter a name for the image, and select the desired graphics format.

# Result

The displayed Quick chart is saved as a graphic.



# See also

Basic information on the Quick Chart (Page 266)

# Historizing calculation logic

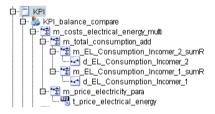
# 7.1 History management basics

#### Definition

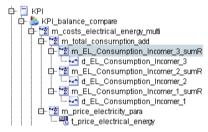
The history management in B.Data saves every change to the configuration of a calculation. This enables the tracing and reconstruction of the configuration of a calculation at any given instant.

## Example

One year ago, you configured a report for the calculation of the power costs of two loads.



In the course of the year, you have added the calculation of a third load.



Now you are required to reconstruct the report for the calculation of the power costs of two loads at a specific time. To do this you use the history management of the report:

- 1. In the history management with monitoring time stamp, look for the configuration that you want to reconstruct.
- 2. When generating the report under "Model", enter the required monitoring time stamp.

The report is generated using the configuration data saved under the specified monitoring time stamp.

#### Note

#### Versioning measured values

In order to correctly reconstruct the report, when generating the report, enter the version of the measured values valid at the time of the specified monitoring time stamp.

## 7.1 History management basics

## Objects for history management

You can display configuration changes for the following B.Data objects:

- Data point of type "Derived"
- Measuring variable
- Report

The following configuration data are displayed during the history management of objects:

Configuration	Meaning
Calculation tree	Shows objects of the calculation and their order in the calculation tree.
Туре	Shows the type of the object, e.g. "Module".
	"Type" is only used in the history management of the reports.
Name	Displays the name of the object.
Function	Displays the function of a data point or of a measuring variable, e.g. "Measure- ment" or "Addition of MEVAs".
Operation	Displays the type of change to the object, e.g. "Delete".
Unit	Displays the unit of a data point or measuring variable, e.g. "kWh".
Changed on	Displays the date when the change was made to the object.
Changed by	Displays the user who made the change to the object.
Description	Displays the description of the changed object.

The following restrictions apply to the history management of reports:

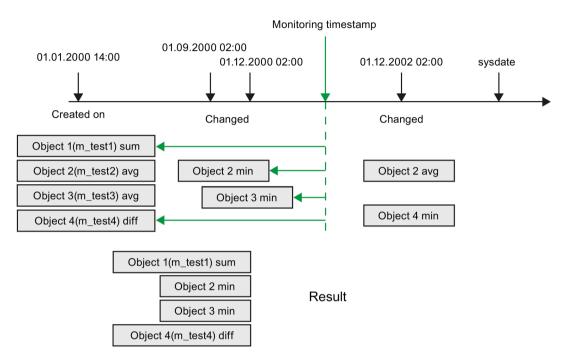
- No history is kept of report templates.
- No history is kept of start values.
- Automatically generated reports are only calculated with the current configuration data.
- Reports that are generated in B.Data Web are only calculated with the current configuration data.
- Specific modules, e.g. plausibility modules, are only calculated with the current configuration data.

## Display types for history management

During object history management you can select one of the following display types:

Only state

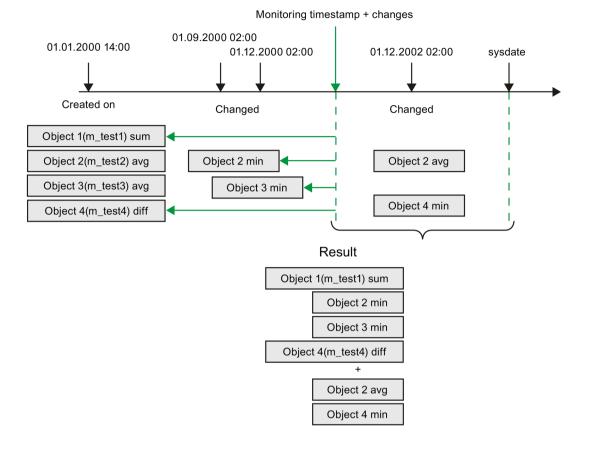
If you select this display type, the current calculation tree and the configuration data are displayed for the required monitoring time stamp.



• From timestamp

If you select this display type, the current calculation tree and the configuration data up to the required monitoring time stamp are displayed, including all changes.

## 7.1 History management basics



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# 7.2 History management of data points

# Procedure

- 1. Select the data point for which you want to view the historization.
- 2. Select the "History management" command from the shortcut menu.
- 3. You first have to select a date to call the corresponding configuration. After having selected the time stamp, you may also select a view.
- 4. Click "Calculate" to display the tree that is currently available for the selected time. Depending on the view you selected, the configuration status that is valid at the selected time is displayed in the list box. If the "From timestamp" view has been enabled, all changes up to the current time are included in the list box.

The log for data points includes changes to units and functions. The log for derived data points also includes changes to the assigned Meva.

History management – 🗆 🗙								
Measurement variable: a_gas_TOTAL_energy_derived Observing timestamp: 10.03.2014 12:51:03 ● View: I Only state From timestamp Start Define validity period Excel								
a_gas_TOTAL_energy_derived (Derived datapoint)     a_m_gas_TOTAL_energy_multi (einget)     d_bowerrate_B_TOTAL_volume_sumR (Meva) einget)     d_bowerrate_B_TOTAL_ass_S (einget)     d_comerrate_B_TOTAL_gas_S (einget)     d_comerrate_B_TOTAL_para (Parameter)     d_test ( eingef)								
Name	Function	Operation	U		Cha			
d_powerrate_B_TOTAL_ga	i6_S	Insert		26.02.2014 11:25:40	ADMIN	eingef.		
t_test	-	Insert		26.02.201411:25:41	ADMIN	eingef.		
m_Gas_HeatingValues_pa m_gas_TOTAL_volume_su		Insert Insert	NIm3	26.02.201411:25:41	ADMIN ADMIN			
m_gas_TOTAL_volume_su m_gas_TOTAL_energy_m		Insert	INITI-	26.02.2014 11:25:41	ADMIN	eingef.		
a_gas_TOTAL_energy_der		Func changed	ki/Vh	26.02.2014 11:25:41				
Cancel								

7.2 History management of data points

- 5. Select "Define validity period..." to open the "Model" dialog for specifying the models for derived data points.
- 6. Click "Add", "Edit", or "Delete" to specify or edit the various validities of the models.

-	Model – 🗆						
Modeldate 10.03.201412:51:03	Startdate 11.03.2014 12:53:59	Stopdate 01.01.2040 00:00:00	New Edit				
			Delete				
		ОК	Calculate Cancel				

#### Note

It is not permitted to conclude a model within an interval of the derived data point. Example: If a derived data point has been assigned a monthly interval, the model may only change accordingly to the first day of a month (01.xx. 00:00).

Automatic recalculation of the derived data point is not initiated when models are being changed. You can click "Calculate" to open a dialog for entering the period for recalculating the derived data point if its calculation rule has been changed. The last model is always assigned the stop date 01.01.2040.

• <b>•</b>	Model	×
Model date:	10.03.2014 12:51:03	
Start date:	<b>11</b> .03.2014 12:53:59	
	ОК	Cancel

However, this is based on the condition that "current model" was not activated in the definition of the derived data point. If activated nonetheless, the defined models are not activated and the calculation is always based on the current model.

7.3 History management of measure variables

# 7.3 History management of measure variables

# Procedure

- 1. Select the measuring variable for which you want to view the historization.
- 2. Select the "History management" command from the shortcut menu.
- 3. You first have to select a date to call the corresponding configuration. After having selected the time stamp, you may also select a view.
- 4. Click "Calculate" to display the tree that is currently available for the selected time. Depending on the view you selected, the configuration status that is valid at the selected time is displayed in the list box. If the "From timestamp" view has been enabled, all changes up to the current time are included in the list box.

After changes have been made to a Meva function, "Func Changed" is entered as operation. The entry always contains the currently valid function. The description field contains entries for both the old and new functions. The "Unit Changed" operation is entered, or the description field lists the old or new function, after units have been changed.

"Insert" is entered as operation after a data point has been connected to the tree. "Delete" is entered as operation if the data point is removed again. To view the "Delete" operation, switch to the "From time" mode. The "Insert", "Delete", or "Unit Changed" operations are also logged for the parameters.

*Ê			Hi	story managemen	t		-		×
	TOTAL_ener 014 12:55:11 start		✓ On	ly state 🗌 From time:	stamp				
	□-								
Name	Functi	Operation	U	Changed at	Cha	Descri			
a_gas_TOTAL_energy_derived		Insert		26.02.2014 11:25:41	ADMIN	eingef.			
m_gas_TOTAL_energy_sumR Sum real Func changed K/Vh 26.02.201411:25:41 ADMIN Sum real									
				Cancel					

5. Click "Excel" to open an Excel spreadsheet in order to insert the data that is displayed for further use. Click "Close" to exit the dialog.

The history of objects is retained for their entire life time in the system.

7.4 History management of reports

# 7.4 History management of reports

#### **Overview**

The following report attributes are included in the log:

- Objects in the calculation tree and their order. Example: Which data points or parameters were connected at a specific time to a module or Meva node and their order.
- MEVA: function and unit
- Measurement: Unit
- Parameter: Substitute value
- Module: Module type

#### Procedure

- 1. Select the report for which you want to view the historization.
- 2. Select the "History management" command from the shortcut menu.
- 3. You first have to select a date to call the corresponding configuration. After having selected the time stamp, you may also select a view.
- 4. Click "Calculate" to display the tree that is currently available for the selected time. Depending on the view you selected, the configuration status that is valid at the selected time is displayed in the list box. If the "From timestamp" view has been enabled, all changes up to the current time are included in the list box.

All changes with regard to "Insert", "Update" and "Delete" operations of modules, connected data points and Mevas are included in the log.

Report:	Plant Performance				
History perio	d: 10.03.2014 12:56:29	<ul> <li>View:</li> </ul>	Only state From f	timestamp	
	Start				
🕞 🚍 Plai	nt Performance				4
1 🚍 - 🖨	Name				
	m_consumption GAS sum	۱R			
	m_consumption Electricit	y sumR			
6	🖻 m_costs Gas multi				
	m_costs Electricitymulti				
	🖻 m total costs add				
	-				
	m_roduction_consumpt	tion_div			
	-	tion_div	changed at	changed by	
	m_Production_consumpt	_	changed at 12.04.2013 09:33:36	changed by BDATA_SYS	
Type	m_Production_consumpt           Name	Operation	-		
Type Bericht	m_Production_consumpt Name PlantPerformance	Operation Update	12.04.2013 09:33:36	BDATA_SYS	
Type Bericht Modul	<ul> <li>m_Production_consumpt</li> <li>Name</li> <li>Plant Performance</li> <li>Balance</li> </ul>	Operation Update Insert Update	12.04.2013 09:33:36 24.03.2011 09:32:40	BDATA_SYS BDATA_SYS	,
Type Bericht Modul Modul	<ul> <li>m_Production_consumpt</li> <li>Name</li> <li>Plant Performance</li> <li>Balance</li> <li>Protocol</li> </ul>	Operation Update Insert Update	12.04.2013 09:33:36 24.03.2011 09:32:40 24.03.2011 09:55:13	BDATA_SYS BDATA_SYS BDATA_SYS	
Type Bericht Modul Modul Meva	<ul> <li>m_Production_consumpt</li> <li>Name</li> <li>Plant Performance</li> <li>Balance</li> <li>Protocol</li> <li>m_Production WwsumR</li> </ul>	Operation Update Insert Update Insert	12.04.2013 09:33:36 24.03.2011 09:32:40 24.03.2011 09:55:13 25.03.2011 03:48:50	BDATA_SYS BDATA_SYS BDATA_SYS BDATA_SYS BDATA_SYS	

7.4 History management of reports

5. At the start of reporting, you can select the model(date) that is to be used to calculate the report. The measured values that are valid at this point in time (version) should be used accordingly for calculations.

3		Start Report			- 🗆	×
Module Common	Parameter Query Type: Ad-Hi	DC				• ^
😓 balance	From 09.03.201	4 00:00:00	<b>To</b> 10.0	13.2014 00:00:00	•	
😓 protocol	Advanced Paramete	r			;	\$
	Version Current 10.0	)3.2014 12:18:16 💌	Model Current		•	
	Compression Level:	Entry values				-
	Batches:					
	Keep:	□.				
	Country:	Germany				-
						~
Cancel			Back	Next	Start	

6. To disable the display of the model date in the header data of the report, assign the value 0 to the name "Show Model" in "Administration > B.Data Options > Appl.".

The model date is displayed in the header data of the report by default: Show Model = 1.

	A	В
1	Date	03.05.2009 12:07
2	From	01.04.2009
3	То	01.05.2009
4	User	
5	Query Type	Ad-Hoc
6	Name	Seabird_Report - f
7	Description	
8	Кеер	no
9	State	Finished
10	Version Date	26.04.2009 12:07
11	Model Date	26.04.2009 12:07

#### See also

B.Data options (Page 373)

7.4 History management of reports

# Schedule management

# 8.1 Basic information on schedule management

#### Definition

The B.Data schedule management is used to plan and forecast the energy requirements of your company for a time period which can be freely selected.

#### Usage

Planning and forecasting are preconditions for sustainable energy management. This is facilitated by generating forecasts of the energy requirements and load profiles for one or several locations, individual consumers, production areas, or buildings.

Energy requirements planning for a specific time period returns procurement benefits due to the tiered tariff systems of the energy providers. Maximum financial benefits are achieved at the following conditions:

- The difference between the expected and actual consumption is kept to a minimum.
- Load peaks are shifted to tariff times during which energy generation is at a lower cost.

#### Demands on an energy management system

Load peaks in industrial plants are primarily determined by production processes, as well as shift or product cycles. The forecasting methods may differ even among different plant units:

- Forecasting in pulp mills, for example, is usually based on production quantities. The shredder and waste paper units are only in operation as required, which is why forecasting is based on production plans.
- By contrast, forecasting in the automobile industry is based on shift schedules.

#### Implementation in B.Data

B.Data supports the following methods for planning and forecasting:

- Comparison days and shift model
- Production plans
- Daily consumption values

The forecasts can be compared with the ACTUAL data in future analyses.

8.1 Basic information on schedule management

### Comparison day principle

The comparison day principle is based on shifts or type days that are examined across a reference time period, such as a quarter. The energy demand is calculated depending on the scheduled days and associated plant operating times.

- Examples of type days: Workday (8 hours), workday (6 hours), workday (10 hours), holiday
- Examples of shifts: Morning shift, evening shift, night shift, special shift

Usually, you plan type days on a weekly basis, while flexible planning without committing to an entire week is also possible. Holidays and other non-working days are taken into account automatically.

Use the calendar to react to changes: You can change type days or shift these to other weekdays. Therefore, your forecasts are always up-to-date.

The forecast result can be corrected, for example, to compensate for production data or temperature effects in order to provide a uniform basis for comparison. Evaluation of the forecast quality, i.e. the comparison with ACTUAL data, concludes the forecast. The result may affect the next forecast.

#### Forecasting based on production planning

With forecasting based on production planning, energy consumption is calculated based on the production quantities or batches to be produced. A stable relation between power consumption and batches/quantities is a prerequisite for this. The production plan defines the product and quantity to be produced. Along with each product, corresponding product parameters are defined for each medium. B.Data also supports you in calculating the product parameters.

You can define the production plan directly in B.Data or by means of a predefined Microsoft Excel file. You may also import data from a production planning system, e.g in "CSV" or "XML" format.

If you define the production plan using an Excel file, the Excel spreadsheet must have the following structure:

× N	licrosoft Excel - Pro	duktionsplan_Werk.	xls					
🗐 Datei Bearbeiten Ansicht Einfügen Format Extras Daten Eenster ?						Frage hier eingeben 👻 💶 🗗		
: 🗅	💕 🔒 👌 🎒	💁 🗳 🛍 🖌 🗈	1 🔁 = 🛷   🗉 = 🖓 =	🌏 Σ - 21 👬 🛄 🦓 100%	• 💿 🖕			
Aria	al 💽 10	• F K U	= = = 🔤 🛒 % 🚥	% %   準 準   🖽 - 🖄 - 🔺				
	K22 🗸	f&						
	A	В	C	D	E	F	G	~
1	Produktions- und Verfügbarkeitsplanung Werk							
2	1	Prozesse						F.
3	1	Korrekturfaktor						-
4	Werk 1.10							
			<b>B</b> 110		Geplante	Korrektur		
5	VON	BIS	Produkttyp	Bezeichnung	Menge	Faktor	Kommentar	
6	01.03.08 00:00	02.03.08 12:00	Stillstand Werk	Stillstand Werk	0			_
7	02.03.08 12:00	15.03.08 04:00	Sonderschicht Werk	Sonderschicht Werk	200			
8	15.03.08 04:00	20.03.08 00:00	Sonderschicht Werk	Sonderschicht Werk	135			
9	20.03.08 00:00	21.06.08 18:00	Revision Werk	Produktionsunterbrechnung	10		geplante PU	~
н н	▶ ▶ \Produktions	plan / Korrektur / P	roduktions INFO / Hilfe /	<			<b></b> ) (	>

8.1 Basic information on schedule management

#### Note

Note that only the following entries are imported from the Excel file:

- Entries in which the "TO" time stamp is in the future.
- Entries in which the "FROM" time stamp is not older than five days.
   You can change the number of days under "B.Data Options > Database > Productplan\_limit".

Before the data import, the table contents in question are deleted and reentered.

### Forecasting based on daily values

Forecasting based on daily values is based on previously acquired ACTUAL values. In this case, the energy consumption is allocated to each daily production. In the forecast, you then calculate the expected energy requirements as a function of the expected production quantity.

You can analyze the daily production quantities and corresponding consumption data with the help of a regression analysis. The parameters for the linear equation  $y = k \cdot x + d$  that are mapped in B.Data are derived from this analysis. Once the planned production quantity has been defined, calculate the energy demands to be expected.

### See also

Configuring the plant (Page 311) Task Management (Page 396) 8.2 Creating a profile

# 8.2 Creating a profile

# 8.2.1 Basic information on profile

Based on the comparison day principle, you can generate media consumption forecasts at any time using a combination of master profiles, profiles, typical days, and special effects.

The next chapters cover the following components:

- Status
- Typical days
- Profiles
- Master profiles

# 8.2.2 Configuring states

### Overview

States are used to set the default values for a typical day, or, for example, to distinguish between the days in the high tariff period (HT, value=1) and in the low tariff period (LT, value=0). These values are evaluated using special measuring variable functions.

### Note

The HT (high tariff) and LT (low tariff) states have already been generated as domain data and cannot be deleted.

# Procedure

- 1. Select the folder in which the status is going to be created.
- 2. Click the "Insert Status" button in the menu bar under "Processing > Profile".

SIEM	ENS					
File	Acquisition	Processing	Analysis	Master C	)ata Administration	Help
Choose	हुट Datapoints to Ex	port Allocation		5 🖳 🤅 rofile	🕽 📭 📰 📫 🏝 🔌 Plant and Material	
🛃 Syste	m 🕨				sert State Inserts a new State be	low
Men	u			2	selected node.	1011

#### The "Status" dialog opens.

<u>8</u> -1		State - L	Г	-		×
Name:	ц					
Description:	Low Tariff					
Value:		1	Unit: 1			-
Color:						
9			0K	C	ancel	

- 3. Enter a meaningful "Name" and optionally a "Description".
- 4. Enter the required "Value" and its "Unit".
- 5. Select a color, if necessary, and confirm with "OK".

# Result

You have successfully configured the status and it is now ready for use.

### See also

Configuring a shift (Page 294)

8.2 Creating a profile

# 8.2.3 Configuring typical day

### Overview

Typical days describe the progression of consumption for a defined consumption unit in the course of a day. Such days can also be used to forecast a "typical" future consumption. The typical day may also be defined based on shift data.

# Requirement

- The typical load distribution is known.
- The necessary status or shift data has been created in the system.

### Procedure

1. Select the folder under which the typical day is going to be created.



2. Click the "Insert Day" button in the menu bar under "Processing > Profile".

SIEM	ENS					
File	Acquisition	Processing	Analysis	Master Da	ta Administration	Help
Choose	हैंट Datapoints to Ex	port Allocation		s 🖬 🤤	🍺 🔡 🖶 🍝 🌂 Plant and Material	2
🛃 Syste	m 🕨			Insert Typi	i <b>cal Day</b> erts a new Typical Day	
Men	u				w selected node.	

#### The "Typical Day" dialog opens.

5			Тур	ical Day -	мо		-		×
Name:	MO								
Description:	Monday								$\hat{}$
									~
Day Transitio	on: 00:00	-							
Active Mode     Profile	e: O Shifts								
From	To	State	Value	Unit				lew	
					I			Edit	-1
								elete	
								Fill	- 1
								plit	
						Copy With Headers	3		
						ОК	C	ancel	

3. Enter a descriptive "Name" and an optional "Description" and confirm your entries with "OK".

- 4. Complete the same procedure for the remaining days of the week, including the necessary special days (holidays, special shifts, bridging days, production downtimes).
- 5. You can now enter the values manually for each typical day. Select "Insert..." to enter the status and the respective valid FROM-TO time range.

Status corresponds with a default value that may be or has to be changed.

This option is frequently used to handle slight periodic fluctuation of status values. Examples: "value 1" from 00:00 to 12:00 h and "value 2" from 12:00 to 24:00 h.

5	Typical Day State	- 🗆 🗙
From: 00:00 🛟		To: 📴:00 🛟
State: LT		•
Value:	1 Unit: 1	•
	ОК	Cancel

6. The "fill" option is used to handle a smaller pattern of values, e.g. 1 h pattern. You may also specify a cycle time.

However, in order to form a basis for a realistic forecast, the 1 h values are determined automatically by means of analysis report and written to the database.

5		Турі	cal Day	/ State	- 0		×
From:	01:00 🛟				To: 01	:00	:
State:	нт						•
Value:			2	Unit: 1			•
				ОK	Cano	el	

### Result

You have successfully created the typical day and it is now ready for use.

### See also

Configuring a shift (Page 294)

8.2 Creating a profile

# 8.2.4 Configuring a shift

### Introduction

Use the "Shift" object to subdivide a day into several shifts. In addition you can use Status, for example, to assign different tariff information to each shift. If you use a "Shift" object beneath a query type, you can query time range by shift.

### Requirement

Statuses have been created.

# Procedure

- 1. Select the folder in which the shift will be created
- Click the "Insert shift" button in the menu bar under "Processing > Profile". The "Shift" dialog opens.
- 3. Enter a meaningful "Name" and optionally a "Description".
- 4. Select the time that will be interpreted as the "Day transition".
- 5. To define a shift, click "New".

The "Shift status" dialog opens.

6. Enter the "Duration", and select the desired "Status".

Ū	,			Shift - 3-	8_shift		- □	×
	Name:	3-8_shift						
1	Description:							^
	Day Transiti	on: 00:00						~
	From △	То	State	Value	Unit		New	
	00:00	08:00	NULL	0	-			
	08:00	16:00	NULL	0	-		Edit	
	16:00	00:00	NULL	0	-		Delete	
							Fill Split	
							John	
					Copy	With Headers		
						OK	Cancel	

### Result

The "Shift" object has been created.

# 8.2.5 Configuring profiles

# 8.2.5.1 Configuring profiles

### Overview

A profile is used to configure the consumption of a typical week with the help of type days.

You can employ two modes to configure a profile:

- "Weekly": Configuration of a fixed sequence of seven days. In the "Weekly" mode, assign type days to the weekdays. The type day "Default" is assigned to a weekday by default.
- "Day sequence": Configuration of a flexible day sequence. Select the type days for the "Day sequence" mode and specify their sorting order for the profile.

#### Note

You must activate the calendar to enable the use of the "Day sequence" mode.

# Requirement

The type day is configured.

# Procedure

- 1. Select the folder in which you want to configure a profile from the structure tree of Plant Explorer.
- 2. Click the "Insert Profile" button in the menu bar under "Processing > Profile".

The "Profile" dialog opens.

3. Enter a unique name and an optional description for the profile.

8.2 Creating a profile

- 4. Proceed as follows to configure a profile on a weekly basis:
  - Select the "Weekly-based" mode.
  - Assign the weekday a configured type day of selecting the type day from the weekday selection list.
  - Click "Edit" click the type day.

*	Profile - Profile Factory	_ 🗆 🗙
Name:	Profile Factory	
Description:		^
		~
Active Mode		
MO: Stand	ard 🗖	Edit
TU: Stand	ard 🔽	Edit
WE: Stand	ard 🗖	Edit
TH: Stand	ard 🔽 📘	Edit
FR: Stand	ard 🗖	Edit
SA: Stand	ard 🗖	Edit
SU: Stand	ard 🗖	Edit
Use	Calendar	
Handle holid	aysas: Standard 🔽	
Ci	ountry: Austria	Holidays
	OK	Cancel

- Confirm the configuration with "OK".
- 5. Proceed as follows to configure a profile on a daily basis:
  - Select the "Daily sequence" mode and then click on "New".
  - Select one or several type days.

*	Profile - Profile Factory	- 🗆 🗙
Name: Description:	Profile Factory	^ ~
Active Mode		
	Holiday nal day (06:00 - 12:00) 9,15-00	New
🚡 Standar		Delete
		Up
		Down
Use	Calendar	
Handle holid	aysas: Standard	
C	ountry: Austria	Holidays
	OK	Cancel

- Confirm the configuration with "OK".
- Select "Use" to activate the calendar.

# Result

The profile is configured. Configure the holidays that you want to take into account for the profile. Open the calendar to edit the profile, or to display a graphic diagram of the profile.

### See also

Configuring typical day (Page 292) Selecting holidays for profile (Page 298) Using a calendar for a profile (Page 300) 8.2 Creating a profile

# 8.2.5.2 Selecting holidays for profile

### Overview

Select the holidays that you want to take into account for the profile.

### Requirement

- The profile is configured.
- You have configured the country and its regional holidays.

#### Procedure

1. Double-click the selected profile in the Plant Explorer.

The "Profile" dialog opens.

- If the holidays are to be treated as a type day, select the relevant type day under "Treat holidays as".
- 3. Click on "Holidays".

The "Holidays" dialog opens.

4. To select a holiday of a specific country for the profile, click "New" and then select the corresponding country and its holiday.

You can edit the selected holiday in the "Holiday profile" dialog.

*	Profile Holiday	- 🗆 ×
Country	Germany	•
Holiday	24.12.2014, Heiliger Abend (D)	•
Type Da	ay: Sa, Su, Holiday	<ul> <li>Apply to all years.</li> </ul>
State:	✓ Active	
	0	Cancel

5. To select all holidays of a specific country for the profile, click "import" and then select the country.

You can edit the selected holidays in the "Holidays import" dialog.

<b>L</b>	Holidays Import	-		ĸ
From Country:	Germany			•
Type Day:	Standard			-
State:	Active			
	ОК	Ca	ancel	

6. Confirm the configuration with "OK".

# Result

# You have selected the holidays for the profile. You can edit or delete the configured holidays.

Date 🔷 🛆	Name	Active	Type Day	Apply to All Years 🤞	Year:
01.01.2012	Neujahr (D)	✓	<sa, holid<="" su,="" td=""><td></td><td>All</td></sa,>		All
06.01.2012	Heilige drei Könige (D)	•	<sa, holid<="" su,="" td=""><td></td><td></td></sa,>		
06.04.2012	Karfreitag (D)	✓	<sa, holid<="" su,="" td=""><td></td><td>New</td></sa,>		New
06.04.2012	Karfreitag ()	•	<sa, holid<="" su,="" td=""><td></td><td>Edit</td></sa,>		Edit
08.04.2012	Ostern (D)	~	<sa, holid<="" su,="" td=""><td></td><td></td></sa,>		
09.04.2012	Ostermontag (D)	✓	<sa, holid<="" su,="" td=""><td></td><td>Delete</td></sa,>		Delete
01.05.2012	Tag der Arbeit (D)	•	<sa, holid<="" su,="" td=""><td></td><td>Import</td></sa,>		Import
17.05.2012	Christi Himmelfahrt (D)	~	<sa, holid<="" su,="" td=""><td></td><td></td></sa,>		
27.05.2012	Pfingsten (D)	~	<sa, holid<="" su,="" td=""><td></td><td></td></sa,>		
28.05.2012	Pfingstmontag (D)	~	<sa, holid<="" su,="" td=""><td></td><td></td></sa,>		
15.08.2012	Mariä Himmelfahrt (D)	<b>v</b>	<sa, holid<="" su,="" td=""><td></td><td></td></sa,>		
03.10.2012	Tag der Deutschen Einheit (D)	~	<sa, holid<="" su,="" td=""><td></td><td></td></sa,>		
03.10.2012	Tag der Deutschen Einheit ()	~	<sa, holid<="" su,="" td=""><td></td><td></td></sa,>		
31.10.2012	Reformationstag (D)	~	<sa, holid<="" su,="" td=""><td></td><td></td></sa,>		

# See also

Configuring profiles (Page 295)

8.2 Creating a profile

# 8.2.5.3 Using a calendar for a profile

### Overview

Use the calendar to edit the configured day sequence, or to display a graphic diagram of the sequence.

Application example: You define a sequence with rollout for one quarter in the calendar. You can always respond to changes such as special shifts in the calendar. This functionality always keeps your consumption data and forecasts up to date.

The calendar consists of the following components:

- Detail view: Provides a graphic view of daily and shift information. The type days and shifts configured in the profile can be modified in the detail view.
- Monthly view: Allows you to select one of several days for visualization in the detail view. You can use the <CTRL> or <SHIFT> keys to select several days.
- Type day: Shows all type days you have configured.

### Requirement

The profile is configured.

### Procedure

1. Double-click the selected profile in the Plant Explorer.

The "Profile" dialog opens.

- 2. Activate "Use" and then click "Calendar".
- 3. To transfer the configured day sequence to the calendar, click "Rollout" and select the time range.

The start date is set to Monday by default.

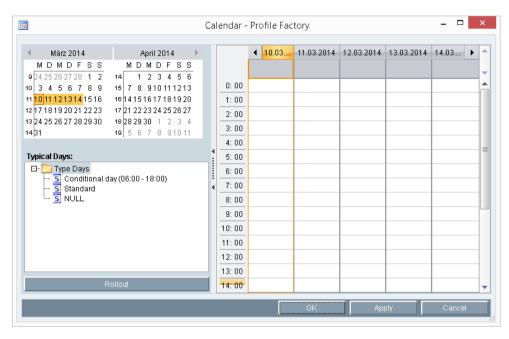
4. Confirm the configuration with "OK".

The day sequence is entered in the calendar.

- 5. To select all elements of a type day, click "Select day elements" in the shortcut menu of the type day.
- 6. To delete a type day, click on "Delete day(s)" in the shortcut menu of the type day.
- 7. To add a type day, select a type day under "type day", or drag-and-drop it to the calendar.

# Result

You can use the calendar for the profile. Deactivate the "Use" option in the "Profile" dialog if you no longer need the calendar. The rolled-out day sequence is retained in the calendar. Existing type days will be overwritten if you enter a new rollout for the same time range in the calendar.



### See also

Configuring profiles (Page 295)

8.2 Creating a profile

# 8.2.6 Configuring root profiles

### Overview

A master profile specifies how to forecast media consumption based on different profiles in the course of the year.

#### Requirement

The necessary profiles have been successfully created in the system.

### Procedure

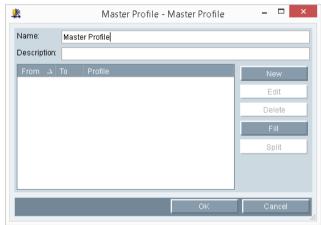
1. Select the folder in which the master profile is going to be created.



2. Click the "Insert Master Profile" button in the menu bar under "Processing > Profile".

:	SIEM	ENS					
	File	Acquisition	Processing	Analysis	: Master Da	ta Administra	tion Help
	Choosel	මීට මී Datapoints to E	oport Allocation		5 🔚 🧐 Profile	🏮 🔡 腾 🛔 Plant and Mat	
	🏇 Syste						
	Men	u		*	below selecte	Master Profile ed node.	

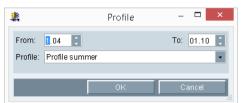
### The "Master Profile" dialog opens.



3. Enter a meaningful "Name" and an optional "Description". Confirm your entries and generate the master profile with "OK".



4. Double-click reopens the editing dialog. Click "New" to select a profile for the period starting on January 1 and a time as of which a different profile is to be applied. Confirm with "OK".



5. The selected profiles and FROM-TO ranges are now generated. You can edit and remove selected settings or add a new range.

1	2		Master Profile - Master Profile	- 🗆 🗙
	Name: Descriptior		er Profile	
	From △ 01.01 01.04 01.10	To 01.04 01.10 01.01	Profile Profile winter Profile summer Profile winter	New Edit Delete
	-	_	ОК	Fill Split Cancel

6. If a different period has been configured, the profile is valid as of the new FROM time. The TO time is set automatically at the previous profile.

8		Master Profile - Master Profile	- 🗆 ×
Name:	Maste	er Profile	
Description			
From $\Delta$		Profile	New
01.01	15.04	Profile winter	
15.04	15.10	Profile summer	Edit
15.10	01.01	Profile winter	Delete
			Fill
			Split
9		ОК	Cancel

7. Confirm and complete the master profile configuration with "OK".

### Result

You have successfully created the master profile and it is now ready for use.

# 8.2.7 Production-dependent forecasts

B.Data uses its internal production plans that contain the production or status data of the consumption type to forecast production-dependent load profiles. Consumption types represent, for example, factories, buildings, or machinery.

# 8.2.8 Special effects

### Overview

In preparation for the adjustment of the basic load profile, define corresponding parameters as a correction factor that takes long-term load changes (= special effects) into account.

The correction factor adjusts the consumption value over time accordingly by a fixed value, e.g. an absolute power value in MW or kW that is added to the basic load profile. However, it is also possible to multiply the profile value by a specific factor.

One of these parameters can be adjusted for calculation of a percentage increase , e.g. multiplication of the profile value by a specific factor.

### Requirement

Successful installation of all software components.

### Procedure

1. Create a parameter and specify its value, including the range of validity.

	t_price_electrical_ene	תפי			
Description:	ייינ				
ReplacementValue:		0,08		Unit: EUR/kWh	
Valid from 🗳	Valid until	Value	Changed at	Changed by	New
01.01.2008 00:00:00	01.01.2009 00:00:00	0,09	27.07.2009 14:56:08		
01.01.2009 00:00:00	01.01.2010 00:00:00	0,095	27.07.2009 14:56:08		Edit
01.01.2010 00:00:00	01.01.2011 00:00:00	0,1	25.01.2012 14:25:10		Delete
01.01.2011 00:00:00	25.01.2011 00:00:00	0,15	25.01.2012 14:25:10		
25.01.2011 00:00:00	25.01.2012 00:00:00	1,17	25.01.2012 14:25:10		

2. When changing values or their valid ranges, you must recalculate the reports accessing these valid ranges of values.

3. Create the MEVAs that fetch the parameter values and distribute these to the respective modules for calculations or output.

🛅 Measu	ring Variable - m_price_electricity_para	-		x
Name:	m_price_electricity_para			
Description:				^
				$\sim$
KKS:				
Function Type:	Parameter	Deta	ils	
Unit:	EUR/kWh			-
Compression Level:	✓ Entry values			-
9	ОК	Car	ncel	

4. Select the "Parameter" function type and append the "\_para" (for "Parameter") suffix to the MEVA name.

5. Complete the MEVA configuration by connecting the parameter to the corresponding MEVA node.

# Result

You have successfully created the measuring variable and the parameter for use as adjustment factors.

# 8.3 Creating plants and material definitions

# 8.3.1 Basic information on plants and material definitions

### Overview

Energy consumption is often decisively determined by individual large consumers or production lines at which various products or batches are produced. Moreover, individual production areas are frequently inappropriately synchronized from an energy aspect, or not at all. As a result, performance peaks and off peak times that may develop are often disadvantageous with regard to cost-efficient energy supply.

As a consequence and in order to provide a realistic forecast of energy demands, it is indispensable to create and maintain a production plan for the entire plant or specific production areas and to integrate this plan into the load forecast.

B.Data supports the creation and maintenance of a production and availability plan for entire plants (factory, production lines), or plant units (machinery, etc.).

The production plan logs all production phases that may have a significant impact on energy demands. With regard to large consumers, it is usually sufficient to determine whether or not the plant is going to be in operation. The logging of downtimes and restricted availabilities is usually of particular significance.

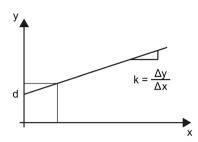
Moreover, it must be possible to plan production line throughput rates (items / time, quantity / time) that have an impact on energy demands.

In order to be able to determine the corresponding energy demand equivalent from the planned production sequence, it is necessary to create a model of the consumption parameters for the various production phases or types.

lame:	Shift W1.10					
escripti	on:					
	Name	Unit	Description	Changed at	Changed by	New
1	Electricity	1	k_Electricity	10.03.2014 14:17	Admin	
2	Electricity	1	d_Electricity	10.03.2014 14:17	Admin	Edit
3	Gas	1	k_Gas	10.03.2014 14:17	Admin	Delete
4	Gas	1	d_Gas	10.03.2014 14:17	Admin	

B.Data supports you in the maintenance or modification of the model parameters (consumption parameters) in every production phase (e.g. downtime, special shift, production x).

These media-specific parameters (power, gas, heat, etc.) form the basis for calculation of loads in the respective production phase in accordance with the equation  $y = k^*x+d$ :



- x Quantity
- y Consumption, for example, electrical power (MW)
- d Section to y
- k Incline

Authorized end users may adjust the individual model parameters of the production phases with the aim of improving the quality of load forecasting.

The next chapters present the following contents related to production planning:

- 1. Consumer type
- 2. Material
- 3. Plant

# Requirement

- The production planning application is licensed separately.
- Successful installation of all software components.

# 8.3.2 Configuring material

### Overview

Material (product types) in combination with consumption parameters (=consumption types) are required to calculate respective energy demands.

#### Requirement

The necessary consumption types have been successfully created in the system.

### Procedure

- 1. Select the folder in which the material is going to be created.
- Click the "Insert Material" button in the menu bar under "Processing > Plant and Material". The "Material" dialog opens.

				M	aterial	- Pils						-		×
Name:	Pils				Ma	erial Iden	tifie	r. Pils						
Description:														^
Materialclass:	Beer													•
BatchList Pa	rameter													
Consumption	n Type	#	Name	Value		Unit	С	hanged at	Chang	ged by		Nev	N	
												Edi	it	
												Dele	ete	
										ОК	-	Can	ool	
										UK		Can	icer	_

3. Enter a meaningful "Name" and an optional "Description". Confirm your entries and generate the material with "OK".



4. Double-click reopens the editing dialog.

•				Mate	erial - Pils			- □ <mark>&gt;</mark>
Name:	Pils				Material Ide	ntifier: Pils		
Description:								1
Materialclass:	Beer							
BatchList Pa			Marria	Malua	List	Observed at	Ober and by	
Consumption	n Type	#	Name	Value	Unit	Changed at	Changed by	New
								Edit
								Delete
			_				ок	Cancel

- 5. Click "New" to open the dialog for editing the consumption parameters.
- 6. Select a consumption parameter, enter a value, and confirm your entries with "OK".

				Mate	rial	- Pils			-	□ ×
Name:	Pils				Mat	erial Ident	ifier: Pils			
Description:										< >
Materialclass:	Beer									•
BatchList Pa	rameter									
Consumption	n Type 🛛 🛆	#	Name	Value		Unit	Changed at	Changed by	Ne	w
heavy fuel oil		1	k_HFO		0	1	10.03.2014 14:27	Admin		
heavy fuel oil		2	d_HFO		0	1	10.03.2014 14:27	Admin	Ed	lit
									Del	lete
9								ОК	Ca	ncel

### Note

Consumption types for electrical power, gas, steam\_HD, steam\_MD, and steam\_ND have already been created as domain data and cannot be deleted. You may create additional parameters as required.

- 7. The value entered is now displayed, can be edited using the "Edit..." function, and be deleted again with "Delete".
- 8. After values have been changed, the reports accessing these values must be recalculated.

### Result

You have successfully created the material that is now ready for use in plants (production plans).

# 8.3.3 Configuring the plant

### Overview

In order to calculate production-dependent forecasts, B.Data employs integral production plans (plants) that specify the production or the status of a factory, building, machine, etc. (= material).

The forecast value of these materials is specified at the respective "Material" definition (in operation, standstill, revision, grade XXX, etc.).

# Requirement

- Cyclic (monthly) and timely allocation of the plants (production plans), as far as production has an impact on load requirements.
- The materials used (product types) have been successfully created in the system.

# Procedure

- 1. Select the folder in which the plant (production plan) is going to be created.
- Click the "Insert Equipment" button in the menu bar under "Processing > Plant and Material".

<b>e</b>		Equipment - PM6			-	×
Name:	РМ6	EquipmentIdenti	fier. PM6			
Description:	paper mill 6					^
						¥
Configurati	on Batchlist Production Plan					
Equipt	nentvariable	Object				
Equipmentva	ariable (only)	Object:			New/S	Save
					Ed	_
Drop pode b	ereusing Drag&Drop:				Dele	ete
	sreasing pragaptop.					
9		OK		Apply	Car	

The "Production Plan" dialog opens.

3. Enter a meaningful "Name" and an optional "Description". Click "OK" to confirm your entries and to generate the production plan.



4. Double-click reopens the editing dialog.

<b>14</b>	Equi	pment - PM6	_ 🗆 🗙
Name:	PM6	Equipment Identifier. PM6	
Description:	paper mill 6		~
			<b>v</b>
Configuratio	n Batchlist Production Plan		
✓ Time Filte	r:      O Day      Month      Time span      10.03	8.2014 - Apply	Move other on intersection ✓ Auto calc Rate/Hour
Lot Number	Start time 그 End time Type	Amount Rate per hour	Correcti New
			Edit
			Delete
			Import
•			•
9		OK A	pply Cancel

- 5. Select "New..." in the "Production Plan" tab to open the editing dialog.
- 6. Specify the following entries for the production plan:
  - Select the required lot type, e.g., Production of XXX, Plant is in revision, etc.
  - Select the product under "Material" and enter a description of the product, if necessary.
  - Specify the time span in which the product will be produced.
  - Specify in which quantity the product will be produced.
  - Enter the correction factor and the Z factor.
  - You may enter a comment if required.
  - Click "OK" to confirm your entries.

ł	<b>4</b>	Lot	- 🗆	×
	LotNumber:			
	Material:	80/170	Edit	
	Description:			
	Time span:	from 10.03.201414:00:00 💽 to 11.03.201414:00:00	-	
	Amount:	0		
	Rate per Hour:	0		
	Correction:	0		
	Comment			
	Z-Factor:	1		
		OK	Cance	

7. The value entered is now displayed, can be edited using the "Edit..." function, and be deleted again with "Delete".

h			Ec	quipment - PN	6			
Name:	PM6			Equipment	dentifier: PM6			
Description:	paper mill 6							
	Batchlist Production		0.03.2014 00	:00:00 - × to	11.03.2014 14:00:1	00 - ×	Apply	other on intersectio
Lot Number		→ End time 00 11.03.2014 14:00:0	Type 0 80/170	Amount	Rate per hour	Correction 0	Commer 0	New
								Edit Delete Import

8. To import production plans from an Excel file to B.Data , click "Import..." and select the required Excel file.

During an import from the Excel file, the existing data in B.Data are deleted in the respective production plan and new data are entered in the respective columns.

9. To automate the import process, use the predefined task "Production\_Plan\_Import" under "Configuration > TaskManagement".

You can use this task, for example, to import the production plans from an Excel file each day at a specific time in B.Data.

### Result

You have successfully created the plant and its production plan and these are now ready for use.

### See also

B.Data options (Page 373)Task Management (Page 396)Functions for Task Management (Page 612)Basic information on schedule management (Page 287)

# 8.3.4 Using the batch list

### Overview

The batch list shows you the batches that were produced on a plant.

The following filter options are available for displaying specific batches:

Time frame

The batch list shows only the batches that were produced in the selected time frame.

Plant

The batch list shows only the batches that were produced on the selected plant.

Material

The batch list shows only the batches that were produced on the selected production lot type.

You may also edit batches in the batch list and add new batches to the list. For example, you may view and edit the figures that were used for batch calculations.

### Procedure

1. Double-click a plant or material and select the "Batch list" tab.

The "Batch list" tab is displayed in the "Plant" or "Material" dialog.

. <u>4</u>			Equipment	- Paper Maschir	ie 1		- 🗆 ×
Name:	Paper Maschine 1			Equipment Identifi	er. Paper Mas	chine 1	
Description:							^
							~
Configuratio	n Batchlist Production	on Plan					
From 1	03.2014 00:00:00	- То	10.03.2014 1	4:34:06 💽			
Material (a	l)	- Equipment	Paper Maschi	ne1 -	Refresh		
BatchID	Starttime 스	Endtime :	Source	Destination	Material		New
							Edit
							Delete
							Overview
							Recalc
9					ОК	Apply	Cancel

- 2. Specify the following data to display the selected batches in the batch list:
  - Specify the required time frame in "From ... to".
  - Select the production lot type from the "Material" dialog.
  - Select the plant from the "Equipment" dialog.

3. Click "Update".

The batches are displayed in the batch list.

Name:	Pan	er Maschine 1			EquipmentIc	lentifier. Paper Mas	chino 1	
Description: Configurati From [		er Maschine T			Equipmentite	raper was	chille i	
Descriptio	n:							
	_							
Configura	ation Ba	tchlist Production F	lan					
From	10.03.2	014 00:00:00	То	12.03.2014	14:36:29 💌			
Material	(all)		Fauinment	Paper Masc	hine 1	Refresh		
	(any			Гарегмазс				
			Endtime د		Source	Destination	Material	New
		10.03.2014 14:34:5					no Material	Edit
		10.03.2014 14:35:3					no Material	
67890		10.03.2014 14:35:4	9   11.03.20	14 14:35:49		Paper Maschin	no Material	Delete
								Overview
								Recalc

- 4. You may create a batch manually as follows:
  - Click "New".

The "Batch Details" dialog opens.

	Batch	Deta	ails		×
Batch ID:					
Equipment	Paper Maschine 1				-
Material:	no Material				•
from	10.03.2014 14:37:05	to	<mark>11</mark> .03.2014 14:3	17:05 🔽	
Equipment	Variable		Value	Unit	
			ОК	Cancel	

- Enter a Batch ID in the "Batch ID" field.
- Select the plant from the "Equipment" dialog.
- Select the production lot type from the "Material" dialog.
- Specify the required time frame in "From ... to".
- Click "OK".

The batch will be created. You can display the batch in the batch list by entering the corresponding filter criteria.

5. The batch figures can be viewed and edited by clicking on "Edit".

The "Equipment Variable" area lists the plant variables that were assigned to the respective plant.

The "Value" and "Unit" fields list the corresponding figures that were calculated based on the respective mevas.

- You can edit figures by clicking the respective entry in the "Value" field.
- 6. A batch is removed from the batch list by clicking "Delete".
- 7. Click "Overview" to display the overview for a batch.

þ	Batchoverview	_ 🗆 ×
Batch Nr.: 67890	Refresh	Foreward Backward
Direction: Foreward		
⊡ <b>→</b> 67890		
Property	Value	
BatchID	67890	
Batchname		
Starttime	10.03.2014 14:35:49	
Endtime	11.03.2014 14:35:49	
Source		
Destination	Paper Maschine 1	
Material	no Material	
BatchID Source		
Batomb Codroc		
BatchID Destination		
BatchID Destination		
BatchID Destination Nominal value		
BatchID Destination Nominal value Current value		
BatchID Destination Nominal value Current value Name transfertype		
BatchID Destination Nominal value Current value Name transfertype Recipename		
BatchID Destination Nominal value Current value Name transfertype Recipename		

8. Click "Update" to recalculate the batches.

# 8.3.5 Creating consumption types

### **Overview**

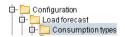
You need consumption types to create models of planned production sequences. These models are used to calculate the respective energy demands.

### Requirement

Production planning is properly installed.

#### Procedure

1. Select the folder in which the consumption type is going to be created.



 Click the "Insert Consumption Type" button in the menu bar under "Processing > Plant and Material".

S	IEM	ENS							
	File	Acquisition	Processing	Analysis	Master Da	ta Ad	Iministration	Help	
с		)atapoints to Ex	port Allocation		5 🔚 🧐 Profile		🚦 🎼 🍒 t and Materi		
3	Syster	n 🕨							t Consumption Type
	Meni	u						<u> </u>	Inserts a new Consumtion Type below selected node.

### The "Consumption Type" dialog opens.

		Consumption Typ	e - Gas		- • •
Name: Gas					
Description:					
arameter Definitions					
N# 스 Name	Unit	Description	Changed at	Changed by	New
					Edit
					Delete
				ок	Cancel

3. Enter a meaningful "Name" and an optional "Description". Confirm your entries and generate the consumption type with "OK".



4. Double-click reopens the editing dialog. Select "Insert..." to create the 1 (k) and 2 (d) parameters.

💧 Consun	ption Type Pa	arameter Defin	tion -	
Sequence:	1			
Name:	k_Gas			
Description:				^
				~
Unit:	1			•
		ОК	0	ancel

5. You only need to define parameters 1 and 2.

		Consumption Typ	oe - Gas		- 🗆 ×
Gas					
on:					0
er Definitions				0	
Name	Unit	Description	Changed at	Changed by	New
k_Gas	1		10.03.2014 14:45	Admin	
d_Gas	1		10.03.2014 14:45	Admin	Edit
					Delete
					<u>Annul</u>
				UK	Cancel
	er Definitions Name K_Gas	er Definitions Name Unit k_Gas 1	er Definitions           Name         Unit         Description           k_Gas         1	er Definitions Name Unit Description Changed at k_Gas 1 10.03.2014 14:45	er Definitions Name Unit Description Changed at Changed by k_Gas 1 10.03.2014 14:45 Admin

#### Note

Consumption types for electrical power, gas, steam\_HD, steam\_MD, and steam\_ND have already been created as domain data.

# Result

The consumption type has been successfully created and can now be used as consumption parameter in the product types.

# 8.4.1 Configuring analysis reports

### Overview

Analysis reports are used to examine the load progression with regard to a profile. Load distribution is determined for all existing typical days and special days across the evaluation period. The result returns the load profile, for example, of a typical Monday or Tuesday.

If an analysis is performed, for example, for each typical "Monday" in the year, all Mondays will be used for the calculation, except for any holidays or special days that coincide with a Monday. In a year with 48 Mondays, for example, the mean value is calculated for the time window from 00:00 to 01:00 for all Mondays and output as result. The same rule is applied to all other intervals.

### Note

Special days that are not created and output as such will corrupt the result, as these would be treated as standard days.

Corrupted values are ignored in the analysis. However, you can force the inclusion of corrupted values with an entry in B.Data options (BDATA\_LASTPRF\_QS = 0).

After the results have been reviewed and a plausibility check has been completed, the calculated values are written directly to the typical days and special days by starting the report and activating the "save" parameter.

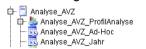
# Requirement

- The module with the type "Load profile analysis module type" and a profile with the typical days and special days to be analyzed have been created.
- The measuring variable for calculating the total load average has been created.

#### Creating and configuring analysis reports

1. Create the "Analysis\_AVZ" report with the "Load profile analysis module type" as well as the "AdHoc" and "Year" query types.

The following structure is then generated in the Plant Explorer:



2. Assign the objects to be analyzed to the module: In this case, this is a measuring variable that calculates a total load average and a profile that is to be filled with the typical days and special days.

You must specify the cycle for calculation of the values. Preset the value in order to simplify the procedure and to avoid incorrect entries.

🗐 😓 Analyse_AVZ_ProfilAnalyse 👘
🕂 🔁 m_Gesamtlast_AVZ_mittel
a_Gesamtlast_IST_AVZ
🖳 🎠 Grundlastprofil AVZ

- 3. Select the "Edit" command from the shortcut menu of the report.
- 4. Select the "AdHoc" and "Year" query types. Enter interval "1" and unit "h" accordingly.

	Report - Analyse_AVZ	- 🗆 🗙
Name: Analys	e_AVZ	
Description:		^
🍙 Display Type		×
Text Type: Name	Country: Germany	
-Query Types	obuility. Journally	
Name	→ Comp. Level S. P. M.	New
Ad-Hoc	Entry values 🔲 🔲	
Year	Entry values	Edit
		Delete
5 Modules (\ Paran	neters	
Name	Type Ti A. F.	New
⊡- ProfilAnalyse	Load forecast analysis Off N N	Edit
Query Type	Interval Unit Text	
Year	1 h	Delete
		Clone
Excel Template		
Open	Generate Entry Points Import	
Open		
	OK Apply	Cancel

# Starting analysis reports

- 1. Start the report, e.g. for a year.
- 2. Select the "1 h" interval in the "Module Start/Stop Info" dialog if the interval is not set by default.
- 3. Click "OK to close the dialog and to start report calculation. The report is created in the "Year" query type structure.

È- 読 Analyse\_AVZ\_Jahr └─ 🐱 Analyse\_AVZ - from: 2014.01.01 till: 2015.01.01 created: 2014.03.26 15:13:38

# Filling typical days

1. Load the result of the report after its calculation has been completed.

The report result is available in the following form:

Di l		lappe1							Fuene bien e		
					Eenster ?	AL 71	480 @		Frage hier e	angeben -	-
_		🖪 💪   🌮 🛍   🐰 🗈							-		
ia		11 <b>- F</b> K <u>U</u>   ≣		朝 🥞 %	000 500 50		🗄 🔹 🖄	• <u>A</u> •,			
	L21 -	f×				_					_
_	A	B	С	D	E	F	G	Н	1	J	
-	Datum	08.02.08 10:10									-
-	Von	01.01.06 00:00									-
-	Bis	01.01.07 00:00									-
-	User	BDATA_SYS									-
	Abfrageart	Jahr	000.01.0	1 1-1-1 000	7.01.01	-+-!!+: 000	0.00.00.00				-
-		Analyse_AVZ - von: 2						3:55:02			-
-	LText	Bericht für Analyse d	ies Lastga	inges zun	n Betulien	der Typia	age				-
-	Behalten	nein Faction									-
_	Status	Fertig									-
	Versionsdatum	08.02.08 09:49									-
-	Modelldatum	aktuelles Modell									-
2											
}											-
		C10 1									-
	Analyse_AVZ_P				(7						-
		Grundlastprofil AVZ				0	0	0	0	0	C1 0
	Profile									Grundlastprot	
-	Anzahl Werte		48	48		49	49		48		
_	Zeit		MO AVZ		MI AVZ	DO AVZ				Feiertag AVZ	
)	00:00	01:00		28,25		27,72	27,48		14,22		
	01:00	02:00		25,73		25,08	25,06		14,14		
2	02:00	03:00		24,61		24,01	24,09	21,28	14,08		
}	03:00	04:00		26,45				20,52	14,12		
-	04:00	05:00		31,79		30,77	31,00	20,08	14,06		
5	05:00	06:00		39,46		38,22	37,87	20,21	14,16		
3	06:00	07:00		43,97		42,64	41,74		14,28		
7	07:00			44,80		43,46	42,49		14,37		
3	08:00	09:00	42,87	44,86	· ·	43,44	42,39	20,61	14,48		
3	09:00	10:00		45,34		44,21	42,86	20,42	14,59		
1	10:00	11:00		45,28		43,80	42,71	20,32	14,66		
	11:00	12:00		44,76		43,29	42,14		14,66		
!	12:00	13:00	43,75	45,39		44,20	42,72	19,84	14,66		
3	13:00	14:00	43,89	45,51		44,37	42,26		14,56		
1	14:00	15:00		44,05		42,88	40,76	18,23	14,34		
	15:00	16:00		42,67		41,41	39,50	16,64	14,11		
;	16:00	17:00	39,97	41,43		40,28	38,42	15,81	14,09		
	17:00	18:00	38,42	39,92		38,72	36,96		14,06		
	18:00	19:00	· ·	39,70		38,33	36,74		14,06		
	19:00	20:00	38,46	40,13		38,73	36,94	15,01	15,04		
1	20:00	21:00		39,76		38,36	36,54		16,91		
	21:00	22:00		39,52		38,22	36,42	14,73	18,59		
2	22:00	23:00		38,90		37,44	35,36	14,58	19,66		
	23:00	00:00	32,83	34,03	32,73	32,70	30,70	14,25	21,24	18,61	_
						<					

The typical day is output in line 19. The "Number of values" above that specifies the number of days used to calculate the typical day. The result is marked in blue color if this value is less than three.

Line 16 displays the measuring variable and the profiles used as the basis for calculation of the typical days.

2. If the current load profile has caused implausible calculation results, find and eliminate these "outliers" until your calculation seems plausible.

#### Note

As an alternative, you can fill in the typical days and manually correct the outliers in the typical days.

Initiate the filling of typical days by entering the "save" command in the text batches field when starting the report.

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Module Common	Parameter Query Type: Year	,				•
😓 ProfilAnalyse	From	14 00:00:00	<b>To</b>	1.01.2015 00:00:00	•	
	Advanced Parameter					*
	Version Current 27.	03.2014 10:58:56 💌	Model Curre	nt : :	•	
	Compression Level:	Entry values				•
	Batches:	save			~ _	
	Keep:	□.				
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The calculated values were written to the typical days or special days. This status can be checked by editing the typical days.

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02:00	03:00	LT	25,71	1			Delete
03:00	04:00	LT	27,45	1			
04.00	05:00	LT	30,87	1			Fill
04:00	06:00	LT	36,9	1	1		Split
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	07.00	LT	42,66	1	1		
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### Result

You have completed the configuration of the profile, including its assigned typical and special days, so that the profile can now be used in forecasting.

#### Note

Adjust the typical day setting annually, i.e. recalculate the values on the basis of the load profile of the previous year.

# 8.4.2 Configuring long-term forecast reports

#### Overview

An overall forecast is calculated for the following year at the end of each annual period (e.g. end of December). The basic load profiles that have been calculated and adjusted by the customer, including the future holidays calendar in B.Data, form the basis for an overall forecast. This long-term demand forecast is calculated once in B.Data (initiated manually). and forms the basis for calculating demands of the following year or of the next years (2-year forecast). The results of this forecast are retained without changes in the B.Data system for the entire year. The long-term forecast has a resolution of one hour.

# Requirement

- A profile that contains the typical and special days has been created in the system.
- A measuring variable for forecast calculation and the derived data point has been created in the system.

# Creating derived data points

- 1. Create a derived data point that you can use to create the long-term forecast.
- 2. Set the cycle time to 1 hour.

The data point is then ready for use.

⊡ Datenpunkte Prognose Werk AVZ

# Creating measuring variables

1. To create the long-term forecast, create a measuring variable that adds up the profile values and special effects.

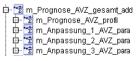
Profile values: Function type "Profile value

Special effects: Function type "Parameter"



2. Create the "m\_Forecast\_AVZ\_total\_add" measuring variable (function type "Addition of n MEVAs") in the same way. Copy the measuring variables in the order displayed to the "m\_Forecast\_AVZ\_total\_add" measuring variable node.

This measuring variables adds up the profile value and the adjustment values.



- 3. Configure this measuring variable as input of the derived data point (author's remark: that was created above).
- 4. Create the "m\_Long-term forecast\_AVZ\_average" measuring variable with function type "Average". Copy the derived data point "a\_longtermforecast\_AVZ" to this measuring variable node.

```
⊡ 😨 m_Langfristprognose_AVZ_mittel
⊡ ⊡ 🔄 a_Lastfristprognose_AVZ
```

### Configuring "long-term forecast" reports

1. Create the report "Long-term forecast\_electrical power\_analysis\_AVZ" with the module types "Module derived measurement" and "Log with from/to" as well as the "Ad-Hoc" and "Year" query types.

Import a configured template so that the necessary macros are available.

The following structure is then generated in the Plant Explorer:

- Langfristprognose\_Strom\_AVZ
   Langfristprognose\_Strom\_AVZ\_abgel
   Langfristprognose\_Strom\_AVZ\_rot
   Langfristprognose\_Strom\_AVZ\_rot
   Langfristprognose\_Strom\_AVZ\_AdHoc
   Langfristprognose\_Strom\_AVZ\_Year
- 2. Assign the objects to be evaluated to the modules.



- 3. Copy the derived data point for the total consumption forecast (profile + adjustments) to the "Derived measurement" module structure.
- 4. Copy the measuring variable for profile calculation, the three measuring variables for the adjustment factors, as well as the measuring variable for the calculated total consumption to the "Report module" structure.
- 5. You must specify the cycle for calculation of the values. Preset this value to avoid incorrect entries.

- 6. Select the "Edit" command from the shortcut menu of the report.
- 7. Select the "AdHoc" and "Year" query types. Select interval "1" and unit "h" accordingly.

1	Report - Last	tfristprognose	_Strom_	AVZ		-	
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#### Starting report calculation

- 1. Start the report, e.g. for a year.
- 2. Select the "1 h" interval in the "Module Start/Stop Info" dialog if the interval is not set by default.
- 3. Click "OK to close the dialog and to start report calculation. The report is created in the "Year" query type structure.

È- 🔜 Langfristprognose\_Strom\_AVZ\_Jahr └- 😼 Analyse\_AVZ - from: 2014.01.01 till: 2015.01.01 created: 2014.03.26 15:13:38

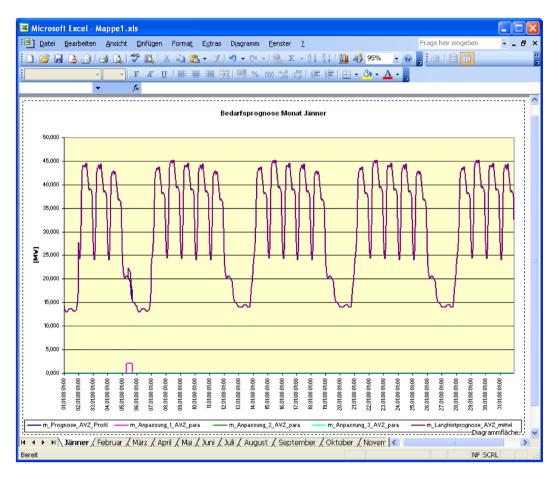
The report result is available in the following form:

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5	3	01	01.01.08 00:00	01.01.08 01:00	16,411	0,000	0,000	0,000	16,411	
6	3	02	01.01.08 01:00	01.01.08 02:00	15,332	0,000	0,000	0,000	15,332	
7	3	03	01.01.09 02:00	01.01.08 03:00	14,925	0,000	0,000	0,000	14,925	
8	3	04	01.01.08 03:00	01.01.08 04:00	14,939	0,000	0,000	0,000	14,939	-
9	3	05	01.01.09 04:00	01.01.08 05:00		0,000	0,000	0,000	15,662	-
10	3	06	01.01.08 05:00	01.01.08 06:00	17,109	0,000	0,000	0,000	17,109	
11	3	07	01.01.08 06:00	01.01.08 07:00	18,459	0,000	0,000	0,000	18,459	
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Column F displays the forecast values, while columns G, H, and I display the adjustments. Column J displays the sum of the profile value + adjustments. Columns D and E display the time range of the values.

Enter the <CTRL+D> keystroke to start generation of the diagrams for all 12 months of the calculated year.

The profile value and sum trends are identical if no adjustments were made. The data in the following screenshot was manipulated to visualize an adjustment.



#### Result

You have successfully configured the long-term forecast and it is now ready for use.

# 8.4.3 Configuring schedule reports

#### **Overview**

Every month a schedule is calculated for the next month and the result is reported to the energy supplier. The schedule is created in B.Data in the last working week of the month. The Excel file is communicated manually to the energy supplier by a team member of the customer. A resolution of 1 h is specified for the load data of the schedule registration.

#### Layout of the report template

This report template consists of two worksheets:

- "INFO" worksheet: General information on the reporting instance.
- "Internal" worksheet: Actual values.



With the exception of dates, the contents of INFO are constants and defined in the template.

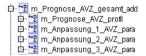
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The "Internal" sheet in schedule format consists of the following columns and rows:

- Columns A, B, and C contain the schedule structure and may not be modified.
- Date row 1 and header rows 2 to 17 can be applied without changes. Exception: Name of the balancing group member; to be supplemented accordingly.
- Columns D and E contain hourly performance values, with column D containing the figures of ENERGIE\_LF consumption and column E containing the figures of possible energy returns to the ENERGY supplier. Only one of the figures, i.e. supply or return, may be unequal to zero in any hour. Performance figures are always entered as positive numbers.

#### Requirement

- A profile that contains the typical and special days has been created in the system.
- A measuring variable for forecast calculation and the derived data point has been created in the system.
- The "m\_Forecast\_AVZ\_total\_add" measuring variable for calculating the forecast value has been created in the system.



#### Configuring "Schedule" reports

 Create a derived data point "a\_Monthly schedule\_AVZ" for monthly forecasting (= schedule). Copy the "m\_Forecast\_AVZ\_total\_add" measuring variable to this data point structure.

ᆆ 🛅 Datenpunkte Prognose Werk AVZ
🕀 😰 m_Prognose_AVZ_gesamt_add

 Create the "m\_Monthly forecast\_AVZ\_total\_average" measuring variable for reading the monthly forecast data. Copy the "a\_Monthly schedule\_AVZ" to this measuring variable structure.



3. Create the "Monthly schedule\_electricity\_AVZ" report. Instead of the "Report with FROM/TO" module, select the "Schedule B/L KISS-A month" module. Assign the corresponding data points and measuring variables to the modules.



### Loading report results

1. Start the report. "Load" the report result as soon as the "FI (Finished)" status is set. "Open" the report result if the "Loaded" status is already set.

As a result, the schedule is displayed in Excel. After having checked the values, forward the schedule by e-mail.

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Once calculation has been completed in B.Data, the responsible instances of the controlling department must validate the tabular analyses that were generated and specify the corresponding "Version" number in line 8.

The principal is under the obligation to maintain the version number for the various analyses that were generated to identify late registrations of the schedules.

#### Result

You have successfully created the schedule report for further use.

# 8.4.4 Configuring daily load course reports

# Overview

Every day, a report that contains the actual consumption figures is calculated for the previous day. The result is written to a derived data point with hourly resolution for comparison purposes (controlling report).

The values for this report are calculated on a "rolling" basis using the figures of the last 14 days to avoid non-contiguous data. Such data gaps may develop, for example, in the course of necessary maintenance on the acquisition PC.

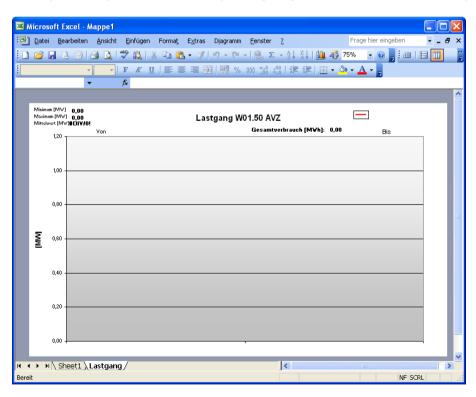
## Layout of the report template

This report template consists of two worksheets:

• "Sheet1" contains the calculated progression of the load profile.

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• "Load profile" represents the corresponding diagram that is filled automatically.



#### Note

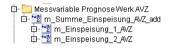
When using templates with a user-specific graphic worksheet, the templates always have to be saved and closed in the data worksheet (entry point of the modules). Closing the template in graphic worksheet prevents you from loading reports using this template.

#### Requirement

All data points and mevas needed to calculate the daily load profile have been created in the system.

#### Configuring "Daily load profile" reports

 Create the ""m\_Sum\_supply\_AVZ\_add"" meva (function type "Addition of n MEVAs") for calculating the actual value of consumption. Copy the "m\_Supply\_1\_AVZ" and "m Supply 2 AVZ" mevas to the structure of this measuring variable.



#### Note

Calculations depend on the respective plant concerned. The number of feed cables, necessary scaling, count value differences, etc.

 Create a derived data point "a\_Total load\_ACTUAL\_AVZ" for calculating daily consumption.

You may use the ODBC connector, for example, for the initial import of the chronological load profile.

3. Copy the "m\_Sum\_\_supply\_AVZ\_add" meva to the structure of this data point.



#### Note

If load profile history data has already been written to this data point, the ODBC data source is also connected below this data point. However, this has no influence on the calculation of values.

4. Create the "Daily load profile\_electricity\_AVZ" report, similar to the "Long-term forecast" report. Instead of the "Report with FROM/TO" module, select the "Query with 1 time stamp" module. Activate the "start automatically" option for the "Day" query type and set the deletion period to one week.

#### Note

Strictly observe the order of the modules: The module first needs to calculate (fill) the derived data point to prepare it for reading by the query module.

5. Assign the data point to the modules.

```
    Tageslastgang_AVZ
    Tageslastgang_AVZ_abgel
    G→ a_cesamtlast_IST_AVZ
    G→ a_cesamtlast_IST_AVZ_abff
    G→ a_cesamtlast_IST_AVZ
```

6. Create a parameter with value "14". Implement the parameter in the structure of the "Day" query type.

This factor extends the daily queries accordingly to the last 14 days instead of the last day.



#### Loading report results

The report is started automatically in accordance with the configuration. Load the report result on completion of the calculation.

The result shows the supply figures of the last 14 days in Excel, including minimum, maximum, average, and total consumption figures.

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#### Result

You have successfully created the daily load profile report that can now be put into use or be calculated automatically on a daily basis.

# 8.4.5 Configuring controlling reports

#### Overview

On expiration of the period (year), a retrospective report is generated; it contains the comparison of the measured load profile with forecast data (long-term forecast values) and the schedule with schedule adjustments. The offset derived from the TARGET/ACTUAL comparison is visualized in absolute (MW) and relative (%) figures. The result is provided as annual analysis (starting at the beginning of the year) in a defined format. A resolution of one hour (1h) is specified for the load data derived from the TARGET/ACTUAL comparison.

# Layout of the report template

This report template consists of an "empty" worksheet, as the module has not yet calculated and generated all values and headings.

Alicrosoft Excel - Mappet										
💷 Datei Be	arbeiten <u>A</u> nsicht <u>E</u>	infügen Forma <u>t</u> E <u>x</u> tr	as Daten Eenster	2			Frage	e hier eingeben	8×	
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#### Requirement

The following data points must be created and continuously calculated:

Total energy input (total performance/unit charge figures) of the factory, the derived DP for long-term forecasting, derived DP for the schedules.

# Configuring "Controlling" reports

The analysis consists of general header data of the report and of the tabular view of performance figures. These performance figures are derived from the long-term forecast, the registered schedule, and total energy consumption of the respective plant.

In addition to performance figures, the list shows the deviations between the schedule and actual values measured. Deviations are calculated and listed both as absolute [MW] and relative [%] values.

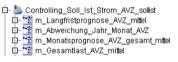
These deviations are to be visualized in a separate diagram for every month of the year. You have already set up the "m\_Long-term forecast\_AVZ\_average", "m\_Monthly forecast\_AVZ\_total\_average", and "m\_Total load\_AVZ\_average" mevas in the system:

🕂 📄 Me	🕂 🎦 Messvariable Prognose Werk AVZ								
🕂 🕂	m_Monatsprognose_AVZ_gesamt_mittel								
	m_Prognose_AVZ_profil								
	m_Prognose_AVZ_gesamt_add								
🔆 🕂	m_Langfristprognose_AVZ_mittel								
🗄 - 🔁	m_Gesamtlast_AVZ_mittel								

- 1. Set up the "m\_Deviation\_year\_month\_AVZ" meva (function type "MEVA minus MEVA") for calculating the difference between the monthly and long-term forecasts.
- 2. Copy the "m\_Monthly forecast\_AVZ\_total\_average" and "m\_Long-term forecast\_AVZ\_average" mevas to the structure of this meva in the correct order.

9 v	orlage	SOLL IST-Vergleich	.xls						
	В	C	D	E	F	G	н	1	J
1	-	-	-	Werk 01.50 👻	Anpassun;	Fahrplan 👻	IST-Werte 👻	SOLL / IST 👻	SOLL / IST
2		Datum		Bedarfsprognose	Anpassung	Fahrplan EVU	IST-Werte	Abweichung abs	Abweichung rel
3				langfristig					
4	h	VON	BIS	[in MW]	[in MW]	[MW]	[MVV]	[MW]	%
5	1	01.01.2005 00:00	01.01.2005 01:00	9,068		9,068	8,263	0,806	8,883
6	2	01.01.2005 01:00	01.01.2005 02:00	9,050		9,050	8,225	0,825	9,116
7	3	01.01.2005 02:00	01.01.2005 03:00	9,050		9,050	8,213	0,838	9,254
8	4	01.01.2005 03:00	01.01.2005 04:00	9,035		9,035	8,238	0,797	8,827
9	5	01.01.2005 04:00	01.01.2005 05:00	9,050		9,050	8,213	0,838	9,254
10	6	01.01.2005 05:00	01.01.2005 06:00	9,071		9,071	8,250	0,821	9,051
11	7	01.01.2005 06:00	01.01.2005 07:00	9,230		9,230	8,450	0,780	8,451
12	8	01.01.2005 07:00	01.01.2005 08:00	9,104		9,104	8,450	0,654	7,184
13	9	01.01.2005 08:00	01.01.2005 09:00	9,128		9,128	8,388	0,741	8,112
4	10	01.01.2005 09:00	01.01.2005 10:00	9,035		9,035	8,288	0,748	8,273
15	11	01.01.2005 10:00	01.01.2005 11:00	9,077		9,077	8,325	0,752	8,285
16	12	01.01.2005 11:00	01.01.2005 12:00	9,128		9,128	8,350	0,778	8,523
17	13	01.01.2005 12:00	01.01.2005 13:00	9,125		9,125	8,350	0,775	8,493
18	14	01.01.2005 13:00	01.01.2005 14:00	9,155		9,155	8,363	0,792	8,656
19	15	01.01.2005 14:00	01.01.2005 15:00	9,155		9,155	8,375	0,780	8,520
20	16	01.01.2005 15:00	01.01.2005 16:00	9,143		9,143	8,400	0,743	8,126
21	17	01.01.2005 16:00	01.01.2005 17:00	9,104		9,104	8,488	0,617	6,772
22	18	01.01.2005 17:00	01.01.2005 18:00	9,071		9,071	8,338	0,733	8,086
23	19	01.01.2005 18:00	01.01.2005 19:00	9,077		9,077	8,325	0,752	8,285
24	20	01.01.2005 19:00	01.01.2005 20:00	9,062		9,062	8,338	0,725	7,995
25	21	01.01.2005 20:00	01.01.2005 21:00	9,110	0,234	9,344	8,313	1,032	11,039
26	22	01.01.2005 21:00	01.01.2005 22:00	9,065	0,2 Annas	sung Fahrplan	8,288	1,012	10,878
27	23	01.01.2005 22:00	01.01.2005 23:00	9,065	0,2 Eingab		8,313	0,986	10,609
28	24	01.01.2005 23:00	02.01.2005 00:00	8,966	Leistun	gsanpassung je	8,463	0,504	5,616
29	1	02.01.2005 00:00	02.01.2005 01:00	9,068	Stunde	in MW I	8,088	0,980	10,813
30 [	2	02.01.2005 01:00	02.01.2005 02:00	9,050			8,068	0,963	10,635
1	р н т	SOLL-IST Vergleid	n / Diagramm /	0.050		0.050	0 072	0.075	10 770

- 3. Create the "Controlling\_target\_actual\_electricity\_AVZ", similar to the "Long-term forecast" report. This report only needs a module of the type "ACTUAL/TARGET schedule".
- 4. Assign the measuring variables to the module, observing the correct order.



#### Loading report results

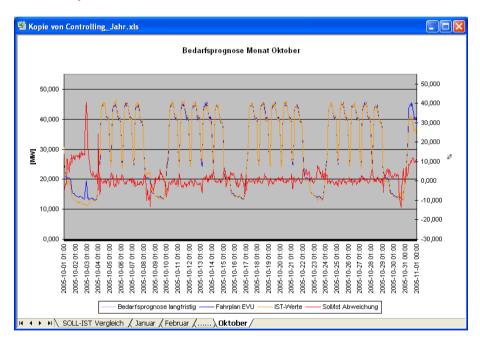
1. Start the report, e.g. for a year.

In addition to the FROM and TO times, the configured report outputs the values for long-term forecasting, possible adjustments, the schedule value, as well as the actual value.

These values are used to calculate absolute and relative deviation figures.

🗐 v	orlage	SOLL IST-Vergleich	.xls						
	В	C	D	E	F	G	н		J
1	-	•		Werk 01.50 👻	Anpassun; 🗸	Fahrplan 👻	IST-Werte -	SOLL/IST 👻	SOLL/IST
2		Datum		Bedarfsprognose	Anpassung	Fahrplan EVU	IST-Werte	Abweichung abs	Abweichung rel
3				langfristig					
4	h	VON	BIS	in MW]	[in MW]	[MW]	[MW]	[MW]	5
5	1	01.01.2005 00:00	01.01.2005 01:00	9,068		9,068	8,263	0,806	8,683
6	2	01.01.2005 01:00	01.01.2005 02:00	9,050		9,050	8,225	0,825	9,116
7	3	01.01.2005 02:00	01.01.2005 03:00	9,050		9,050	8,213	0,838	9,254
8	- 4	01.01.2005 03:00	01.01.2005 04:00	9,035		9,035	8,238	0,797	8,827
9	5	01.01.2005 04:00	01.01.2005 05:00	9,050		9,050	8,213	0,838	9,254
10	6	01.01.2005 05:00	01.01.2005 06:00	9,071		9,071	8,250	0,821	9,051
11	7	01.01.2005 06:00	01.01.2005 07:00	9,230		9,230	8,450	0,780	8,451
12	8	01.01.2005 07:00	01.01.2005 08:00	9,104		9,104	8,450	0,654	7,184
13	9	01.01.2005 08:00	01.01.2005 09:00	9,128		9,128	8,388	0,741	8,112
14	10	01.01.2005 09:00	01.01.2005 10:00	9,035		9,035	8,288	0,748	8,273
15	11	01.01.2005 10:00	01.01.2005 11:00	9,077		9,077	8,325	0,752	8,285
16	12	01.01.2005 11:00	01.01.2005 12:00	9,128		9,128	8,350	0,778	8,523
17	13	01.01.2005 12:00	01.01.2005 13:00	9,125		9,125	8,350	0,775	8,493
18	14	01.01.2005 13:00	01.01.2005 14:00	9,155		9,155	8,363	0,792	8,656
19	15	01.01.2005 14:00	01.01.2005 15:00	9,155		9,155	8,375	0,780	8,520
20	16	01.01.2005 15:00	01.01.2005 16:00	9,143		9,143	8,400	0,743	8,126
21	17	01.01.2005 16:00	01.01.2005 17:00	9,104		9,104	8,488	0,617	6,772
22	18	01.01.2005 17:00	01.01.2005 18:00	9,071		9,071	8,338	0,733	8,086
23	19	01.01.2005 18:00	01.01.2005 19:00	9,077		9,077	8,325	0,752	8,285
24	20	01.01.2005 19:00	01.01.2005 20:00	9,062		9,062	8,338	0,725	7,995
25	21	01.01.2005 20:00	01.01.2005 21:00	9,110	0,234	9,344	8,313	1,032	11,039
26	22	01.01.2005 21:00	01.01.2005 22:00	9,065	0,2 Annass	ung Fahrplan	8,268	1,012	10,878
27	23	01.01.2005 22:00	01.01.2005 23:00	9,065	0,2 Eingabe	der	8,313	0,986	10,609
28	24	01.01.2005 23:00	02.01.2005 00:00	8,966	Leistung	gsanpassung je	8,463	0,504	5,616
29	1	02.01.2005 00:00	02.01.2005 01:00	9,068	Stunde	in MW !	830,8	0,980	10,813
30	2	02.01.2005 01:00	02.01.2005 02:00	9,050			8,068	0,963	10,635
21	2	SOLL-IST Vergleic	02.04.2006.02-00	0.050		0.050	0 07E	0.075	*****
		Vanner and Andrea	r , bagianin /						<u>.</u>

Enter the <CTRL+D> keystroke to start generation of the diagrams for all 12 months of the calculated year.



#### Result

You have successfully created the controlling report that can now be used to determine forecasting quality.

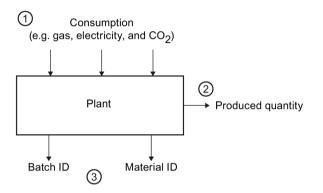
# 8.4.6 Configuring "Batch analysis" reports

#### Overview

The batch analysis helps you to evaluate the energy and media consumption for a specific batch or product per plant. The batch analysis also takes batches into account that are handled sequentially on several plants.

The "Batch analysis" report provides you with a reporting module in B.Data, which you can use to evaluate the energy consumption per batch or material.

The following figure shows the parameters that you need for this analysis.



① Consumption data

This example relates to the gas and electricity consumption. The  $CO_2$  that develops during production, for example, is calculated based on the  $CO_2$  equivalent of the consumers.

2 Production data

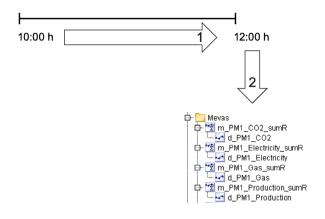
The quantity or number of products manufactured within the batch runtime.

③ Batch data

The "Batch ID" is used as unique identifier of the batch and defines the start and end of batch runtime.

The "Material ID", for example, denotes the product type manufactured in this batch.

The diagram in the following figure highlights the data acquisition process of a batch that is busy from 10:00 h to 12:00 h:



- 1 Consumption and production data is acquired during batch runtime at an acquisition cycle of five seconds. At a runtime of two hours, 1440 values are saved as raw data for each data point.
- 2 At the end of the batch, the batch data is generated and calculated in the mevas, e.g. the total, on the basis of the acquired raw data. Use the "Generate batch data" database job to generate the batch data.

You may delete the raw data on completion of your calculation, e.g. after one week. The pre-calculation of batch data offers you two advantages:

- You acquire the consumption data of a batch in the seconds range and profit from very
  precise data.
- The time it takes to generate the batch analysis report is reduced, as the values of the precalculated MEVAs are used.

#### Requirement

The following data points are created for acquisition of the consumption and production data of a plant via interface, e.g. WinCC.

Name	Description	Cycle time
d_PM1_Electricity	Acquires the power consumption of a plant.	5 s
d_PM1_Gas	Acquires the gas consumption of a plant.	5 s
d_PM1_CO2	Acquires the CO <sub>2</sub> production of a plant.	5 s
d_PM1_Production	Acquires the quantity or number of products manufac- tured on a plant.	5 s
d_BatchID_PM1	Acquires the batch start and end times.	5 s
d_MaterialID_PM1	Acquires the material IDs of the product types produced per batch.	5 s

# Copying data points

1. Copy the data points that you need for the batch analysis to the selected subfolder.

þ. 📄	Batch_related_analyses
Ē.	🔄 Tags
	🛃 d_BatchID_PM1
	🗠 d_MaterialID_PM1
	🛃 d_PM1_CO2
	🛃 d_PM1_Gas

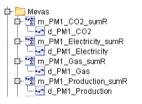
# **Creating MEVAs**

1. Create measuring variables (MEVAs) with "Total Real" database function for each data point used in the selected subfolder.

Example of the creation of the "m\_PM1\_Electricity\_sumR" MEVA for the "d\_PM1\_Electricity" data point:

🔨 Measu	iring Variable - m_PM1_Electricity_sumR 👘 🗖 🗖	×
Name:	m_PM1_Electricity_sumR	
Description:	PM1 Electricity	^
		~
KKS:		
		_
Function Type:	Sum real Details	
Function Type: Unit:	Sum real Details WVh	•
		•

2. Copy the corresponding data points to the subfolder of the MEVA folder.



# Creating plant variables

1. Create the necessary plant variables in the selected subfolder.



The "Batch DP" and "Material DP" plant variables are predefined in B.Data. Copy these plant variables to the selected folder.

## Creating a plant

1. Create the necessary plant variables in the selected subfolder.

```
⊡ Equipment_for_batch_analyses

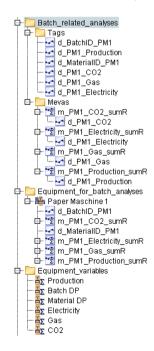
■ ∰ Paper Maschine 1
```

2. In the plant configuration dialog, drag-and-drop the plant variables, including the corresponding measuring variables / data points from the project tree to this folder.

🖷 Equipment - Paper Maschine 1 – 🗖				nine 1 – 🗆 🗡	
Nam	ie:	Paper Maschine 1 Equipment Identifier Paper Maschine 1			
Description:				^	
Configuration Batchlist Production Plan					
	Equipr	nentvariable		Object	
ĕΣ		)P			
ďΣ				m_PM1_CO2_sumR	
ĕΣ		ity		m_PM1_Electricity_sumR	
ďΣ				m_PM1_Gas_sumR	
ďΣ	Produc	tion	*Σ	m_PM1_Production_sumR	
Equi	inmonto	vieble (opli)		Object:	
		riable (only)			New/Save
ďΣ	Material	DP		d_MaterialID_PM1	Edit
Drop	Drop node here using Drag&Drop: Delete				
9					OK Apply Cancel

#### Intermediate result

You have successfully created all objects that you need for the "Batch analysis" report.



#### Calculating batch data

1. Copy the "Calculate\_Batchdata" task to the selected subfolder to calculate the batch data.

The "Calculate\_Batchdata" task is predefined in B.Data. It is not necessary to recreate this task.

2. You can start the task manually by double-clicking the task and clicking "Start".

#### Intermediate result

The batch data is being generated. The total of the consumption values of the period contained in the meva that is assigned to the plant is calculated automatically.

You can display the batch data in the "Batch list" tab of the "Plant" or "Material" dialog by setting the corresponding filter.

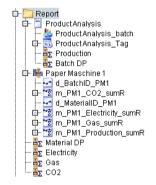
	Equipment - Paper Maschine 1 – 🗖 🗙					
Name:	Paper Maschine 1		EquipmentIder	tifier. Paper Mas	chine 1	
Description:						^
						<b>v</b>
Configuratio	m Batchlist Production Pla	in				
	0.03.2014 00:00:00 🔽 T		14:36:29 🔽 📖			
Material (a		quipment Paper Masc		Refresh		
BatchID	د Starttime	Endtime	Source	Destination	Material	New
13456		11.03.2014 14:34:53		Paper Maschin	no Material	Edit
45566		11.03.2014 14:35:30		Paper Maschin	no Material	
67890	10.03.2014 14:35:49	11.03.2014 14:35:49		Paper Maschin	no Material	Delete
						Overview
						Recalc
				ок	Apply	Cancel
					(iddo	Cancer

#### **Creating reports**

1. Create a report with query type "Day" and "Batch-related analyses" module in the selected subfolder.

	Report - Product Analysis	- 🗆 🗙
Name:	ProductAnalysis	
Description:		<u>^</u>
🍯 Display 1	ype	
Text Type:	Name 🔽 Country: Germany	•
Query Ty	pes	
Name	△ Comp. Level S. P. M.	New
Tag	Entry values 🔲 🗌	Edit
		Delete
	1 P1	
Name	[\Parameters] Type Ti A. F.	1
batch	Batch related analyses Off N N	New
Daten	Datchielateu analyses of 14 14	Edit
		Delete
		Clone
Excel Te	nplate	1
Ope	· · · · · · · · · · · · · · · · · · ·	
Ope	Therefore Entry Points Import	
	OK Apply	Cancel
	( ( ( ( ( ( ( ( ( ( ( ( ( ( ( ( ( ( (	

- 2. Create a report template.
- 3. Enter the report values to be visualized. Copy the plant variables, the plant, as well as the associated mevas and data points to the subfolder of the report module.



4. Start the report with query type "Day" and query period "26.04.2012".

# Result

#### The calculated batches are visualized in the report.

		Mate	rial specifi	c analysis						
From	26.04.2012									
till	27.04.2012									
								Consum	ption	
Equipment	Material	Batch ID	from	till	hh:mm:ss	CO2	Gas	Electricity	Material DP	Batch DP
Paper Machine 1	no Material	12458	26.04.2012 06:00:00	26.04.2012 10:00:00	04:00:00	0	0	0	0	0
Paper Machine 1	no Material	132500	26.04.2012 13:00:00	26.04.2012 16:30:00	03:30:00	0	0	0	0	0
Paper Machine 1	no Material	16125	26.04.2012 20:00:00	26.04.2012 23:30:00	03:30:00	0	0	0	0	0
Dapar Machine 1	Heatset 40g/m <sup>2</sup>	132500	26.04.2012 13:00:00	26.04.2012 16:30:00	03:30:00	1.344	4.438	1.547	1.680	7.462
raper machine r										
	Newsprint 42,5g/m²	12458	26.04.2012 06:00:00			2.912	5.908	2.331	3.640	9.572
Paper Machine 1	-	12458 12550	26.04.2012 06:00:00 26.04.2012 10:30:00	26.04.2012 10:00:00	04:00:00	2.912 2.564	5.908 4.580	2.331 1.789	3.640 3.245	9.572 8.560
Paper Machine 1 Paper Machine 1	Newsprint 42,5g/m²			26.04.2012 10:00:00 26.04.2012 12:00:00	04:00:00 01:30:00				3.245	

#### Using the batch analysis result for regression analysis

Use the diagram functionality of Microsoft Excel for the regression analysis. The analysis is based on the recorded production and consumption data depending on the produced product.

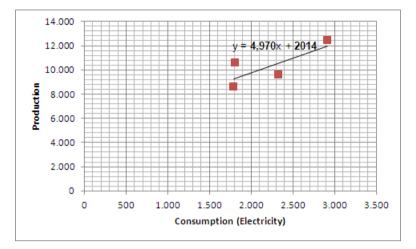
- 1. Create an autofilter and filter the "Material" column according to the required product type.
- 2. Because consumption and produced quantity are relevant for the regression analysis, hide the columns that are not required.

In this example, use the data of columns I and K.

4	A	В	С	D	E	F	G	Н	1	К
12			Mate	rial specifi	ic analysis					
12 13 14										
	From	26.04.2012								
	till	27.04.2012								
15 16 17										
								Cons	sumption	
	_	_	_		_	_	_			
	Equipment 🛛 🚬	Material 🍼	Batch I 🍸	from 🔄	till 🍼	hh:mm: 🍸	CO2 🔼	Gas 🎽	Electri 🎽	Batch I
23	Paper Machine 1	Newsprint 42,5g/m <sup>2</sup>	12458	26.04.2012 06:00:00	26.04.2012 10:00:00	04:00:00	2.912	5.908	2.331	9.572
24	Paper Machine 1	Newsprint 42,5g/m <sup>2</sup>	12550	26.04.2012 10:30:00	26.04.2012 12:00:00	01:30:00	2.564	4.580	1.789	8.560
25	Paper Machine 1	Newsprint 42,5g/m <sup>2</sup>	15750	26.04.2012 14:00:00	26.04.2012 16:30:00	02:30:00	2.684	5.762	1.814	10.560
26	Paper Machine 1	Newsprint 42,5g/m <sup>2</sup>	16125	26.04.2012 20:00:00	26.04.2012 23:30:00	03:30:00	3.640	5.908	2.912	12.460

- 3. Insert the diagram type "Point (X Y)", for example, on a new worksheet.
- 4. Select the required range as data range in the batch analysis.
- 5. To identify outliers more clearly, generate a trend line if necessary.

Based on the formula, read the factors "k" and "d" which you can use as basis for a production-planning oriented forecast:



# See also

Creating objects for Task Management (Page 396) Creating a report (Page 191)

# Document management

# 9.1 Document management basics

#### Definition

The document management function lets you manage external documents in B.Data, e.g. documents in PDF, Excel or Word format.

#### Note

#### Applications for external documents

If you want to open and edit an external document in B.Data, the correct application must be installed on your PC.

#### Usage

You use document management if you require additional application for energy management in B.Data.

Using document management, you can manage external documents in B.Data as follows:

• Link documents

This option lets you insert a link for the document that is saved on your PC. Once inserted, you can use this link to call up the document in B.Data with the respective application. Please note that the document is only available to you. Other users do not have access to the document.

#### Note

#### General access to linked documents

To allow other users access to the linked document, save the document in a folder with general access.

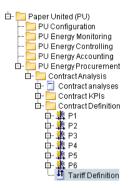
• Load document to B.Data database

This option lets you save the document to the B.Data database. This means that you and all authorized users can access the document.

9.1 Document management basics

# Example

You want to use B.Data to provide an energy requirement forecast for your organization for the coming year. To do this, you require the energy tariffs of the current year. In order to access the relevant information during configuration, you need to create a link in B.Data to the document containing the energy tariffs or to save the document in the B.Data database:



You can retrieve the document from the project tree of Plant Explorer using the respective application and edit it if required.

# 9.2 Inserting documents

# Procedure

- 1. Change to Windows Explorer and select the corresponding document.
- 2. Copy the document to the clipboard.
- 3. Return to B.Data and select the object at which you want to save the link.

🗗 🛃 System							
🛱 🛅 Customer							
🖨 🛅 Data collection							
👜 🛅 Calculation Level I Loop / Prototype							
👜 🛅 Calculation Level II MEVA's							
👜 🛅 Reports							
👜 🛅 Trends							
👜 🛅 Visualization							
🛱 🔂 Document Management							

4. Paste the object from the clipboard.

#### Note

Documents to be shared with other clients must be stored in a public directory.

#### Result



9.3 Saving documents

# 9.3 Saving documents

#### Overview

You can save files in all standard formats, e.g. image or document files, to the database. In this way you enable access of other users to these files.

#### Requirement

- Successful installation of all software components.
- The user has been assigned the following rights:
  - "viewing existing files" to open files.
  - "editing existing files": to save files to the database.

The following error messages are output if these rights are missing:

No permissions	Error message	Remedy
"viewing existing files"	<date><time></time></date>	Assign the corresponding authorization.
	You are not authorized to open this file.	
	BDataError 0004-00000002	
"editing existing files"	<date><time></time></date>	Assign the corresponding authorization.
("File \ Data \ fetch")	You are not authorized to add this file.	
	BDataError 0004-00000001	
File size limit exceeded	The file may not exceed the size of <value>.</value>	Request your system administrator to adjust the "FILE_MAX_SIZE_KB" in B.Data options.

# Procedure

- 1. Select the folder in which the object is going to be created.
  - System
     Customer
     Customer
     Calculation Level I Loop / Prototype
     Calculation Level II MEVA's
     Calculation Level II MEVA's
     Calculation
     Calculation
- 2. Click the "Insert File" button in the menu bar under "Analysis > File".

SIEMENS	
File Acquisition Processing	Analysis Master Data Administration Help
🖹 🔄 🎿 🖓 💄 🦺 Reporting Energy Efficiency File	Chart
🛃 System 🕨	Insert File Inserts a new File below
Menu	Inserts a new File below selected node.

#### The file object configuration dialog opens.

ł	t <b>i</b>	File - Plant Overview 🛛 🗖 🗙
	Name:	Plant Overview
	Description:	^
		×
	Filename:	Brewery.bmp
	Path:	
		Export
	9	OK Cancel

- 3. Enter a "Name" and an optional "Description".
- 4. Enter the path and file name in the "Path" field.
- 5. Save the configuration with "OK".

#### Result

You have successfully created a data object and saved a file to the database.



# 9.4 Editing documents

# Requirement

- At least one link and one file have been saved to the database.
- The user is authenticated accordingly.

# Procedure

1. Double-click the link or the file object.

# Result

The file opens in the corresponding application on the client.

# Administration

# 10

# 10.1 Logging Viewer

# 10.1.1 Using the Logging Viewer

### Overview

The Logging Editor displays the most important system messages and error messages. This section provides instructions related to the following actions:

- 1. Opening the Logging Editor
- 2. Fields in the Logging Editor
- 3. Filter options
- 4. Archiving messages

## Requirement

Successful installation of all software components.

10.1 Logging Viewer

# **Opening the Logging Editor**

1. Click the "Open Logging Viewer " button in the menu bar under "Administration > Management and Monitoring".

The Logging Viewer is opened.

Source	Message Class		Object	Timestamp	Short Text	Long Text	User	
Rights-Logging	User login		ADMIN		BAN:2014.03.1	User ADMIN Io		
Rights-Logging	User logout	10.03.2014 14:	ADMIN		BAB:2014.03.1	User ADMIN Io		
Rights-Logging	User login	10.03.2014 14:	ADMIN		BAN:2014.03.1	User ADMIN Io		
Rights-Logging	User logout	10.03.2014 14:	ADMIN		BAB:2014.03.1	User ADMIN Io		
Confirmation o	Confirmation o	10.03.2014 12:	Energy_Consu		report created!	Energy_Consu	ADMIN	
Confirmation o	Confirmation o	10.03.2014 12:	Energy_Consu		report created!	Energy_Consu	ADMIN	
Confirmation o	Confirmation o	10.03.2014 12:	Utilization - fro		report created!	Utilization - fro	ADMIN	
Confirmation o	Confirmation o	10.03.2014 11:	B.Data Options		B.Data Options	B.Data Options	ADMIN	
Confirmation o	Confirmation o	10.03.2014 10:	d_temperature		Node moved!	Node moved!	ADMIN	
Confirmation o	Confirmation o	10.03.2014 10:	d_compresse		Node moved!	Node moved!	ADMIN	
Confirmation o	Confirmation o	10.03.2014 10:	e_result		Node moved!	Node moved!	ADMIN	
Confirmation o	Confirmation o	10.03.2014 10:	e_result		Node moved!	Node moved!	ADMIN	
Confirmation o	Confirmation o	10.03.2014 10:	d_temperature		Node moved!	Node moved!	ADMIN	
Confirmation o	Confirmation o	10.03.2014 10:	e_result		Node moved!	Node moved!	ADMIN	
Confirmation o	Confirmation o	10.03.2014 10:	d_temperature		Node moved!	Node moved!	ADMIN	
Matrix	Created	10.03.2014 10:	d_A_E_V_117	12.08.2010 00:	Value-3103128	summertime/E	ADMIN	
Matrix	Created	10.03.2014 10:	d_A_E_V_117	12.08.2010 00:	Value-3103128	summertime/E	ADMIN	
Matrix	Created	10.03.2014 10:	d_A_E_V_117	12.08.2010 00:	Value-3103154	summertime/E	ADMIN	
Matrix	Created	10.03.2014 10:	d_A_E_V_117	12.08.2010 01:	Value-3103179	summertime/E	ADMIN	
Matrix	Created	10.03.2014 10:	d_A_E_V_117	12.08.2010 01:	Value-3103209	summertime/E	ADMIN	
Matrix	Created		d_A_E_V_117	12.08.2010 00:	Value-3103128	summertime/E	ADMIN	
Matrix	Created		d_A_E_V_117	12.08.2010 00:	Value-3103128	summertime/E	ADMIN	
Matrix	Created	10.03.2014 10:	d_A_E_V_117	12.08.2010 00:	Value-3103154	summertime/E	ADMIN	
Matrix	Created	10.03.2014 10:	d_A_E_V_117	12.08.2010 01:	Value-3103179	summertime/E	ADMIN	
Matrix	Created	10.03.2014 10:	d_A_E_V_117	12.08.2010 01:	Value-3103209	summertime/E	ADMIN	
Matrix	Created	10.03.2014 10:	d_A_E_V_117	12.08.2010 00:	Value-3103128	summertime/E	ADMIN	

The LoggingViewer always displays the messages of the current day; the most recent message is displayed on top. In the case of a message surge, the time filter automatically sets the "hour" mode to reduce the waiting time.

You may select the monitoring period. Select "Refresh" to view the messages of the selected monitoring period, e.g. of the selected day:

						L	.og	ging	I Vie	wer	
⊖Hour ●[	Day OMonth	From: 10.0	3.20′	4 0(	0:00	:00			-	<	>
			4	М	ärz		• •	201	4 ►		
Source	Message Class	Event time	Mo	Di	Mi	Do	Fr	Sa		р	Short Text
Rights-Logging	User login	10.03.2014 14	24	25 4	26	27	28	1	2 9		BAN:2014
Rights-Logging	User logout	10.03.2014 14		11	12	13	14	15	16		BAB:2014
Rights-Logging	User login	10.03.2014 14	17	18	19	20	21	22	23		BAN:2014
Rights-Logging	User logout	10.03.2014 14	24	25	26	27	28	29 5	30 6		BAB:2014
Confirmation o	Confirmation o	10.03.2014 12	31		2	3	4	9	0		report crea
Confirmation o	Confirmation o	10.03.2014 12		-	Foda	ny C	Clear	r			report crea
Confirmation o	Confirmation o	10.03.2014 12	TU	tiliza	tion	- fro.				1	report crea

Use the "<" and ">" buttons to page the scroll the selected time interval towards the past or future.

All columns can be sorted in ascending or descending order. Click in the header of the respective column to sort it.

Event time	Δ
10.03.2014 10:04:19	
10.03.2014 10:08:26	
10.03.2014 10:10:19	
10.03.2014 10:10:22	
10.03.2014 10:13:28	
10.03.2014 10:13:34	
10.03.2014 10:13:38	

#### Fields of the LoggingViewer

The following columns functions are available in the LoggingViewer:

Source

The error source is the first sorting criterion. Three error sources are currently implemented in the system: Kernel, database, and measurements editor.

Error class

The error class can be used to refine message filtering, e.g. evaluation error, job management error, deleted, or modified.

• Event time

The event time is used to record the time of error or event occurrence.

• Object

Certain messages include details on the object in this area. For example, the measurements editor logs the data point with name and the MESS\_ID that has been processed.

• Time stamp

The specific time stamp affected by changes, deletion of creation of new measured values is logged in this area.

• Stext

The short text, for example, logs the way in which a value has been changed: Value 12.88 -> 13.54

• Ltext

The measurements editor logs the daylight saving and winter time as well as the compression level in this column. The remaining sources log the error message in plain text in this column.

• User

The user having triggered the event is logged, e.g. BDATA\_SYS for automatic jobs and the respective user for changes in the measurements editor.

#### Administration

10.1 Logging Viewer

### Filter functions of the LoggingViewer

Use the filter function for fast access to the correct information. Click "Filter" in the Logging Viewer to open the "Filter" dialog.

3		Filter	×
Source		<ul> <li>Measurement configuration</li> </ul>	AND
Message Class		- Created	
Timestamp	-	• 10.03.2014 15:22:13	•
Timestamp	-	• 10.03.2014 15:22:13	•
			OK Cancel

Select the column from the first list. Select the operator from the second list. Additional entries are available in the third column, depending on the entry you selected in the first column. You may also logically link the filters by setting an "AND" or "OR" operation in the fourth column.

Click "OK" to activate the filters. The result is displayed in the Logging Viewer. Uncheck the "Filter" check box to cancel filtering.

The system provides several database jobs for archiving messages. For information on jobs and settings, refer to Job queue (Page 371).

# 10.1.2 Security settings / Logging

# Requirement

All software components are installed.

# **Password policies**

Administer the password policies under "File > B.Data Options > Database".

Common Executable Tasks Mevas Jobs Quer	Types Module Types DB App. Client		
		<b>^</b>	Edit
NURSE_TRANSFERID	0		
OLD_PASSWORDS_NUMBER	3		
PASSWORD_ADMIN_EXPIRED_DAYS	1000		
PASSWORD_EXPIRED_DAYS	365		
PASSWORD_FORBIDDEN_CHARS	@;.		
PASSWORD_LANG_SPECIFIC_CHARS	äöüÄÖÜß		
PASSWORD_MIN_CHARS	1		
PASSWORD_MIN_DIGITS	0		
PASSWORD_MIN_LANG_SPECIFIC_CHARS	0		
PASSWORD_MIN_LENGTH	6		
PASSWORD_MIN_PUNCT_MARKS	0		
PASSWORD_PUNCT_MARKS	!#\$%^&*()<>+-=':_[]{}/l\`~		
PLAUS_GAP_KKS	0		
PREPROCESSOR_DEBUG	0	<b>_</b>	

10.1 Logging Viewer

# Logging of specific actions

The following actions are logged in B.Data and can be viewed in the LoggingViewer.

Source	Message Class	Event time	Object	Timestamp	Short Text	Long Text	User
Rights-Logging	User login	10.03.2014 14:	ADMIN		BAN:2014.03.1	User ADMIN Io	
Rights-Logging	User logout	10.03.2014 14:	ADMIN		BAB:2014.03.1	User ADMIN Io	
Rights-Logging	User login	10.03.2014 14:	ADMIN		BAN:2014.03.1	User ADMIN Io	
Rights-Logging	User logout	10.03.2014 14:	ADMIN		BAB:2014.03.1	User ADMIN Io	
Confirmation o	Confirmation o	10.03.2014 12:	Energy_Consu		report created!	Energy_Consu	ADMIN
Confirmation o	Confirmation o	10.03.2014 12:	Energy_Consu		report created!	Energy_Consu	ADMIN
Confirmation o	Confirmation o	10.03.2014 12:	Utilization - fro		report created!	Utilization - fro	ADMIN
Confirmation o	Confirmation o	10.03.2014 11:	B.Data Options		B.Data Options	B.Data Options	ADMIN
Confirmation o	Confirmation o	10.03.2014 10:	d_temperature		Node moved!	Node moved!	ADMIN
Confirmation o	Confirmation o	10.03.2014 10:	d_compresse		Node moved!	Node moved!	ADMIN
Confirmation o	Confirmation o	10.03.2014 10:	e_result		Node moved!	Node moved!	ADMIN
Confirmation o	Confirmation o	10.03.2014 10:	e_result		Node moved!	Node moved!	ADMIN
Confirmation o	Confirmation o	10.03.2014 10:	d_temperature		Node moved!	Node moved!	ADMIN
Confirmation o	Confirmation o	10.03.2014 10:	e_result		Node moved!	Node moved!	ADMIN
Confirmation o	Confirmation o	10.03.2014 10:	d_temperature		Node moved!	Node moved!	ADMIN
Matrix	Created	10.03.2014 10:	d_A_E_V_117	12.08.2010 00:	Value-3103128	summertime/E	ADMIN
Matrix	Created	10.03.2014 10:	d_A_E_V_117	12.08.2010 00:	Value-3103128	summertime/E	ADMIN
Matrix	Created	10.03.2014 10:	d_A_E_V_117	12.08.2010 00:	Value-3103154	summertime/E	ADMIN
Matrix	Created	10.03.2014 10:	d_A_E_V_117	12.08.2010 01:	Value-3103179	summertime/E	ADMIN
Matrix	Created	10.03.2014 10:	d_A_E_V_117	12.08.2010 01:	Value-3103209	summertime/E	ADMIN
Matrix	Created	10.03.2014 10:	d_A_E_V_117	12.08.2010 00:	Value-3103128	summertime/E	ADMIN
Matrix	Created	10.03.2014 10:	d_A_E_V_117	12.08.2010 00:	Value-3103128	summertime/E	ADMIN
Matrix	Created	10.03.2014 10:	d_A_E_V_117	12.08.2010 00:	Value-3103154	summertime/E	ADMIN
Matrix	Created	10.03.2014 10:	d_A_E_V_117	12.08.2010 01:	Value-3103179	summertime/E	ADMIN
Matrix	Created	10.03.2014 10:	d_A_E_V_117	12.08.2010 01:	Value-3103209	summertime/E	ADMIN
Matrix	Created	10.03.2014 10:	d_A_E_V_117	12.08.2010 00:	Value-3103128	summertime/E	ADMIN

The LoggingViewer stores all information pertaining to security settings and the rights logging source.

B.Data reporting also provides modules that can be used to output log information in Excel reports. These are the "User rights changes" and "Security changes" module types.

The "User rights" module type may be used to call an overview of all system users and their rights.

The following example shows some actions that are logged in the system:

- Each successful login or logoff, e.g. "User BDATA\_SYS logged in to DocLiber from atw11565@ATPC0BAD".
- Each failed login attempt, e.g. "Unknown user TEST attempted to login to DocLiber from atw11565@ATPC0BAD", or "User BDATA\_SYS failed to log in to DocLiber from atw11565@ATPC0BAD".
- An unauthorized user carrying out an action.
- Authorization changes, e.g. "User FLORIAN was added to group Administrators".

See also

B.Data options (Page 373)

10.1 Logging Viewer

# 10.2 Message lists

# 10.2.1 Basic information on message lists

### Overview

A message list informs you of defined deviations of the measured values of a data point. You can view this information as follows:

- by means of a message list view
- by means of e-mail

Configure the deviation criteria for the measured values of a data point in the "Plausibility" area of a data point.

Message lists contain three categories:

- "Predefined": contains predefined message lists. The following predefined message lists are available:
  - All: contains all messages and warnings.
  - All Violations: contains all messages generated when a measured value violates a limit.
  - All Warnings: contains all warnings generated when a measured value approaches a configured limit.

The predefined message lists cannot be edited or deleted.

- "Public": contains published message lists that can be used by all users.
- "My": contains message lists that you have configured.

### Notes on message lists

#### NOTICE

Messages in B.Data do not replace the message configuration in the process control system

The message is not linked to the process control system. If you want to react to the message, you have to configure limit monitoring in the process control system.

To view the messages in a message list, you need to configure the limits for the required data point and activate their message.

Messages are disabled in the project by default. Contact your administrator if you want to enable the message for the project.

# Procedure for configuring a message list

To configure a message list, follow these steps:

- 1. Configure a message list.
- 2. Define the message list contents by means of a filter.
- 3. You can also configure a message notification, if necessary.

# 10.2.2 Configuring custom message list

## Overview

You may configure a custom alarm list. In this alarm list you use filters to define which messages are displayed.

### Requirement

- The data point is configured.
- The data point limit is configured.
- The message is activated for the limit.

### Procedure

- 1. Click the "Open KPI Message Lists" button in the menu bar under "Administration > Management and Monitoring".
- 2. Then click "New".

The alarm list configuration dialog opens.

3. Enter a unique name and an optional description for the alarm list.

The "Owner" field displays the name of the user who configures the alarm list.

- 4. Activate "Publish" to make the alarm list available to all users.
- 5. Confirm the configuration with "Save".

# Result

The custom alarm list is configured.

<i>5</i>		KPI	Alert Lists			- 🗆 🗙
Predefined     All Violations     All Violations     All Violations     All Violations     Public     All not acknowledged	Name: Description: Owner: ADI	MyNewFilter AIN ublic				
C- Do My All Alarms MyNewFilter	4	.] Column	Condition	Value	D] AND/OR	Add Delete Up Down
New Clone	Default Quer	y Type: Day				•
Delete	Save				Preview	Notification(s)
					OK	Cancel

Configure one or more filters to specify the contents of the alarm list. You can use the "Clone" function to copy the custom alarm list for configuring a different alarm list. You may delete the custom alarm list.

You can open a alarm list that you have made available to all users by selecting "Configuration > KPI Alert Lists" in the project tree of Plant Explorer.



# See also

Configuring filter for a message list (Page 366) Configuring message notification (Page 368) Configuring the view for a message list (Page 370)

# 10.2.3 Configuring filter for a message list

## Overview

A alarm list filter allows you to exclude messages that you do not need.

The following rules are valid for filters:

- For a alarm list configuration containing multiple filters, you need to logically link the filters by means of "AND" or "OR" operator.
- In a configuration with multiple filters, the filters in the list are evaluated from the top down.

### Requirement

The alarm list is configured.

## Procedure

- 1. Select the required alarm list under "Administration > Alarm lists" in the Plant Explorer.
- 2. Click "Add" in the "Configuration" tab.
- 3. You may enter filter expressions in a parenthesis.
- 4. Select a filter criterion and a condition, e.g. "Value" and ">".
- 5. Enter a value, e.g. 1000.
- 6. Select an operator / additional operators to interconnect multiple filters.
- 7. Click "Up" or "Down" to specify the sorting order by which multiple filters are to be evaluated.
- 8. Confirm the configuration with "Save".

# Result

The filter for the alarm list is configured. With this filter, messages are included in the alarm list if their data point value is greater than 1000. You can check the result of the filter configuration in the "View" tab. You can delete the filter, or add a new one.

2		KPI	Alert Lists				- 🗆 ×
-  Predefined  -  All Violations  -  All Violations  -  Public  All not acknowledged	Name: Description: Owner: ADI p Filter:	MyNewFilter MIN ublic					
E- My All Alarms MyNewFilter	4	.] Column Value	Condition	Value 1000	D]	AND/OR	Add Delete Up
New Clone Delete	Default Quer	y Type: Day			F	Preview	Down  Notification(s)
						OK	Cancel

# See also

Configuring custom message list (Page 364) Filter criteria for a message list (Page 476)

# 10.2.4 Configuring message notification

## Overview

A message notification informs you by e-mail of unacknowledged messages from a alarm list.

🞴 2 neue Alarme in der Alarm	liste BData_Sys_P	rivatView Message (Plain Text)			
Eile Edit View Insert Forma	at <u>T</u> ools <u>A</u> ctions	Help			
🛛 😂 Reply   🖓 Reply to All   🙈 For	<u>w</u> ard   🎒 🗈   🔀	🔻   🏠   🎦 🗙   🔺 🔹 🖈 A	🗧   a 🕉   🕜 🚽		
From: bdatauser1@set.khe.siem To: BDataUser2 Cc:	ens.de	Sent: Wed 9/28/2011 1	1:05 AM		
Subject: 2 neue Alarme in der Alarr	nliste BData_Sys_Priva	tView.			
Die/Der 2 neuen/neue Alarme in der Alarmliste BData_Sys_PrivatView Sind:\n\r28.09.2011 08:38:40, Value of 10 violates Upper Limit of 3. 28.09.2011 08:45:38, Value of 12 violates Upper Limit of 3.					

## Requirement

- The alarm list is configured.
- The user with the e-mail address is created.

## Procedure

- 1. Select the required alarm list under "Administration > Alarm lists" in the Plant Explorer.
- 2. Click "Notification(s)" in the "Configuration" tab.

The "Message notifications" dialog opens.

3. Select a time interval and a time unit for the notification cycle.

The "Last run" and "Next scheduled run" fields show the time stamp for the last and next verification.

- 4. To ignore old messages, activate "Set". Select a time for the activation of the notifications.
- 5. To activate the notifications, select the "Active" option.

6. Use the arrow keys to assign the e-mail address.

<b>=</b>		Notifications	_ □	×
Notification Cycle:	1 h	•		
LastRun:				
Next Run:				
Processed Until:	: set			
Active				
	Known Adresses:		Assigned Reciever(s):	
HELMUT SCHN	IN (anne.hofmann@siemens.com) IIDT (helmut.schmidt@siemens.com)		ADMIN (bdata@siemens.com) FRANZ MEIER (franz.meier@siemens.com)	
MUSTERMANN	M (max.mustermann@siemens.com)	⇒		
		4		
L				
			OK Cancel	

7. Click "OK".

### Result

Message notification is configured. Open the view of the corresponding alarm list to acknowledge a message.

## See also

Configuring custom message list (Page 364) Time unit abbreviations (Page 477) Setting up users (Page 88)

# 10.2.5 Configuring the view for a message list

### Overview

Using the view for a alarm list you specify the period of evaluation.

### Requirement

The alarm list is configured.

## Procedure

1. Double-click the required alarm list under "Configuration > KPI Alert Lists" in the project tree of Plant Explorer.

The "Alarm List View" dialog opens.

- 2. Select a query type.
- 3. Select a start and end time.
- 4. To refresh the alarm list view in manual mode, disable "Automatic update" and then click "Refresh".

"Automatic update" is activated by default for a alarm list view.

5. Confirm the configuration with "OK".

### Result

The alarm list view is configured. Click "Acknowledge" to prevent a message from being sent by e-mail.

/ Auto F		,		11.03.2014 00:00			Refresh
Variable		Cause Timestamp	Generation Timestamp 🗳	Alarm Class	Message	State	Ack. User (B
	onsumption_Incomer		11.03.2014 10:01:44	Violation	Value of 600 violates Upper Limit of 550.	K	
	onsumption_Incomer	17.02.2014 04:15:00	11.03.2014 10:01:44	Violation	Value of 560 violates Upper Limit of 550.	к	
	onsumption_Incomer	20.02.2014 03:45:00	11.03.2014 10:01:45	Violation	Value of 600 violates Upper Limit of 550.	к	
	onsumption_Incomer	17.02.2014 03:15:00	11.03.2014 15:36:23	Violation	Value of 600 violates Upper Limit of 550.	К	
	onsumption_Incomer	17.02.2014 03:15:00	11.03.2014 15:36:23	Violation	Value change by 258 violates Max Chan	К	
	onsumption_Incomer	16.03.2014 14:15:00	11.03.2014 15:38:15	Violation	Value of 900 violates Upper Limit of 550.	К	
J_EL_C	onsumption_Incomer	16.03.2014 14:00:00	11.03.2014 15:38:15	Violation	Value of 800 violates Upper Limit of 550.	К	
J_EL_C	onsumption_Incomer	16.03.2014 14:15:00	11.03.2014 15:38:15	Violation	Value change by 100 violates Max Chan	К	
I_EL_C	onsumption_Incomer	11.03.2014 00:30:00	11.03.2014 15:38:15	Violation	Value of 700 violates Upper Limit of 550.	К	
I_EL_C	onsumption_Incomer	11.03.2014 00:15:00	11.03.2014 15:38:15	Violation	Value of 600 violates Upper Limit of 550.	К	
LEL_C	onsumption_Incomer	11.03.2014 00:30:00	11.03.2014 15:38:15	Violation	Value change by 100 violates Max Chan	к	

# 10.3 Job queue

# 10.3.1 Using the job queue

### Overview

B.Data Job Scheduling can be used to run database jobs once or at cyclic intervals. The Job Queue lists all configured database jobs.

### Fields in the Job Queue

The Job Queue provides the following information for each job.

Job

Unique ID for handling the job in the system.

• Function

Name of the database job

• Tot.

duration [sec] of job execution.

Interval

Job execution cycle.

• C

Status, if the job is canceled.

• Err

The status is entered in this item in case of a malfunction.

Next

Time stamp that indicates the next job start.

Last

Indicates the time of the last job session.

• Description

Short description of the database job

• SQL

SQL syntax

User

User having started this job or entered it in the Job Queue.

10.3 Job queue

# Requirement

Successful installation of all software components.

## Procedure

1. Click the "Open Job Queue" button in the menu bar under "Administration > Task Management".

The B.Data Job Queue opens.

The Job Queue contains the jobs to be executed at cyclic intervals or in the future. You can always "refresh" the view.

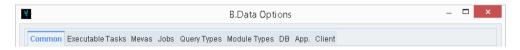
<b>E</b>		B.Data Job Que	ue		– 🗆 ×
Active Jobs:					
Function			Start	Repeat Interval	Next Run
	Close Deli	ete Job	New	Refresh	

- 2. Create a new job as follows:
  - Click "New".
  - Select the "Type".
  - Select the "Start time".
  - Select the "Cycle time". The job is executed only once if you select "none".
  - Save the configuration with "OK".

<u>1</u>	Start new job	-		×
Туре:	Job for automatic analyses			•
Starting time:	10.03.2014 15:38:20			-
Cycletime:	1 Hour			-
	ОК	Ca	ancel	

- 3. Delete a new job as follows:
  - Select the job from the Job Queue.
  - Click "Delete job".

"B.Data Options" supports configuration tasks in all system areas and user-specific customizations. The following table shows the available areas:



### Table 10-1 B.Data options

Tab	Functions						
General							
		sks Mevas Jobs QueryT	Types Module Type	es DB App. Client			
	Choose Language: en	•					
	Tooltips:	Show Tool Tips.					
		Show extensive ToolTips.					
		Show ToolTips for folders.					
		Show Reason Tooltips.					
	4	Use my DB-DLV for new E	xplorer.				
	Explorer Appearance: 🗹 Show Navigation Bar.						
	4	Show Quick Search.					
	1	Show Nodes Count.					
	The "Conoral" to	primorily conta		oific cottings in the	a dialag was as	n austamina tha	
			-	cific settings. In thi	s dialog, you ca	n customize the	
	client language, t	ne tooitips, and t	ne Explorer	appearance.			
Executable tasks	Original Encoded in Ta	ter Maure Jahr Oursel	Duran Madula Tur	DD Ann Olient			
		sks Mevas Jobs Query					
	Id Name	→ Desci		Execution File	Active	New	
	2 ASCII FTP Import 42 ASCII FTP Import		FTP Import FTP Import Text	TskFtpTransfer.cmd TskFtpTransferTEXT.cmd		Edit	
	41 Batchdata recalc		data recalc	TskGenBatchRecalc.cmd		Delete	
	14 Bootstrap routine		trap routine for re	RestartReport.cmd		Delete	
	See Task Manag	ement (Page 390	)				
Measuring variables	Common Executable Tas	ks Mevas Jobs Query T	ypes Module Type	s DB App. Client			
	ld Name		Description			Active	
	2708 Multiplication of r	MEVA's		n multiply a variable count of			
	2732 Percent				age of 2 data pointsVALUE[x] = DP_1 / DP		
	2772 Subtraction of n	/EVA's	This function su	btracts a variable count of ME	EVA's:VALUE[X] = MEV	✓	
	2689 Energy rate with	availableness	Energy rate with	i availabilitylinked objects: da	ta point, digital data p	✓	
	2691 Energy rate with	imit	Energy rate with	i thresholdlinked objects: dat	a point, profile1, profil	✓	
	You can activate	or deactivate "M	easuring va	riables" in this tab.			
			easuring val				
Jobs	Common Executable Tas	ks Mevas <mark>Jobs</mark> Query T	ypes Module Type	es DB App. Client			
	ld Name		Description			Active	
		3 PM historical PPD 6h		R/3 PM historical counted mea			
		3 PM historical PD 6h					
		cquisition data ext.		acquisition data extended			
	2781 Job for DP's to ro	ll out	Job for DP's to r	oll out			
	2808 Querytype defaul	t period for purging	Job for assignir	ig "Querytype and -directory" t	he default periods fo		
	You can activate	or deactivate "B.	Data databa	ase jobs" in this tab	).		
		ks Mevas Jobs Querv T	vpes Module Typ	es DB App. Client			
Query types	Common Executable Tas	Common Executable Tasks Mevas Jobs Query Types Module Types DB App. Client					
Query types		A Descriptio				Active	
Query types	ld Name	→ Descriptio Query 14 d					
Query types	ld Name 1051 14 days back	Query 14 d	ays back				
Query types	ld Name 1051 14 days back 1001 Ad-Hoc	Query 14 d Ad-Hoc que	ays back ery			<b>v</b>	
Query types	ld Name 1051 14 days back 1001 Ad-Hoc	Query 14 d Ad-Hoc qui Business y	ays back ery /ear				
Query types	ld Name 1051 14 days back 1001 Ad-Hoc 1049 Business year	Query 14 d Ad-Hoc qui Business y 6h Business y	ays back ery /ear	on query		<b>v</b>	

Tab	Functions			
Module types	0	stable Table Massa Jaka As	The state of	DB Are Allert
		utableTasks Mevas Jobs Qu		
	Id Name 1443 Acquis	sition control	△ Description Acquisition control	Active
		s batch	Alarms batch	
	1402 Baland		Balance module	
	3926 Balan	ce batch	Balance batch	
	3935 Baland	ce BFS with timestamp	Balance BFS with	n timestamp 🔽
	You can a	ctivate or deactivate	"module type	es" in this tab.
Database		utableTasks Mevas Jobs Qu		
	Name		∆ Value	Edit
	ABFRAGE_MAX		65000	
	ABGL_CHANGE		1	
	ABGL_CHANGE	=_IMPORT E_KLASSIFIZIERUNG	0	
		E_MAX_RUNTIME_P2	900	
	Tab for ed	iting global database	e settings.	
	¥	Setting \	/ariable	_ <b>□</b> ×
	Name:	NURSE_CYCLE		
	Value Type:	Number		
	Value			
	Vilac			60000
			_	
			ок	Cancel
	¥	Setting \	/ariable	
	Name:	NURSE_SEARCH_PATHS		
	Value Type:			
	raide rijpe.	104		
	Value			
	C:\BData\GU	Jl\mcl\sink\FTP[C:\BData\GUI\m	cl\sink\Kernel	
			ОK	Cancel
	The tab pr	ovides correspondin	a number an	d text input fields
	-	-	-	
		n of the various optic	ons.	
	Name			Description
	ABFRAGE	_MAX_ZEILEN		Applies to the "Query max. rows wrapper" module
				and specifies the number of rows leading a column
				break.
	ABGL_CH	ANGE		If this value equals 1, derived datapoints will be
				recalculated during execution of the "Recalculate
				derived measurements" job.
	1			uenveu measurements juu.

Tab	Functions	
	ABGL_CHANGE_IMPORT	Import functions may set this value to indicate the number of values most recently imported. Recalcu- lation is stopped if the value overshoots the limit of 50,000 and resumed when the value has dropped below this limit again. Recalculation should be in wait state during the import of large data volumes. This parameter is only relevant if ABGL_CHANGE_WAIT = 1.
	ABGL_CHANGE_KLASSIFIZIERUNG	Generally enables (value = 1) or disables (value = 0) differentiation between actual and forecast values for derived datapoints during execution of the "Re-calculate derived measurements" job for derived datapoints.
	ABGL_CHANGE_WAIT	Specifies whether to delay the recalculation of de- rived datapoints during execution of the "Recalcu- late derived measurements" job for derived datapoints. Enabled if value = 1, disabled if value = 0.
	ABGL_DEBUG	If >= 2, all recalculations are logged to the error journal during execution of the "Recalculate derived measurements" job for derived datapoints. Logging is disabled if the value is < 2.
	AUSROLL_ANZAHL_MONATE	Number of month for "Job DP roll-out", starting with job initiation. The default value is 36, i.e. three years.
	AUSROLL_INIT_FLAG	"Job DP roll-out" issue:
		1: The entire time frame that has been defined for the rollout will be processed. Existing gaps will be padded in this way.
		0: Roll-out only up to the first value that exists.
		The default is 0.
	AUSROLL_ROOT_ORDNER	For "Job DP roll-out", this specifies the node ID of the folder that contains the derived measurements or datapoints to roll out. The job is canceled and a corresponding error message is generated if this entry is missing.
Database (continued)	AUSROLL_STATISTIK	Specifies the number of datapoints rolled out for the currently active "Job DP roll-out" job.
	BDATA_EXPORT_FILENAME_MODUS	Concerns the "Job for ASCII export to B.Data standard":
		0: File name with date and time.
		1: File name without date and time
	BDATA_EXPORT_PATH	Concerns the "Job for ASCII export to B.Data standard":
		Export directory. An error message is output and "C:\Data\Import" is returned as default directory if this entry is missing.

Tab	Functions						
	BDATA_LASTPRF_QS	Specifies whether or not to include corrupted values in the calculation for the "Load profile analysis" module. 0: Corrupted values are ignored.					
		1: Corrupted values are included.					
	BDATA_LOG_PATH	Job PDR Import: Path for the file with non-cyclic time stamps.					
	BILA_HEADER	Concerns the "Balance" module: 0: Hide header. 1: Show header.					
	BILA_TS_HEADER	Concerns the "Balance with time stamp" module: 0: Hide header. 1: Show header.					
	COUNTRY_CODE	Saves the regional setting the user has selected in database setup. Currently, the following coun- tries/regions are supported: 2511 for Austria, 2512 for Germany, 2513 for Spain (Catalonia).					
	DB_DATE_FORMAT	Date/time property format. Default: dd.mm.yyyy hh24:mi:ss					
	DB_FEJO_THRESHOLD	Concerns the error journal:					
		Suppression in [s] if many error messages with identical text content are being received. All new incoming error messages having a time stamp with- in the threshold and identical text entries in the error journal will not be entered in the error journal. All error messages are output when the value is 0.					
	DB_ZAEHLER_CHECK	Specifies whether to enable or disable filtering for "MEVAs with count functionality".					
		0: Filtering is disabled.					
		1: Filtering is enabled.					
Database (continued)	DB_ZAEHLER_DEBUG	Specifies whether or not to enter additional diagnos- tics messages in the error journal for "MEVAs with count functionality".					
		0: disabled.					
		>= 1: enabled.					
	DB_ZAEHLER_FILTER	Minimum value to be set for count filters in order to be taken into account for "MEVAs with count func-tionality".					
	DEFAULT_CAHE_BEHALTEN	The "Delete analyses job" does not delete analyses (reports started manually or automatically) marked with selected "Keep" check box. This parameter defines the check box default for the creation of new analyses.					
		0: Do not keep					
		1: Keep					

Tab	Functions	
	DELETE_BY_COMPRESS_UNTIL	For the "Compress measurement journal job", if the "Delete measured values" has been parameterized at the datapoint: Age in seconds as of which deletion is permitted. Default is "14 days" (=1209600 sec).
	DELETE_MSJO_COMMIT	For the "Delete measurement journal job": Defines the number of data records to delete before a COMMIT is set. Default: 1000
	DELETE_MSJO_UNTIL	For the "Delete measurement journal job": Age in days as of which deletion is permitted. The job is canceled and a corresponding error message is generated if this entry is missing.
	FEJO_EXPORT_FLAG	For the "Delete error journal job": If the value 1 is set, the messages are exported to a file prior to deletion; the messages are only deleted if 0 is set.
	FEJO_EXPORT_MESS_FLAG	For the "Archive MV errors" job: If the value 1 is set, the messages are exported to a file prior to deletion; the messages are only deleted if 0 is set.
	FEJO_EXPORT_MESS_PATH	For the "Archive MV errors" job: Specifies the export directory for messages to be deleted. The file name "FEJO_EXPORT_MESS_PATH_" plus the date (DD-MM-YYYY) is set permanently.
	FEJO_EXPORT_MESS_UNTIL	For the "Archive MV errors", this parameter speci- fies the number of days the entries from the MV editor are retained in the database.
		The entries will be deleted on expiration of this time.
	FEJO_EXPORT_PATH	For the "Delete error journal job": Specifies the export directory for messages to be deleted. The file name "FEJO_EXPORT_PATH_" plus the date (DD-MM-YYYY) is set permanently.
Database (continued)	FEJO_EXPORT_UNTIL	For the "Delete error journal job", this parameter specifies the number of days the error messages are retained in the database.
		The error messages will be deleted on expiration of this time.
	FILE_MAX_SIZE_KB	Specifies the maximum size in KB for files to be saved to the database. Default: 3000 KB
	IMPORT_DEBUG	Enables/disables detailed logging at the DB inter- faces; enable (1)/disable (0)
	ITSEC_EXPORT_FLAG	For the "Delete old IT Security Data" job: If the val- ue 1 is set, the error messages are exported to a file prior to deletion; the messages are only deleted if 0 is set.
	ITSEC_EXPORT_PATH	For the "Delete old IT Security Data" job: Specifies the export directory for messages to be deleted. The file name "FEJO_ITSEC_EXPORT_" plus the date (DD-MM-YYYY) is set permanently.

Tab	Functions				
	ITSEC_EXPORT_UNTIL	For the "Delete old IT Security Data" job: All security entries that are no older than ITSEC_EXPORT_UNTIL (specified in days) at the time of execution are deleted from the error journal.			
	LANGUAGE_CODE	Specifies the language for the B.Data database. Set by the Database Setup program. Currently support- ed languages are German and English. Possible values: DEU (German), ENG (English)			
	Manual Insert Offset	Defines the handling of the first time stamp during manual input:			
		0: Values are entered with default B.Data end time stamp. The additional time stamp entered at the start is therefore listed as start time stamp.			
		1 (default): Values are entered with default B.Data end time stamp.			
	MATRIX_MAX_WORK_LOAD_FOR_FULL _CLIENT	Limits the number of values in a matrix to the en- tered number.			
	MATRIX_MAX_WORK_LOAD_FOR_WEB	Limits the number of values in a matrix in B.Data Web to the entered number.			
	MAX_ATTEMPS_TO_LOGIN	Specifies the maximum number of unsuccessful login attempts to tolerate before the account is locked (an administrator may release the account again)			
	MEVA_CHECK_LUECKEN	1: Check for gaps in the "df_mess_plusx", "df_avg", "df_max", and "df_min" time sequences (15 min).			
		0: No check Can only be active if MEVA_STER_THRESHOLD is			
		disabled (= 0).			
	MEVA_STER_THRESHOLD	Specifies the threshold for the status returned for a specific Meva.			
		0 = disabled			
		> 0; threshold percentage; numbers with decimal places are also permitted, e.g.: 60,8.			
		Valid for the following Mevas: minimum, maximum, average, total, total real			
		Can only be active if MEVA_CHECK_LUECKEN is disabled (= 0).			
Database (continued)	MODULE_EINHEIT	Valid for the "Log with from/to" and "Continuous trend" modules. The units specified in the integrated Mevas are not output in the header unless MODULE_UNIT = 1. Also valid for the "Query with 2 time stamps (from/to)" module. The units of the integrated datapoint are output accordingly in the header.			
	NO_DST	Global parameter; usually configured by means of Database Setup. Daylight saving time YES (value = 0) / NO (value = 1). Example: 0=Europe with day- light saving time, or 1=China without daylight saving time.			

Tab	Functions	
	NURSE_CYCLE	Cycle in ms during which "autonurse.exe" is launched
	NURSE_SEARCH_PATHS	Path(s) scanned by "autonurse.exe" for existing sink files. The paths are separated by the ' ' character (without single quote)
	NURSE_STORAGE_DAYS	Specifies the number of days to expire before the imported sink files are deleted from the import folder.
	NURSE_TABLE	Specifies the table to use for entries (MSJO, or MSJO4)
	NURSE_TRANSFERID	1 for MSJO, 0 for MSJO4
	OLD_PASSWORDS_NUMBER	User: Specifies the number of recent passwords that the system remembers to prevent redundant assignments by users. Example: The last three passwords may not be used to assign a new PWD.
	PASSWORD_ADMIN_EXPIRED_DAYS	User: Specifies the number of days (z. B.: 90 days) to expire before administrators must change their password (it never expires in bdata_sys).
	PASSWORD_EXPIRED_DAYS	User: Specifies the number of days to expire until the password must be changed.
	PASSWORD_FORBIDDEN_CHARS	Password: Invalid characters in the password.
Database (continued)	PASSWORD_LANG_SPECIFIC_CHARS	Password: Definition of valid country-specific spe- cial characters
	PASSWORD_MIN_CHARS	Password: minimum character length of the pass- word.
	PASSWORD_MIN_DIGITS	Password: Minimum number of digits the password must contain.
	PASSWORD_MIN_LANG_SPECIFIC_CH ARS	Password: Minimum number of country-specific special characters the password must contain.
	PASSWORD_MIN_LENGTH	Password: minimum length of the password (>= MIN_CHARS+MIN_DIGITS+MIN_PUNCT_MARKS+ MIN_LANG_SPECIFIC_CHARS)
	PASSWORD_MIN_PUNCT_MARKS	Password: minimum number of special characters the password must contain.
	PASSWORD_PUNCT_MARKS	Password: Definition of valid special characters
	PLAUS_GAP_KKS	Specifies whether or not to display the KKS text for the "Plausibility check gaps".
		0: No 1: Yes
	PREPROCESSOR_DEBUG	Specifies whether or not additional debug infor- mation is entered in the error journal while online compression is activated.
		0: No 1: Yes
		2: Yes (extensive debug information)

Tab	Functions				
	PREPROCESSOR_ENABLE	Activates online compression of measured values during import to B.Data. Online compression is only executed if one of the several compression func- tions have been configured at the corresponding datapoint.			
		You can always run the compression functions by means of the "General recalculation" or "Compression of the measurement journal" jobs.			
		0: No			
		1: Yes			
	PRINT_VOLLZUGS_MELDUNG	Compress, expand: Defines whether or not to display completion reports.			
		0: No 1: Yes			
Database (continued)	Productplan_limit	Specifies the number of recent days for which users may still modify production plans.			
	REPA_LOES_ADHOC_DEF	Specifies the period for deleting storage folders of the type "ad hoc" for the "Storage folder deletion period defaults" job. All specifications in days.			
	REPA_LOES_JAHR_DEF	Specifies the period for deleting storage folders of the type "year" for the "Storage folder deletion peri- od defaults" job. All specifications in days.			
	REPA_LOES_MONAT_DEF	Specifies the period for deleting storage folders of the type "month" for the "Storage folder deletion period defaults" job. All specifications in days.			
	REPA_LOES_MONATVAR_DEF	Specifies the period for deleting storage folders of the type "current month" for the "Storage folder deletion period defaults" job. All specifications in days.			
	REPA_LOES_TAG_DEF	Specifies the period for deleting storage folders of the type "day" for the "Storage folder deletion period defaults" job. All specifications in days.			
	STP_HOTFIX	Hotfix number: Set by the Database Setup during the B.Data package updates.			
	STP_LAST_UPDATE	Date of last update: Set by the Database Setup during the B.Data package updates.			
	STP_SERVICE_PACK	Service pack number: Set by the Database Setup during the B.Data package updates.			
	STP_VERSION	Version: Set by the Database Setup during the B.Data package updates.			
	VERBOSE	If > 0, additional debug information is written to the error journal during calculation of modules and mevas. Possible values are 0, 1, and 2; no debug information is entered if the value = 0, the most debug info is entered when the value = 2.			

Tab	Functions		
Appl. "Application	Common ExecutableTasks Mevas Jobs Qu	arv Types Module Types D	B Ann. Client
Server"			
			1=On, 0 results in most trace info
	Win81V6 HKEY_LOCAL_MACHINE\ HostN		
	Win81V6 HKEY_LOCAL_MACHINE\ PortNu		
	Win81V6 HKEY_LOCAL_MACHINE\ Timeo		
		Print Timeout 90000	
	Open this tab to edit registry va	llues on the "Appl	ication Server".
	Y Setting V	ariable	
	Name: NE\SOFTWARE\Siemens\B.Dat	a\Kernel\TaskWatch\FTP Im	port, Directory
	Value Type: Text		
	Value		
	C:\BData\GUI\ftp		
		ок	Cancel
	Setting V	ariable	- <b>-</b> ×
	Name: OFTWARE\Siemens\B.Data\Exi	elReportServer, Max lines fo	or pretty tables
	Value Type: Number		
	Value		
			10000
		ок	Cancel
	The tab provides corresponding	number and text	t input fields.
	Description of the various option		
	Context	Name	Description
			· ·
	SOFTWARE\Siemens\B.Data	Autoprint Cycle	
			ing. In this cycle, the function checks
			whether to calculate or print the re-
			ports, or transfer these by email in
			automatic mode.
		FileName	
	SOFTWARE\Siemens\B.Data\	FileName	File name (including the path) for
	Error Reporter		error reporting on the application
			server.
	SOFTWARE\Siemens\B.Data\	Trace level	Depth of detail for error reporting.
			Range of values from 0 to 5.
	Error Reporter		-
			0: maximum detail depth.

Tab	Functions	Functions				
	SOFTWARE\Siemens\B.Data\ Error Reporter	Trace On Off Info	Description of the Trace Level value 0: error reporting is enabled. Maxi- mum scope of error information. 1: error reporting is enabled.			
	SOFTWARE\Siemens\B.Data\ ExcelReportClient	HostName	5: error reporting is disabled Host name of the PC running Ex- celReportServer.			
	SOFTWARE\Siemens\B.Data\ ExcelReportClient	PortNumber	Communication port of the ExcelRe- portServer.			
	SOFTWARE\Siemens\B.Data\ ExcelReportClient	Timeout	Timeout in milliseconds for communi- cation with the ExcelReportServer.			
	SOFTWARE\Siemens\B.Data\ ExcelReportServer	Excel Print Timeout	Wait state interval between two print jobs, initiated upon print job problems.			
Appl. "Application Server" (continued)	SOFTWARE\Siemens\B.Data\ ExcelReportServer	Kill Excel	Activation of Excel killer: If = 0: disabled. If = 1: enabled.			
	SOFTWARE\Siemens\B.Data\ ExcelReportServer	Max. lines for pretty tables	Limits the number of lines for Ex- celReportServer at which the color coding of values is disabled automati- cally (due to their value status).			
	SOFTWARE\Siemens\B.Data\ ExcelReportServer	PortNumber	Port used to communicate with the ExcelReportServer.			
	SOFTWARE\Siemens\B.Data\ ExcelReportServer	Set Cell Colors	Specifies whether to enable or disa- ble color coding of the report values based on their value status. 0: disabled.			
			1: enabled.			
	SOFTWARE\Siemens\B.Data\ ExcelReportServer	Show Model	Specifies whether to enable or disa- ble the display of a selected report model in the report header data.			
			0: Inactive 1: Active			
	SOFTWARE\Siemens\B.Data\ Kernel	Startup Delay	Waiting time in milliseconds at the kernel start before the start of pro- gram execution of the kernel.			
	SOFTWARE\Siemens\B.Data\ Mail	Mail Text	Mail text template for automatic emailing			
	SOFTWARE\Siemens\B.Data\ Mail	my email address	Sender address that B.Data enters for automatic transmission.			
	SOFTWARE\Siemens\B.Data\ Mail	SMTP server	SMTP Server for automatic transmis- sion of emails.			

Tab	Functions	i		
		RE\Siemens\B.Data\	TimestampsAlignLeft	Defines whether to display a valid range instead of time stamps for matrix value input.
				If = 0: disabled; "time stamp", e.g.:
				"01.10.2010 03:00:00"
				If = 1: enabled; "valid range", e.g.:
				"01.10.2010 02:00:00 -
				01.10.2010 03:00:00"
Client	0 E	antable Teacher Manager John Ann		
	Host Con		ery Types Module Types DB App. Client	
		Y_CURRENT_USER\ ShowA		
			DataErrorDetails 0 ReportCalculationStatusDialog 0	
			lodeldInDialog 0	
	Win81V6 HKE	Y_LOCAL_MACHINE\ UseQu	ickFilter 1	
	Use this ta	ab to edit registry val	ues on the "Client PC".	
	¥	Setting V	ariahla – 🗆 🗙	
		-		
	Name:		a\DocLiber\PortalConnection, PortalName	
	Value Type:	Text		]
	Value			
	BDataRem	otingPortal.rem		
			OK Cancel	
	¥	Setting V	ariable – 🗆 🗙	
		-		
	Name:		s\B.Data\DocLiber\PortalConnection, Port	
	Value Type:	Number		1
	Value			
			4444	
			OK Cancel	
			n mumber and to stime to the	
	-	-	g number and text input fie	IOS.
		on of the various optic		Description
	Context		Name	Description
	SOFTWA DocLiber\	RE\Siemens\B.Data\ Logging	EnableOutputFlags	Concerns logging: Output flags that will be set.
	SOFTWAI DocLiber\l	RE\Siemens\B.Data\ Logging	Log- Files_DeleteLogsOlder ThanDays	Concerns logging: Maximum time in days of log file availability.

Tab	Functions		
	SOFTWARE\Siemens\B.Data\ DocLiber\Logging	LogFiles_RootPath	Concerns logging: root directory for log files.
	SOFTWARE\Siemens\B.Data\ DocLiber\Logging	Log- Files_UntouchableFree DiscSpaceInMb	Concerns logging: minimum available hard disk space that is not affected by logging actions in log files.
	SOFTWARE\Siemens\B.Data\ DocLiber\Logging	SendTraceOut- put2LogFiles	Concerns logging: enable output to log files.
			If = 0: disabled.
			If = 1: enabled.
	SOFTWARE\Siemens\B.Data\ DocLiber\Logging	SendTraceOut- put2TraceToolViewer	Concerns logging: enable output to TraceToolView.
			If = 0: disabled.
			If = 1: enabled.
			This option requires an installation of TraceToolViewer that is independent on B.Data.
Client (continued)	SOFTWARE\Siemens\B.Data\ DocLiber\Logging	SuppressOutputFlags	Concerns logging: output flags that will be cleared.
	SOFTWARE\Siemens\B.Data\	Host	Host name of the Portal computer.
	DocLiber\PortalConnection		<b>Caution</b> : Do not modify this value unless you know exactly what your are doing.
	SOFTWARE\Siemens\B.Data\ DocLiber\PortalConnection	Port	Port for use by the Portal for client connections.
			default is 4444.
			<b>Caution</b> : Do not modify this value unless you know exactly what your are doing.
	SOFTWARE\Siemens\B.Data\	PortalName	Portal name.
	DocLiber\PortalConnection		Default is "BDataRemotingPor- tal.rem".
			<b>Caution</b> : Do not modify this value unless you know exactly what your are doing.
	SOFTWARE\Siemens\B.Data\ ExcelReportClient	HostName	Host name of the PC running Ex- celReportServer.
	SOFTWARE\Siemens\B.Data\ ExcelReportClient	PortNumber	Communication port of the ExcelRe- portServer.
	SOFTWARE\Siemens\B.Data\ ExcelReportClient	Timeout	Timeout in milliseconds for communi- cation with the ExcelReportServer.
	SOFTWARE\Siemens\B.Data\ Matrix	TimestampsAlignLeft	Defines whether to display a valid range instead of time stamps for matrix value input.
			0: disabled; "time stamp", e.g.: "01.10.2010 03:00:00"
			1: enabled; "valid range", e.g.: "01.10.2010 02:00:00 - 01.10.2010 03:00:00"

10.4 B.Data options

# Access

To open "B.Data Options", click the "B.Data Options" button in the menu bar under "File".



# 10.5 B.Data Configuration

The "B.Data Configuration" dialog can be used to edit the connection settings of the B.Data Portal.

On completion of B.Data Setup, enter the connection settings once at the beginning of the startup process using the main menu: "File > B.Data Configuration".

SIEM	ENS		
File	Acquisition	Processing	Analysis
<u>   </u> <u>S</u> av	/e	🕛 ment Im	port and Export
🍸 Op	tions		
📑 Co	nfiguration		
Lic	ense Managem	ent	
🛐 Ch	ange Password		
	gout		
<b>(</b> ) Exi	t		

The "B.Data Configuration" dialog cautions you that modified connection settings may have a negative impact on B.Data system functionality. Be careful when making changes!

<b>ji</b>		B.Data	Config	juration		×
Take care B.D. <mark>Porta</mark>		anging your B.Data co	nfigurat	ion.		
Port:			4444	Restart		
				<ul> <li>Encrypt</li> </ul>		
B.D.4 Client						
Poπa Host	I Connect	WIN81V6		-		
Port						
Full			4444			
Us	e Proxy					
	Manual F	Proxy Configuration				
Pr	оху					
Po	ort		80			
	Use Spe	cificUser Credentials				
	ername					
Pa	assword					
				OK	Cancel	

10.5 B.Data Configuration

You can edit the connection settings for the components that have been installed in the corresponding group settings.

Table 10-2 B.Data Configuration

Option	Description			
Portal	Port number at which the B.Data Portal listens.			
	The currently set port is displayed; default is "4444".			
	Select the "Restart" option to restart the Portal service with "OK".			
	Both options are active once only and are disabled again at the next startup.			
Client	Portal connection:			
	"Computer": Name of the PC/server on which the Portal is running.			
	"Port": Number of the port of the PC/server port on which the Portal is listening.			
	Portal Connection			
	Portals Found: WIN81V6:4444 (DB = BDATA)			
	Host: WIN81V6			
	Port: 4444			
	OK Cancel			
	Computer Browser			
	Filter			
	Search: VVIN81V6			
	Start			
	Stop			
	Selection: WIN81V6			
	OK Cancel			
	"Use proxy": Activates use of a proxy server, through which communication with the portal is established.			
	"Manual proxy configuration": Activates configuration of a proxy server. Enter its URL and the port. If you do not activate this option, the proxy server that is configured in the operating system will be used.			
	"Use specific user login information": Activates entry of login data for the proxy server.			

You are always prompted to confirm your changes to connection settings. Your changes will be discarded of you click "No".

# 10.6 Service Cockpit

# 10.6.1 Service Cockpit basics

### Definition

The Service Cockpit provides you with an overview of the status of the acquisition components that are configured in the system.

### Usage

You can also use the Service Cockpit for the following purposes:

- To obtain an overview of all configured acquisition components.
- To view the log files that log all actions of an acquisition component.
- To determine the status of an acquisition component. To show whether the acquisition component is acquiring data, or whether an error has occurred.
- To control an acquisition component: You can restart the acquisition component if its fails to run.

10.6 Service Cockpit

# Layout

## The Service Cockpit has the following layout:

4	Service Cockpit			- 🗆 ×
System     System     Second Sec		ocal Time: 1	0.03.201417:01:36 7:01:36/17:01:36	Refresh Restart
- 🖪 a_acq_wincc_PCS7	Path	Size (KB)	Changed At 🛛 🔻	Open
- 🗖 a_acq_SAT_drv	bfsNT.ini	4	10.03.2014 15:35	
a_erf_OLEDB_drv	process.cfg	1	07.03.2014 15:01	
- 🖪 a_erf_ModBus	modbus\ioarea.bt	1	07.03.2014 15:01	
- B a_acq_OPC_HDA	r modbus\tags.bt	0	07.03.2014 15:01	
- 🗖 a_acq_S7	drv_WinCC_Driver\dblog1.mcl	1	07.03.2014 15:01	
a_erf_WinCC_Driver	drv_WinCC_Driver\dblog2.mcl	4	07.03.2014 15:01	
	drv_WinCC_Driver\170118.mcl	1	07.03.2014 15:01	
	drv_WinCC_Driver\170088.mcl	1	07.03.2014 15:01	
	drv_WinCC_Driver\tags.txt	2	07.03.2014 15:01	
	drv_WinCC_Driver\ioarea.bt	0	07.03.2014 15:01	
	ftp\upload\io_BDATA\imported\20100627_0000	4	24.02.2014 20:06	
			Γ	Close

① The left window pane lists the acquisition components that are configured in the system.

2 The right window pane displays information about the acquisition component or interface selected in ①:

- Name and version of the acquisition component
- Time of last communication between the acquisition component and the B.Data client
- Configuration files
- Log files
- Gap detection during data acquisition

You can also perform a software update of the acquisition component here.

# Status color code

The following status color code is valid in the Service Cockpit:

- Green: The acquisition component is acquiring data.
- Red: The acquisition component is interconnected with the system, but is not acquiring data.
- Gray: The acquisition component is not interconnected with the system.

# 10.6.2 Using the Service Cockpit

## Overview

You use the Service Cockpit to manage the available acquisition components and the drivers installed on them.

# Requirement

For the software update of the acquisition component:

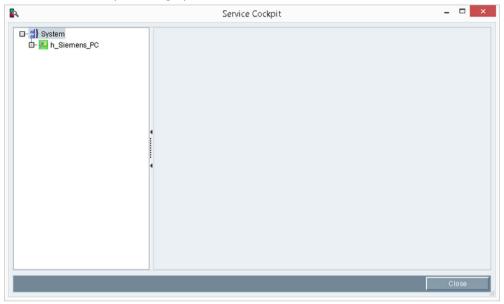
- The acquisition component is installed on the PC.
- The PC is connected to the B.Data server.

10.6 Service Cockpit

# Starting the Service Cockpit

1. Click the "Open Service Cockpit" button in the menu bar under "Administration > Management and Monitoring" to open the Service Cockpit .

The "Service Cockpit" dialog opens.



2. Select the acquisition component.

All information about the acquisition component is displayed. If the time information of "Acq/Local Time" deviates by more than five seconds from each other, the time is shown in red.

System     System     Set a same set of the set of		t Contact: 10.03.2014 17:09:29 cal Time: 17:09:29/17:09:29	Refresh Restart
<ul> <li>a.acq_ASCII_FTP</li> <li>a.acq_wincc_PCS7</li> <li>a.acq_SAT_drv</li> <li>a.erf_OLED8_drv</li> <li>a.erf_ModBus</li> <li>a.acq_OPC_HDA</li> <li>a.acq_SPC_HDA</li> <li>a.acq_SPC_HDA</li> <li>a.acq_SPC_HDA</li> </ul>	Path         bfsNT.ini         process.cfg         modbustioarea.bd         modbustlags.bt         drv_WinCC_Driver/dblog1.mcl         drv_WinCC_Driver/dblog2.mcl         drv_WinCC_Driver/17018.mcl         drv_WinCC_Driver/170088.mcl         drv_WinCC_Driver/170088.mcl         drv_WinCC_Driver/170088.mcl         drv_WinCC_Driver/170088.mcl	Size (KB)         Changed At         7           4         10.03.2014 17.01         1           1         07.03.2014 15.01         0           0         07.03.2014 15.01         1           0         07.03.2014 15.01         1           0         07.03.2014 15.01         1           1         07.03.2014 15.01         1           1         07.03.2014 15.01         1           1         07.03.2014 15.01         1           2         07.03.2014 15.01         2           4         07.03.2014 15.01         4           2         07.03.2014 15.01         4           4         24.02.2014 20:06         5	Open

3. Click the "Update" button to manually update the information about the acquisition component.

The information in the Service Cockpit is refreshed automatically at intervals of ten seconds.

- 4. To restart the acquisition component, click the "Restart" button.
- 5. To deactivate the acquisition component, activate the "Disabled" option.

## Managing log files

1. Select the "Log Files" tab to view the log files.

All log files of the selected acquisition component are displayed.

<b>X</b>	Service Cockpit	
System     System     System     Siemens_PC     R a_acq_PPC     R a_acq_simulation     R a_acq_ASCII_FTP	Name:         h_Siemens_PC         Last Contact:         10.03.201417:10:22           Version:         600.0.703.2         Acq/Local Time:         17:10:22/17:10:22           ✓ Active         Config Files         Log Files         Installed Software         Update	Refresh Restart
a acq_wincc_PCS7     a_acq_SAT_drv     a_erf_OLEDB_drv     a_erf_ModBus     fa_acq_OPC_HDA     a_acq_S7     a_erf_WinCC_Driver	Path         Size [KB]         Changed At         7           tracelRepotServerlRepotServer_2014.03.0         1         01.03.2014 09:30         1           tracelRepotServerlRepotServer_2014.03.0         1         01.03.2014 09:28         1          1         01.03.2014 09:28           tracelRepotServerlRepotServer_2014.03.0         1         01.03.2014 09:23         1         1         01.03.2014 09:23           tracelRepotServerlRepotServer_2014.03.0         1         01.03.2014 09:23         1         1         01.03.2014 09:23           tracelRepotServerlRepotServer_2014.03.0         1         01.03.2014 09:23         1         1         01.03.2014 09:24         1           tracelRepotServerlRepotServer_2014.03.0         1         01.03.2014 09:24         1         1         01.03.2014 09:24         1         1         1         01.03.2014 09:19	Open Delete
	traceVFTPttp0001.log 1 01.03.2014 09:18 👻	Close

2. You can open a log file with double-click.

Alternatively, you can click the "Open" button to open a log file.

The log file is opened in an editor.

	ReportServer_2014.03.05_141508.0.log - Notepad	- 🗆 ×
File Edit Format View Help		
2014-03-05 14:15:08,564 [11] - INFO [] [] 2014-03-05 14:15:38,576 [11] - INFO [] []	<pre>[] [] [] ReportServer - Automatic processing - 0 open automati [] [] [] [] ReportServer - Automatic processing - 0 unprinted rep [] [] [] [] ReportServer - Automatic processing - 0 open automati [] [] [] [] ReportServer - Automatic processing - 0 unprinted rep</pre>	orts found c reports found

3. You can select a log file and then delete it by clicking the "Delete" button.

### **Display installed software**

1. Click the "Software" tab to display the software installed on the acquisition component.

10.6 Service Cockpit

# Performing a software update

### Note

Note that the software update of the acquisition component is only possible if the acquisition component and the B.Data server are installed on different PCs.

- 1. To perform a software update of the acquisition component, select the "Update" tab.
- 2. Select the required file "Setup.exe" with the "..." button and confirm your selection.

R	Service Cockpit	- 🗆 ×
System  System System System  System System System System System System System System System System System System System System System System System System System Sy	Name:       h_Siemens_PC       Last Contact:       10.03.2014 17:12:24         Version:       600.0.703.2       Acq/Local Time:       17:12:24/17:12:24         Variation       Config Files       Installed Software       Update         Path:       C:/BData\Setup.EXE         Transfer       Execute	Refresh Restart
		Close

- 3. Click the "Transfer" button to transfer the selected file to the system.
- 4. Then click the "Run" button.

The software update of the acquisition component is performed.

# Managing interfaces

1. Select the required interface in the right-hand window area.

The information about the interface is displayed, for example, gaps in the data acquisition or configuration files of the acquisition component.

<b>R</b>	Service Cockpit			- 🗆 ×
System     System     Setems_PC     Ga_acq_OPC     Ga_acq_simulation	Name: a_erf_ModBus	Last Contact:	1	Refresh Restart
Image: a acq_ASCIL_FTP         Image: a acq_ASCIL_FTP         Image: a acq_SAT_drv         Image: a acr_WinCC_Driver	Energy Box Configuration Files	Description		EventTime 7 Acknowledge
	Path	Size (KB)	Changed At 7	Open
	bfsNT.ini	4	10.03.2014 17:01	
	process.cfg	1	07.03.2014 15:01	
	modbus\ioarea.txt	1	07.03.2014 15:01	
	modbus\tags.txt	0	07.03.2014 15:01	
				01
				Close

- 2. If there are gaps in the data acquisition, you can acknowledge these if required.
- 3. To open a configuration file of the acquisition component, select the required file and click the "Open" button.

The file is displayed in an editor.

	bfsNT.ini - Notepad 🛛 🗖 🗖	×	
Fi	e Edit Format View Help		
; na ; st ; Wa Wa Ad	DPCDriverSource581] identifier of the OPC-Server according to the registry ame=Matrikon.OPC.Simulation access method 0=synchronous 1=asynchronous cate=0 WatchDog variable, WatchDog interval in ms and WatchDog On/Off atchDog_01=Warte.E43302_BAW4 atchDogIntervall=60000 tive=0 Should a log file be written, be careful - low performance! Off/On = 0/1		*
Ċr Lo ;	reateLog=0 ogFile=C:\Program Files\BData\GUI\mcl\OPCLog\OPC_581.log INI-File with the actual OPC-configuration PCIniFile=C:\Program Files\BData\GUI\mcl\OPCLog\~BDataOPC_581.ini		
	DPCLogTags] which datapoints will be logged if CreateLog=1 (valid for all drivers) Fag_01=Kessel_01.Tag_0002 Fag_03=Kessel_01.Tag_1002 Fag_04=Kessel_01.Tag_1502 Fag_05=Kessel_01.Tag_2002 Fag_06=Warte.E43302_BAWA MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM		
ار ۲		>	Υ.

10.7 Task Management

# 10.7 Task Management

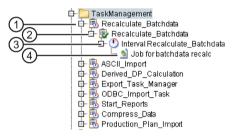
# 10.7.1 Creating objects for Task Management

### Overview

B.Data Task Management is used to perform different actions, e.g. starting reports, importing / exporting data, or initiating calculations.

Configure Task Management in the Plant Explorer. The task also has to be set up on the application server, as tasks are executed by means of the Microsoft Scheduler. You may start a configured task manually from any client.

The system provides a number of predefined tasks. The following section describes the general structure of Task Management.



- ① Task Manager serves as grouping object and to define the hardware that is to run a task.
- 2 The task object contains information on the function to be executed and the schedule.
- 3 The interval definition becomes necessary as soon as a time frame that is relative to the current time has to be defined.
- Objects required for the task.

#### Note

The task is used to execute a \*.cmd file that is stored in the "CMD" section of the B.Data installation folder on the application server. For this reason, the task schedule needs to be created on the application server. The user running the task must have corresponding Administrator privileges.

This section provides instructions related to the following actions:

- Creating the Task Manager.
- Creating tasks
- Creating interval definitions
- Existing tasks

### Requirement

Successful installation of all software components.

### Creating the Task Manager

1. Select the folder under which the Task Manager is going to be created. Save all tasks to this folder to avoid the creation of different tasks with the same content.

🖕 🛅 Configuration
🛱 🛅 TaskManagement
🛱 🔂 Export_Task_Manager
🖨 🔂 Database_Export
🖻 🕛 Database_Export_Task
🔄 🚊 🖄 CC 1239099 - CC 1239100
📋 🖶 🔂 ODBC_Import_Task
📋 🖶 🔜 ASCII_Import

2. Click the "Insert Task Manager" button in the menu bar under "Administration > Task Management".

The "Task Manager" dialog opens.

👌 Task M	anager - Export_Task_Manager 🛛 🗖 🗖	×
Name:	Export_Task_Manager	
Description:	Export Task Manager	^
		~
Hardware:	h_Siemens_PC	-
-	OK Cancel	
<u>-</u>	Cancer	

- 3. Enter a user "name" and an optional "description".
- 4. Select the PC on which Task Manager is to be set up from the "Hardware" list box.
- 5. Save the configuration with "OK".

10.7 Task Management

### Creating the task

1. Click "Insert Task" in the menu bar under "Administration > Task Management".

The "Task"	dialog	opens.
------------	--------	--------

	Task - Database_Export – 🗖	×
	ise_Export	
Description: Databa	ase Export	Ŷ
Command Line:	Data Export archive.cmd Manage	
Schedule: Schedule Run As		^
Start		
		~
	☐ Run only iflogged on ✔ Enabled (ScheduledTask runs at specified time.)	
9	OK Cancel	

- 2. Enter the task "name" and an optional "description". The name may not contain special characters.
- 3. Select the function that the task has to execute from the "Command Line:" list box.

#### Note

After having changed or updated the command line contents (\*.CMD file), you must enter your login information once again.

- 4. If you want to store a schedule that determines the start of the task, proceed as follows:
  - Click "Schedule".
  - Enter your "User name" and "Password" in the "Task Logon" dialog. Click "OK".

The Microsoft Scheduler opens.

- Configure the task and then close the input dialog with "OK". For more information on Microsoft Scheduler, refer to the Microsoft Windows online help.
- 5. Save the configuration with "OK".

### Creating the interval definition

- 1. Click the "Insert Interval Definition" button in the menu bar under "Administration > Task Management".
  - The "Export Task" dialog opens.

•	Export Task - [	Database_Export_T	ask – 🗆 🗙
	Database_Export_Task  Database Export Task		^ ∧ ↓
Interval back: Duration: Offset O Hours	0 1 0 Day Minutes Second 0 : 0 :	Month  Month  S	<ul> <li>✓ One file only</li> <li>Remove after export</li> <li>Target Filename:</li> <li>export</li> <li>Compression Level:</li> <li>Entry values</li> <li>✓</li> </ul>
9		ОК	Cancel

- 2. Enter a "Name" and an optional "Description" for the interval definition.
- 3. Define the time window in the "Interval back:", "Duration:", and "Offset:" fields. The time window contents are always relative to the current time.
- 4. To export all data points to a single file, select the "One file only" check box and enter the "Target Filename". However, be aware of the fact that the size of the import file is limited to 5000 lines.

A separate file is generated for each data point if this option is not activated.

5. Select the "Remove after export" check box to delete the files from the database on completion of the export.

10.7 Task Management

- 6. Click "Start" to export only selected data points.
  - Select the data points to export and then click "Start selected".

•	Choose measurements for export	-		×
	se_Export_Task DP1_Access DP1_Access2			
	Start Selected			_
		Ca	ancel	

7. Save the configuration with "OK".

#### Example

Example: Configuration of the example above Let us assume that the task is going to be launched on January 17, 2008 at 13:57 Truncate with "Month" 01/01/2008 00:00 Interval back (6) 07/01/2007 00:00 Offset (no offset) 07/01/2007 00:00 Duration (1 day) 07/01/2007 00:00 - 07/02/2007 00:00 The interval from 07/01/07 00:00 to 07/02/07 00:00 is now defined in the example.

### See also

Functions for Task Management (Page 612)

## 10.8 Countries

### 10.8.1 Basics of "Country" object type

With the "Country" object, you can map a country, a region or a federal state, for example. You can structure objects of the type "Country" hierarchically and in this way map countries with their federal states, for example:



This option is required if, for example, the individual federal states of a country have different public holidays or different time zones. Accordingly, you can store the following country-specific information in the "Country" object:

- Holidays
- Time zone

### "Holidays" application

The information about holidays is required when working with objects of the "Profile" type. Here you can define the use of a typical holiday.

You can enter the holidays manually in the "Country" object or import them from a "\*.HOL" type file, e.g. from Microsoft Outlook.

#### "Time zone" application

The information about time zones is required if, for example, a company has its locations in various countries with different time zones.

The data is acquired in the local time of the time zone. The information of the acquisition time zone is not used until evaluation for correct calculation of the data.

### Recommendation for the structure in Plant Explorer

You can also use the object "Country" to organize the structure effectively in the project tree of Plant Explorer. If, for example, you have created a report for a specific country, attach the report below the country. This provides you with an overview of the existing reports and the corresponding countries.



10.8 Countries

## 10.8.2 Creating a "Country" object

### Overview

The following countries and their holidays are already defined in B.Data:

- Germany
- Austria
- Spain, Catalonia

### Creating a country

 Click the "Open Countries" button in the menu bar under "Administration > Geography". The "Geography Objects" dialog opens.

(	)	Geographical Objects	- 🗆 ×
	Austria	Description Austria	New
	Germany Spain Catalonia	Germany Spain Catalonia	Delete
			Close

- 2. To edit or delete an existing country, click the corresponding button.
- 3. Click the "New" button to create a new country.

The "Countries" dialog opens.

- 4. Enter a name and an optional description for the country.
- 5. Select the corresponding country code if necessary.
- 6. Select the corresponding time zone.

7. Select the required language for reports.

English and German are supported.

4	9	Lá	inder		-		×
	Name:	Ukraine					
	Description:						
	Country Code:	uk-UA	×				
	Time Zone:	(UTC+02:00) Helsinki, Kyiv, Riga, Sofia	, Tallinn, Vilnius 💌				
	Report-Language:	de, Deutsch	•				
		Holiday Settings					
	9		ОК	Apply	Ca	incel	

 To edit holidays for the country created, click the "Holidays" button. The dialog for editing holidays opens.

### **Editing holidays**

1. Click "New" to create a new holiday.

The "Holiday" dialog opens.

- 2. Enter a name and an optional description for the holiday.
- 3. Select the corresponding date.

Click "Every year" if the holiday is at the same date every year.

10.8 Countries

4. Confirm your entries.

#### The holiday is created.

ame: Ukraine		
escription:		
		~
Holidays		
Name	Date 🗅 🔺 New	
HeiligerAbend	06.01.2014	
HeiligerAbend	06.01.2015 Edit	
HeiligerAbend	06.01.2016 Delete	
HeiligerAbend	06.01.2017	_
Heiliger Abend	06.01.2018 Import	
HeiligerAbend	06.01.2019	
Heiliger Abend	06.01.2020	
Heiliger Abend	06.01.2021	
HeiligerAbend	06.01.2022	
HeiligerAbend	06.01.2023	
HeiligerAbend	06.01.2024	
HeiligerAbend	06.01.2025	
HeiligerAbend	06.01.2026	
HeiligerAbend	06.01.2027	

5. To import holidays from a HOL file, click "Import" and select the required file, e.g. "Outlook.hol":

Outlook.hol - Notepad	×
File Edit Format View Help	
[Deutschland] 276	^
Allerheiligen,2009/11/1	
Allerheiligen,2010/11/1	
Allerheiligen,2011/11/1	
Allerheiligen,2012/11/1	
Allerheiligen,2013/11/1	
Allerheiligen,2014/11/1	
Allerheiligen,2015/11/1	
Allerheiligen,2016/11/1	
Allerheiligen,2017/11/1	
Allerheiligen,2018/11/1	
Allerheiligen,2019/11/1	
Allerheiligen,2020/11/1	
Allerheiligen,2021/11/1	
Allerheiligen,2022/11/1	
Allerheiligen,2023/11/1	
Allerheiligen,2024/11/1	
Allerheiligen,2025/11/1	
Allerheiligen,2026/11/1	
Allerheiligen,2027/11/1	
Allerheiligen,2028/11/1	
Christi Himmelfahrt,2009/5/21	
Christi Himmelfahrt,2010/5/13	
Christi Himmelfahrt,2011/6/2	$\checkmark$
< · · · · · · · · · · · · · · · · · · ·	> la

### See also

Assign time zone for acquisition or calculation (Page 405)

### 10.8.3 Assign time zone for acquisition or calculation

### Overview

You can specify the time zone of a country for the following objects:

- Report
- Hardware
- Data point

### Requirement

A country is configured with its time zone.

### Assigning time zones for reports

1. To assign the configured time zone of a country for a report, select the required country in the "Report" dialog.

The local time of the country is used in the calculation of a report.

]	Be	richt - Validati	on				×
Name: Valida	ation						
Description:							1
🎱 Display Type							
Text Type: Name		Country:	Ukraine				•
Query Types							
		Comp. Level				New	
Month		Entry values				Edit	_
							_
						Delete	
-							
Modules [\Para	-	<b>T</b>					
Name	Туре	Times	pan		F.	New	
Name gaps	Type Validation gap	Off	span	N	N	New Edit	
Name gaps State_not_ok	Type Validation gap Validation status not ok	Off Off	span	N N	N N	Edit	
Name gaps	Type Validation gap	Off	span	N N N	N		
Name gaps State_not_ok min_max	Type Validation gap Validation status not ok Validation Min Max	Off Off Off Off	span	N N N	N N N	Edit	
Name gaps State_not_ok min_max max_rise	Type Validation gap Validation status not ok Validation Min Max Validation max, increase	Off Off Off Off	span	N N N	N N N	Edit Delete	
Name gaps State_not_ok min_max max_rise	Type Validation gap Validation status not ok Validation Min Max Validation max, increase	Off Off Off Off	span	N N N	N N N	Edit Delete	
Name gaps State_not_ok min_max max_rise	Type Validation gap Validation status not ok Validation Min Max Validation max, increase	Off Off Off Off	span	N N N	N N N	Edit Delete	
Name gaps State_not_ok min_max max_rise	Type Validation gap Validation status not ok Validation Min Max Validation max, increase	Off Off Off Off	span	N N N	N N N	Edit Delete	
Name gaps State_not_ok min_max max_rise	Type Validation gap Validation status not ok Validation Min Max Validation max. increase Validation deviation refere	Off Off Off Off	span	N N N	N N N	Edit Delete	
Name gaps State_not_ok min_max max_rise ref_DP	Type Validation gap Validation status not ok Validation Min Max Validation max. increase Validation deviation refere	Off Off Off Off	span	N N N	N N N	Edit Delete	
Name gaps State_not_ok min_max max_rise ref_DP	Type Validation gap Validation status not ok Validation Min Max Validation max, increase Validation deviation refer	Off Off Off off ence dp Off	span	N N N	N N N	Edit Delete	

10.8 Countries

2. Alternatively, you can change the set time zone in the "Start Report" dialog.

3		Start Report			-		×
Module	Parameter					_	^
saps	Query Type: Month	1	То			•	
💩 max_rise	01.03.201	4 00:00:00 💌	01	.04.2014 00:00:00 [	-		
light ref_DP	Advanced Paramete	r				¥	
🐉 State_not_ok	Version Current 10.0	3.2014 16:50:22 💌	Model Currer	nt	-		
	Compression Level:	Entry values				•	
	Batches:				<b>^</b>		
	Keep:	<b>.</b>					
	Country:	Ukraine				•	
							~
Cancel		1	Back	Next	Sta	rt	

### Assigning time zones for hardware configuration

1. To assign the configured time zone for an acquisition, activate the "Select location for this specific channel" option in the wizard in the "Define Channel Name" dialog, and select the required country.

۶	Modbus (Modbus_IO_BUFFER_15min) - Define channel Name	×
Enter name for communication ch Modbus_IO_BUFFER_15min	annet	
Use default location from acqui     Select location for this specific o     Ukraine		
Initial State:		
	Step 1 out of 6 Ca	incel

The time stamp is corrected to the specified time zone.

```
Administration
```

10.8 Countries

### Assigning time zones for data points

1. To assign the configured time zone for data points, select the required country in the "Data Point" dialog.

	Datenpunkt - e_Gas_consumption - 🗆	×
Name: e_Gas_consumption Description:		<u> </u>
Inventory N#: NO_KKS	Ident. Token:	
Process: a_acq_simulation	Creation Date: 02.09.2008 13:14:46	
Unit: k/Vh		•
Input Unit: 🗌 🔣	Kernel Valid until: 02.09.2008 13:14:46	•
Function: Measurement	Priority High Last changed by: ADMIN	
Versionizing: No 🗸	Replacement NO Replace Invalid	ds
Cycle Time: 1 month	Calculation Window. 1 Unit 15 min	•
Country: Ukraine •	Corrected until: 202.09.2008 13:14:46	
Type:	'	
Generic Name	Value	
O Datapoint		
Constant Derived		
Details	Counter Plausibility Compression Export	
-	OK Cancel	

### See also

Creating a report (Page 193)

Generating reports (Page 215)

Creating generic data point (Page 129)

Creating data points (Page 132)

Creating constants (Page 135)

Creating derived data points (Page 138)

Acquisition wizard for interface configuration (Page 55)

### 10.9.1 Basic principles of export and import

#### Overview

You can export your configuration data in XML format in B.Data and import them again. Use the "Import / Export" option, for example, to back up your configuration data.

#### Conflict test during import

The objects to be imported are compared with the objects in B.Data based on name and type during import. If an object already exists, you are prompted to make a selection: You can either keep the object or overwrite it.

#### Note

#### You cannot undo the data import

Overwriting of objects during import can result in inconsistent data or evaluation errors due to changed values.

Prepare the import process carefully. Check if there are conflicts with existing data prior to the import. Note the following recommendations:

- Divide a comprehensive data export into several steps.
- If possible, export only data you have created yourself.

### 10.9.2 Exporting data

#### **Export options**

You can export the following structures from B.Data:

• Complete folder structure

The selected object is exported with all child objects.

Single object

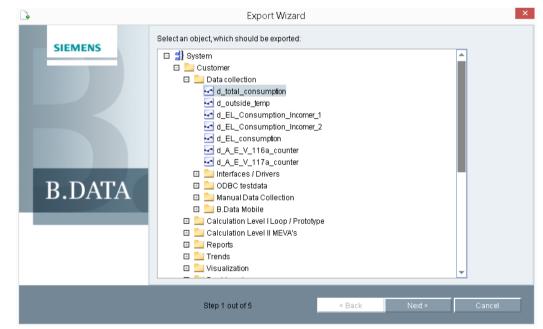
Only the selected object is exported. Child objects are not exported.

#### Note

Objects with an ID of less than 5000 are master data of B.Data. If this data is included in the export, the existing master data is updated during the import.

#### Procedure

- Click the "Export" button in the menu bar under "Administration > Import and Export". The "Export Wizard" dialog opens.
- 2. Select the object you want to export.



3. Select the required export option.

4. Select the directory in which the export files are to be stored.

The data is exported from B.Data. Two files are created during the export:

- "Nodes.xml" with the exported data
- "logdoc.txt" with detailed information on the export
- 5. Click "Finish".

#### Result

The data export is complete.

### 10.9.3 Importing data

#### Import options

You can import the following structures from B.Data:

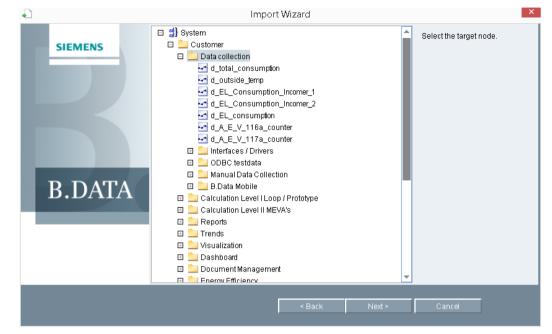
- Complete folder structure that is saved in the XML file.
- Complete folder structure of the selected object
- Single object

### Requirement

The export data is stored in the file system.

### Procedure

- Click the "Import" button in the menu bar under "Administration > Import and Export". The "Import Wizard" dialog opens.
- 2. Enter the folder in which the XML file you wish to import is located.
- 3. Select the required import option.



4. Select the folder in which the import data is to be stored.

The import process is started. The objects to be imported are compared with the existing objects in B.Data. If objects with identical names and types already exist in B.Data, you are prompted to make a selection for each object:

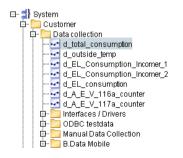
- Select for each object if the existing object is to be overwritten or kept.

The import is executed once this conflict check is complete.

5. To close the wizard, click "Exit".

#### Result

The import data is stored in the specified folder in Plant Explorer.



### Administration

10.9 Exporting and importing data

# Using B.Data Web

### 11.1 Basics

### 11.1.1 Basic information on B.Data Web

#### **Overview**

B.Data Web is a browser-based user interface for the SIMATIC B.Data energy management system. B.Data Web is used to access B.Data via the Internet/Intranet.

The administrator configures the data you may access in B.Data .

#### Note

#### Installation of B.Data Web

You can find information on the installation of B.Data Web in the installation manual "B.Data V6.0 - Installation", section "Setting up B.Data Web ".

#### Login and logout

In order to work with B.Data Web, you need a user name, a password associated with it, and rights to the data that you want to view.

For security reasons, a user is automatically logged out after a period of inactivity. The duration of inactivity is configurable.

Using B.Data Web

11.1 Basics

### User interface of B.Data Web

SIEMENS ? a Report: Plant Performance - Month + add Quicklinl Intranet Viewer . Options Plant Performance - from: 2014.11.01 till: 2014.12.01 created: 2014.11.05 10:39:34 11/5/2014 ▼ Report Web Query Type: AM Month v Plant Performance - from: 2014.11.01 till: 2014.12.01 created: 2014.11.05 11/5/2014 10:39:16 Start Report Plant Performance - from: 2011.01.01 till: 2011.02.01 created: 2013.05.07 15:21:56 Parameter - Common 5/7/2013 . Fron **6** Nov 2014 Mo Tu We Th Fr Sa Su 4 5 6 3 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 Advanced Properties 2 (1)3

The following figure shows the user interface of B.Data Web:

### 1 Navigation area

In the navigation area, select the objects you want to view or edit. Use the menu or Quicklinks to navigate. The navigation options available depend on your user rights.

#### 2 Detail area

In the detail area, objects such as reports or trends are displayed. Which objects are displayed depends on the selection in 1 and the query type that is selected in 3.

#### ③ "Options" tab

Use the "Options" tab to select the query type and time range for objects such as reports or trends. The content of this tab depends on the object type that is selected in ①. By default, query type and time range are available. In addition, the generation of trends or reports can be initiated on this tab.

If you do not need this tab, hide it.

### Tasks in B.Data Web

Use B.Data Web to handle the following tasks:

- Viewing reports and generating new reports
- Viewing trends and generating new trends
- Viewing visualizations
- Editing values in matrices
- Opening documents and uploading new documents in B.Data
- Viewing and editing energy efficiency measures
- Viewing dashboards

#### See also

Configuring authorizations (Page 93) Working with reports in B.Data Web (Page 422) Working with trends in B.Data Web (Page 427) Working with visualizations in B.Data Web (Page 430) Working with matrixes in B.Data Web (Page 433) Using document management in B.Data Web (Page 436) Working with energy efficiency measures in B.Data Web (Page 438) Working with dashboards in B.Data Web (Page 440) 11.1 Basics

### 11.1.2 Navigation in B.Data Web

### Navigation via the menu

All objects enabled for B.Data Web are arranged according to the breadcrumb path method in the "Menu" area.

The resulting figure shows the navigation principle in the menu:

SIEMENS			B.DATA V	VEB		
🟠 🕇 🕄 🕤 Menu	SIEMENS				B.DATA WEB	}
✓ Intranet Viewer	<u> </u>			User	Admin <u>Logout</u>	<u>t</u>
- Report Web	2	Report: Validation - Month			🛨 add Quicklink	
Validation	✓ Intranet Viewer	Report	Created	add Quicklink	Open	Options
	✓ Report Web	Validation - from: 2011.05.01 till: 2011.06.01 created: 2013.05.08 12:29:44	5/8/2013 12:29:49 PM	Ŧ	PDF EXCEL	රී
KPI Batch Productio	Melidation					
Energy Overview						
Accounting						
Contract Analysis						
Carbon Emission						
Degree Days						
Plant Performance						
Quicklinks						
	Quicklinks					

(1) When a menu command is selected, its content is displayed in the right pane (in this example "Plant Performance").

All remaining menu commands on the same level are hidden.

2 You go back to the previous display by clicking on the parent menu command (in this example "Report Web").

### Navigation via Quicklinks

Quicklinks work like bookmarks in Internet browsers. Quicklinks give you quick access to required objects. They are stored as tiles in the "Quicklinks" area.

You can specify a Quicklink as the homepage in B.Data Web. The content of the object to which the Quicklink refers is then displayed upon the next login.

Your personal Quicklink settings are stored and linked to your user account. This means that your Quicklink settings are available on other PCs.

11.1 Basics

	SIEMENS				B.D	ATA WEB	
	<u>Help</u> <u>About</u>				User: Admin	<u>Logout</u>	
	Menu		Report: KPI		٦	+ add Quicklink	
(1)	Quicklinks		▼ Month 🛨				
$\bigcirc$	Report Web 🥒 Visualization 🖋		Report	Created	add Quicklink	Open	
			KPI - from: 2011.01.01 till: 2	07/05/2013 11:23	÷	IPDF IEXCEL	
	KPI Plant Overview						
	Green Production Mon ELE Energy Flow						
3	-	)					

① Quicklinks

Design and name are copied by default from the object to which the Quicklink refers. You can edit the Quicklink by clicking the "PencilTool" icon. You can change the order of the Quicklinks using drag-and-drop.

2 Create a new Quicklink for a selected object

3 Scroll through the Quicklink list

Scroll through the Quicklink list using the "<" and ">" buttons. The points show the number of pages in the Quicklink list.

### See also

Configuring authorizations (Page 93)

Create Quicklinks (Page 446)

Edit Quicklinks (Page 449)

## 11.2 Working with B.Data Web

### 11.2.1 Logging on to the B.Data Web

### Overview

You can open the start page of B.Data Web with the following URL:

• http://<B.Data Web Server>/BDataWeb

Contact your administrator to obtain the address or name of the B.Data Web server.

B.Data Web supports secure communication with B.Data Web-Server via HTTPS. Your administrator can provide you with all information needed to use HTTPS communication.

For more information on this topic, refer to the "B.Data V6.0 - Installation" manual, section "Setting up B.Data Web".

### Procedure

1. Start an Internet-Browser and enter the appropriate URL .

The login page of B.Data Web opens.

SIEMENS	Login	
	Sign in with your username or your E-mail address.	
	User Name	
	Password	
	Remember me next time.	Login
B.DATA		
Languages en v	Change Password	Password lost

- 2. If necessary, select the language you wish to use. The following languages are available:
  - German
  - English
- 3. If you want to change your password, click "Change password".
- 4. If you want to generate a temporary password, click "Forgot password".
- 5. Type in the user name and password.

To do this, use your login information for B.Data.

- 6. Activate the "Remember user name" check box to save the login data for the next authentication.
- 7. Click "Login".

#### Result

You are now logged in to B.Data Web .

### Changing passwords

You can change your B.Data password in the login dialog. In order to change it, you need your old password or a temporary password.

#### Note

You will be separately notified via email regarding a password change. If you have received such an email, without having changed your password, this can indicate a hacked user account. Please contact your administrator in this case.

#### Forgot password

If you have forgotten your password, you can have a temporary password generated. The temporary password will be sent by email to the email address that is stored in your B.Data user account.

If you have received the email with the temporary password, click "Change password" in the login dialog.

#### See also

Basic information on B.Data Web (Page 415)

11.2 Working with B.Data Web

### 11.2.2 Working with reports in B.Data Web

### Overview

B.Data Web shows you the reports you configured in B.Data . You can also generate new reports in B.Data Web .

The structure of a report in B.Data Web consists of the following objects:

Menü		Bericht : Plant Performance			Quicklink hinzufügen
▼ Intr	anet Viewer	Bericht	Erzeugt	Quicklink hinzufügen	Öffnen
	Plant Performance	Plant Performance - from: 2014.02.01 till: 2014.03.01 created: 2014.02.25 18:31:08	25.02.2014 18:31:13	+	
		Plant Performance - from: 2011.01.01 till: 2011.02.01 created: 2013.05.07 15:21:56	07.05.2013 15:22:01	÷	PDF EXCEL
1 2 3	1 Report Report results "Options" tab	2			3

The figure below shows the "Options" tab for a report:

	Optic Query Month Start	Type: Rep		er - Co	mmc			~
1	-🖪	From:	mere	1-00	//////			
2—	-		Nov	_	-	-	v	
			2014	ł			~	
		Мо	Tu	We	Th	Fr	Sa	Su
							1	2
		3	4	5	6	7	8	9
		10	11	12	13	14	15	16
		17	18	19	20	21	22	23
		24	25	26	27	28	29	30
		Comp	rrent \ rrent I pression value	on Lev	1	pertie	S	······
			try: nany ep Re Start	port				•

- 1 In this area, depending on the time range, you configure the query type and as needed additional settings, such as the use of a different calculation model.
- ② If the report contains configurable modules, each of these modules is displayed as a separate area.

Report creation is based on the configuration for automatic reporting.

### Requirement

- The report is created in B.Data .
- The report has been released for the current Web application.
- Microsoft Excel and PDF-Reader are installed on the PC.

11.2 Working with B.Data Web

### Generating reports in B.Data Web

1. To generate the report in B.Data Web , select the desired report and then click the "Options" tab in the right window pane.

The "Options - Start report" dialog opens.

- 2. In the "Options" area, select a query type for the report.
- 3. Under "Start report General parameters", specify the time range for the report.
- 4. Click "Advanced settings" to set the additional parameters for report generation.
- 5. In order to change the starting parameters for the modules that are used, select the desired module on the left, and change the starting parameters as desired.
- 6. Click "Start".

The report is generated.

You can display or open the report.

#### Specifying additional parameters for the report (optional)

1. Click "Options" in the " Advanced Settings" dialog.

The advanced settings are displayed.

2. Disable "Current version" and select a date to define the measured value version for evaluation.

All measured values generated prior to this date are evaluated.

The current date is activated by default.

 Deactivate "Current model" and select a model date to define a calculation model for evaluation of the report.

The report is evaluated by default based on the current calculation model.

- 4. Select the compression level in a report to evaluate the compression level values.
- 5. If necessary, select the required batch under "Batches".
- 6. Under "Country", select the desired country.
- 7. You can exclude the report from cyclic delete actions by activating "Retain report" option. If you do not activate "Retain report", the delete job for evaluations will be performed later.

### Editing module start parameters (optional)

- 1. Select the tab for the desired module.
- 2. Specify the query type and time range if you have activated the "Query interval at start" option in the module configuration.
- 3. You can always edit the interval, as well as the high and low limit of configured module start parameters.

The start parameters are derived from the module configuration.

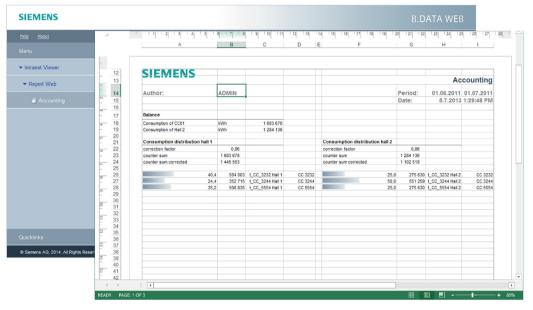
Optic Query							1
Month							
	Rep	ort					Ť
	Para From:	amete	er - Pr	otoco	ы		
<b>1</b>		Nov				~	
		2014	ł			~	
	Мо	Tu	We	Th	Fr	Sa	Su
	3	4	5	6	7	1	2
	10	4	5 12	13	14	0 15	16
	17	18	12	20	21	22	23
	24	25	26	27	28	29	30
	Interva	11:					
	1					d	¥
	Advanced Properties current Version						
	🗸 cu	irrent I	Nodel				
	Com	pressio	on Lev	el:			
	Entry values						
	Batcl	hes:					
		Start					

11.2 Working with B.Data Web

### Displaying or opening a report in B.Data Web

- 1. To display the report as a preview in PDF format in B.Data Web , click the report result. The report is displayed in the detail area.
- 2. To open the report in PDF format, click the "PDF" icon in the row with the report result. The report is displayed in Acrobat Reader .
- 3. To open the report in Microsoft Excel , click the "EXCEL" icon in the row with the report result.

The report is displayed in Microsoft Excel .



#### Note

If you change the result of the report, these changes are **not** saved in B.Data.

### See also

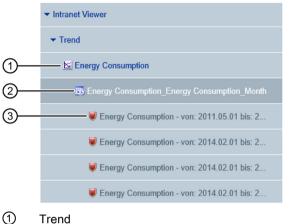
Creating a report (Page 191) Configuring authorizations (Page 93) Navigation in B.Data Web (Page 418)

#### 11.2.3 Working with trends in B.Data Web

### Overview

B.Data Web shows you the trends you configured in B.Data . You can also generate new trends in B.Data Web.

The structure of a trend in B.Data Web consists of the following objects:



2 Query type of the trend

(3) Result of the trend

### Requirement

- The trend is created in B.Data .
- The trend has been released for the current Web application. ٠

11.2 Working with B.Data Web

### Generating trends

1. To generate a trend in B.Data Web, select the required trend in the "Menu" area and click the "Options" tab in the right window pane.

SIEMENS			DATA WEB
6 Y 9 0		User: Admi	n <u>Logout</u>
Menu	Trend: Energy_Consumption (0)		+ add Quicklink
✓ Intranet Viewer	▼ Object		
✓ Trend Web	✓ Object     ► Chart     ► Comments & Alarms		
	Trend		Download Object
Energy_Consumption	Energy Consumption - from: 2011.01.01 till: 2011.04.01 created: 2011.12.23 09:03:53	12/23/2011 9:03:53 AM	
Quicklinks			
© Siemens AG, 2014. All Rights Reserved.			

The "Options" dialog will appear.

- 2. Select a query type and a time range.
- 3. Generate the trend with "Start".
- 4. To install the Trender on the PC, click on "Download Trender program".

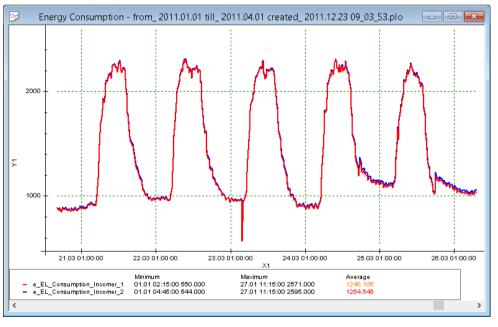
5. To open the trend, select the trend result in the "Menu" area and then click "Open" in the right window pane.

nergy Consumption	1
	1
Downlo	oad Trender Application
	01/04/2011 00:00:00
12/2011 09:03:53 Loa	aded Yes
12	2011 00:00:00 To

The dialog for opening the trend opens.

6. Click "OK".

The trend is displayed in the Trender.



#### Note

If you change the result of the trend, these changes are not saved in B.Data.

#### Using the Quick Chart

You can display the values of a trend in the Quick Chart. To do this, select the required trend in the "Menu" area and click on the "Diagram" tab click in the right window pane.

You can find additional information on this topic in the "Using the Quick Chart" section.

11.2 Working with B.Data Web

## 11.2.4 Working with visualizations in B.Data Web

### Overview

B.Data Web shows you the visualizations you configured in B.Data .

The structure of visualization in B.Data Web consists of the following objects:

	✓ Intranet Viewer
1—	→ ▼ Visualization
2—	Energy Flow
	🚨 Boiler
എ	Vieualization

(1) Visualization

2 Data point of the visualization

### Requirement

- You have created the visualization in B.Data .
- The visualization has been released for the current Web application.

### Open the visualization

1. To open the visualization in B.Data Web, select the visualization in the "Menu" area. The visualization is displayed in the right window pane.



#### Note

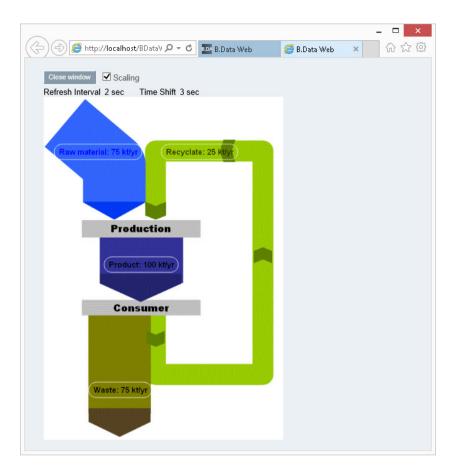
It may take several minutes for a field value to become available in the database. Use the "Shift" function to simulate an adjusted system time to avoid the development of gaps during the first refresh intervals.

- 2. To adapt the visualization to the size of the window, select "Scaling".
- 3. Select "Full screen" to display the visualization in full-screen mode.

The visualization is displayed in the separate window in full-screen mode.

Using B.Data Web

11.2 Working with B.Data Web



### **Editing values**

You can acquire the values of a visualization manually. To do this, select the required data point in the "Menu" area and click "Start Value Input" in the "Object" tab in the right window pane.

You can find additional information on this topic in the "Acquiring data manually" section.

#### Using the Quick Chart

You can display the values of a visualization in the Quick Chart. To do this, select the required data point in the "Menu" area and click on the "Diagram" tab in the right window pane.

You can find additional information on this topic in the "Using the Quick Chart" section.

# 11.2.5 Working with matrixes in B.Data Web

# Overview

B.Data Web shows you the matrixes you configured in B.Data . You can edit the configured matrixes in B.Data Web .

Matrix: Manual\_AcquisitionDaily (1) + add Quicklink Intranet Viewe ▼ Values ► Chart ► Comments & Alarms 4 ▼ Data Collectio <u>1</u> 2 3 4 Þ •• Oct 2, 2014 12:00:00 AM 0 365.00 Oct 3, 2014 12:00:00 AM 0 395.00 Oct 4, 2014 12:00:00 AM 0 0.00 Oct 5. 2014 12:00:00 AM 0 0.00 Oct 6, 2014 12:00:00 AM 750.00 0 Oct 7, 2014 12:00:00 AM 354.00 0 Oct 8, 2014 12:00:00 AN 0 654.00 Oct 9, 2014 12:00:00 AM 0 354.00 Oct 10, 2014 12:00:00 AI 0 646.00 Oct 11, 2014 12:00:00 AM 0 0.00 1 2 3

The structure of a matrix in B.Data Web consists of the following objects:

- ① Datapoint of the matrix
- ② Display area Depending on the selection under ④, the following contents are displayed:
  - Values: Display and input form for values of the time range selected under ③.
  - Diagram: Graphical representation as a Quick Chart of the content displayed under "Values".
  - Comments & alarms: Display of comments for individual values. If the "Validity check" is additionally configured for a datapoint, alarms from violated validity criteria will also be displayed.
- ③ "Options" tab
- ④ Selection of content for ②

The figure below shows the "Options" tab for a matrix:

# 11.2 Working with B.Data Web

_						_	Toggle Table Layout
0	S	Septe	mber	2014	4	0	10 25 50 100
Мо	Di	Mi	Do	Fr	Sa	So	
1	2	3	4	5	6	7	fix to windowsize
8	9	10	11	12	13	14	
15	16	17	18	19	20	21	
22	23	24	25	26	27	28	
29	30						
Abfrag © Tag © Wo © Mo © Jal © W	) oche nat						
	htung: sungs						

- ① Selection of time range, query type, and compression level
- ② Switching to transposed representation
- Number of displayed entries per screen page.
   "Adjust to window size" adjusts the number of entries to the available space.

# Requirement

- The matrix is configured in B.Data .
- The matrix has been released for the current Web application.

# Manually acquiring values

1. To open a matrix, select the datapoint in the "Menu" area.

The matrix is started automatically.

- 2. Open the "Options" tab.
- 3. Under "Data settings" select the query type, the time range, and the compression level.
- 4. If required, specify the following under "Table settings":
  - Transposed representation
  - Number of entries per screen page.
- 5. Enter the desired values.

The new values are displayed in the matrix. Violated validation criteria are immediately visible in the matrix.

6. In order to display details for the value, click the icon next to the value. The "Details" window is displayed:

Details: e_GasConsumption_Daily [m³]				
Timestamp	Oct 6, 2014 12:00:00 AM			
Value	750			
Acq.State	STER_OK v			
Corr.State	valid v			
	OK Close Delete			

You can find additional information on this topic in the "Acquiring data manually" section.

# Using the Quick Chart

You can display the values of a matrix as a Quick Chart. To do this, select the required matrix in the "Menu" area and click on the "Diagram" tab in the right window pane.

You can find additional information on this topic in the "Using the Quick Chart" section.

# See also

Working with reports in B.Data Web (Page 422) Configuring authorizations (Page 93) Using the Quick Chart (Page 266) Manual data acquisition (Page 167) 11.2 Working with B.Data Web

# 11.2.6 Using document management in B.Data Web

# Overview

In B.Data Web , call the documents stored in B.Data or upload new documents to the B.Data database.



# Requirement

- The document is available in B.Data .
- The document has been released for the current Web application.

# Downloading a document

1. To load the document from the B.Data database to B.Data Web , select the required document in the "Menu" area and then click "Download".

SIEMENS		B.D/	ATA WEB
<b>☆ † 0 0</b>		User: Admin	<u>Logout</u>
Menu	Documents Management: Calculation Overview		+ add Quicklink
✓ Intranet Viewer	Download File Reporting Units.bmp		
✓ Document Management	Download		
Calculation Overview	Single File Upload Browse_ No file selected. Upload		
Quicklinks			

The dialog for downloading the document opens.

2. Click "OK".

The document is opened in B.Data Web .

3. To upload the document to the B.Data database, select the document with "Browse" and then click "Upload".

The document was uploaded to the B.Data database or downloaded from the B.Data database in B.Data Web .

# See also

Document management (Page 349)

Configuring authorizations (Page 93)

11.2 Working with B.Data Web

# 11.2.7 Working with energy efficiency measures in B.Data Web

# Overview

B.Data Web shows you the energy efficiency measures you configured in B.Data . You can edit the configured energy efficiency measures in B.Data Web or create new energy efficiency measures.

	✓ Intranet Viewer
	✓ Energy Efficiency
1	All Measures
1	Energy efficiency measure

# Requirement

- The filtered overview object for the energy efficiency measures is generated in B.Data .
- The filtered overview object for the energy efficiency measure is enabled for the current Web application.

# Editing an energy efficiency measure

1. To display the energy efficiency measure in B.Data Web, select the required energy efficiency measure in the "Menu" area.

The energy efficiency measure is displayed in the right pane .

New	Ed	lit	Delet	C							
Name	Region	Business Unit	PI. Sav. [€/Y]	Act. Sav. [€/Y]	PI. CO2 Red. [t/Y]	Act. CO2 Red. [t/Y		State	Equipment	Category	Invest [€]
Reduce water consumption	Linz	IA	15000	0	0	0	1.42857142857143	Initial	Production plant	C-Project	20000
Optimization of the compressed air system	Munich	вт	12000	0	97.2	0	0.869565217391304	Evaluate	Compressed air plant	B-Project	10000
Summary											
Project Count:	2	Total C	02 Red. Pl:		97.20	t/Year T	otal CO2 Red. Af:	0.00 t/Ye	ar ROI Average:	10.38	Year
Project Count: Total Investment:	2 30000.00		02 Red. PI: avings PI.:		97.20 27000.00		otal CO2 Red. Af: otal Savings Af.:	0.00 t/Ye 0.00 €/Ye		10.3	38

2. To create a new energy efficiency measure, click "New" and enter the required data.

▼ Overview	Common	Responsibility	Saving Capabilities	<ul> <li>Cost Effectivenes</li> </ul>	s 🕨	Domains	<ul> <li>Attachments</li> </ul>
Name of Project							
Name of Project:	Reduce consum		State:		Initial		~
Responsibility:		RMANNM	Categ	iory:	C-Project		
Region:	Linz		Busin	ess Unit:	IA		
Savings							
Planned Savings:	15000	€/Year		Realized Savings			€/Year
Planned CO2 Red.:	0	Tons/Year		Realized CO2 Re	d.: 0		Tons/Year
Costs and Efficiency	y						
Investment:	20000	€		Pay Back		1.43	Years
Annual Costs:	-	€		NPV:		56861.80	€
Export							
LAPOIT							

You can find additional information on this topic in the "Managing energy efficiency measures" section.

3. To change the existing energy efficiency measure or delete it, click "Edit" or "Delete".

# See also

Configuring authorizations (Page 93) Generating a filtered overview object (Page 123) Managing energy efficiency measures (Page 112) 11.2 Working with B.Data Web

# 11.2.8 Working with dashboards in B.Data Web

# Overview

B.Data Web shows you the graphic overviews you configured in B.Data . The structure of a dashboard in B.Data Web consists of the following objects:

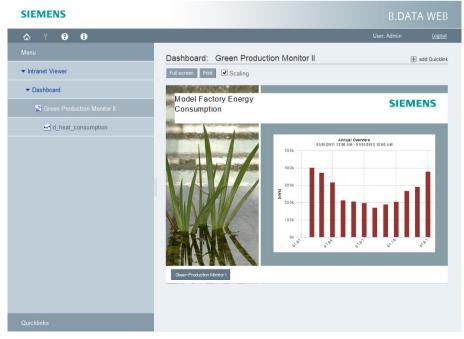
	✓ Intranet Viewer
	▼ Dashboard
1—	Green Production Monitor II
2—	d_consumption_plant_Oxford
1 2	Dashboard Datapoint of the dashboard

# Requirement

- The dashboard is created in B.Data .
- The dashboard has been released for the current Web application.

# Opening a dashboard

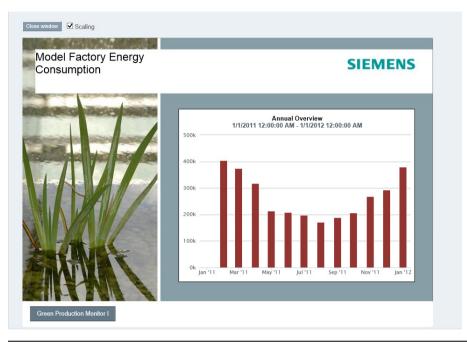
 To display a dashboard, select the required dashboard in the "Menu" area. The dashboard is displayed in the right pane of the window.



2. To adapt the dashboard to the size of the window, select "Scaling".

3. Select "Full screen" to display the dashboard in full-screen mode.

The dashboard is displayed in the separate window in full-screen mode.



#### Note

A dashboard in full screen mode remains open after an automatic logout from B.Data Web. When you attempt to operate the dashboard, you must login to B.Data Web again.

4. In order to print the dashboard:

For printed output, the browser's print settings are used.

- For this reason, set the desired settings for page scaling or page orientation before printing.
- Use the browser's preview feature in order to review the result.
- Click "Print".

The "Print" dialog for the operating system opens.

## **Editing values**

You can acquire the values of a dashboard manually. To do this, select the required datapoint in the "Menu" area and click "Start Value Input" in the "Object" tab in the right window pane.

You can find additional information on this topic in the "Acquiring data manually" section.

11.2 Working with B.Data Web

# Using the Quick Chart

You can display the values of a dashboard in the Quick Chart. To do this, select the required datapoint in the "Menu" area and click on the "Diagram" tab in the right window pane. You can find additional information on this topic in the "Using the Quick Chart" section.

# See also

Configuring authorizations (Page 93) Manual data acquisition (Page 167) Using the Quick Chart (Page 266)

# 11.2.9 Importing measured values into B.Data Web

## Overview

In B.Data Web you can import measured values for one or more datapoints. A wizard guides you through the import procedure.

#### Note

If a timestamp is already present in a datapoint, the time stamp and its value are overwritten during the import.

#### Note

#### Delimiter in the import file depends on the language setting in B.Data Web

Which character is interpreted as a delimiter between value depends on the language setting in B.Data Web:

The delimiter between the individual values depends on the language with which you logged in to B.Data Web.

- German: ";" is interpreted as the delimiter character.
- English: "," is interpreted as the delimiter character.

Login to B.Data Web in the language, in which the import file was generated.

## 11.2 Working with B.Data Web

1				
SIENENS		B.DAT	A WEB	
<b>0 0 ۲</b>		User: Admin	Logout	
Administration • Dataimport	Step 1: Choose CSWTXT-File	Browse		-2
	Step 2: Verify parsed data 26 values found for e_GasConsumption_Daily. Step 3: Summary	Import data		-3
	e_GasConsumption_Daily: 26 values successfully imported from Oct 2, 2014 12:00:00 AM to Oct 27, 2014 11:00:00 PM	Show imported data Save Logfile		(4)

① Retrieving the web page for the data import.

Selecting the file with the measured values.

The figure below shows the content of a valid import file, which was generated with a German program environment:

	e_Ga	sConsur	nption_D	aily - No	tepad	-	×	
File Edit F	ormat View	Help						
MSJO_DATU	M;e_GasCo	nsumpti	ion_Dail	у				$\sim$
01.10.201	4 22:00:0	0;365						
02.10.201	4 22:00:0	0;395						
03.10.201	4 22:00:0	ð;0						
04.10.201	4 22:00:0	ð;0						
05.10.201	4 22:00:0	ð;750						
06.10.201	4 22:00:0	ð;354						
07.10.201	4 22:00:0	ð;654						
08.10.201								
09.10.201								
10.10.201								
11.10.201	4 22:00:0	ð;0						
12.10.201								
13.10.201								
14.10.201								
15.10.201								
16.10.201								
17.10.201								
18.10.201								
19.10.201								
21.10.201								
22.10.201								
23.10.201								
24.10.201								
25.10.201								
26.10.201								
27.10.201	4 22:00:0	∂;468						v
<							>	

③ Data checking

After selecting the file under ①, the content is automatically checked, and the result of the check is displayed.

- "Import data": Starts the import.
- 4

2

- Summary of the data import
  - "Display imported data": Displays the imported values on a separate web page as a Quick Chart.
  - "Save log file": Saves the displayed summary as a file.

# Requirement

- Datapoint has been created in B.Data.
- Measured values exist as a file in \*.CSV format.
- Interval between timestamps corresponds to the datapoint's configured acquisition cycle.

# Procedure

- 1. Switch to the web page for the data import.
- 2. Select the file.
- 3. Start the import.

## Result

The measured values are imported.

Using B.Data Web

11.2 Working with B.Data Web

# 11.2.10 Configuring Quicklinks

11.2.10.1 Create Quicklinks

#### **Overview**

In B.Data Web you create Quicklinks to frequently used objects.

#### Requirement

• You have the functional authorizations "Create Quicklinks" and "Configure Quicklinks".

## Procedure

- 1. Select the object for which you want to create a Quicklink in the "Menu" area, for example, "Trend Web".
- 2. Click the "Add Quicklink" icon.

SIEMENS		B.DATA WEB
Help About		User: Admin <u>Logout</u>
Menu	Items (1)	🛨 add Quicklink
✓ Intranet Viewer	Energy_Consumption	
▼ Trend		
Energy_Consumption		

The dialog for editing the Quicklink opens.

Edit Quicklink					
Name					
Trend					
Icon Background Color					
Choose Quicklink as home page					
Save Cancel Delete					

3. To create the Quicklink, click "Save".

# Result

The Quicklink is created as follows:

- The object name is applied.
- The preset icon and background color are used.

SIEMENS	
Help <u>About</u>	
Menu	Items (1)
Quicklinks	Energy_Consumption
Trend	

## **Exception: Creating Quicklinks for reports**

1. Select the required report the "Menu" area and click "Add Quicklink".

The "Create New Quicklink" dialog opens.

Create new Quicklink		
Create Quicklink to current view     Create Quicklink to latest element		
	Ok	Cancel

- 2. If you want to create a Quicklink to the overview of the report, select the "Create Quicklink to current view".
- If you want to create a Quicklink to the last result of the report, select the option "Create Quicklink to the last element" and select the required format, for example, "Excel "or" PDF ".



If you select this Quicklink, the report opens in the selected format.

4. Edit the Quicklink as desired and save your entries.

## Using B.Data Web

11.2 Working with B.Data Web

# See also

Navigation in B.Data Web (Page 418) Edit Quicklinks (Page 449) Logging on to the B.Data Web (Page 420) Configuring authorizations (Page 86)

# 11.2.10.2 Edit Quicklinks

## Overview

You can change the order of the Quicklinks in the "Quicklinks" area or delete them if they are no longer needed. You can also customize the Quicklinks, for example, by changing the background color or the icon.

# Requirement

• You have the functional authorizations "Configure Quicklinks" and "Delete Quicklinks".

Using B.Data Web

11.2 Working with B.Data Web

# Change the sequence of the Quicklinks

1. Open the "Quicklinks" area.

#### SIEMENS

<u>Help</u> <u>About</u>	
Menu	Items (11)
Quicklinks	KPI
Visualization 🖋 Report Web 🥖	KPI Batch Production Energy Overview
	<ul> <li>Accounting</li> <li>Contract Analysis</li> </ul>
	<ul> <li>Carbon Emission</li> <li>Degree Days</li> </ul>

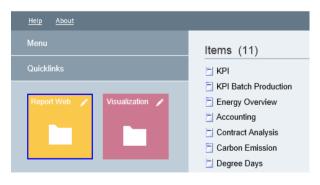
2. To move a Quicklink, use drag-and-drop to place it at the required position.

# SIEMENS



The Quicklink is placed at the respective location.

#### SIEMENS



# **Customize Quicklink**

1. Click the "PencilTool" icon in the "Quicklinks" area above the required Quicklink.



The "Edit Quicklink" dialog box opens.

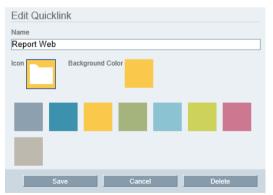
Edit Quicklink	
Name	
Report Web	
Icon Background Color	
Choose Quicklink as home page	
Save Cancel	Delete

- 2. To rename the Quicklink, enter the desired name in the "Name" input box.
- 3. To change the Quicklink icon, click on "Icon" and select the desired icon.

There are 18 predefined icons available to you.

Edit Quicklink
Name
Report Web
Icon Background Color
🖿 🗹 🕫 🗖 🔜 🗖
📑 🖻 📄 📽 🔍 🗐
Save Cancel Delete

4. To change the background color of the Quicklink, click on "Background Color" and select the required background color.



11.2 Working with B.Data Web

5. To specify the Quicklink as homepage, select the "Choose Quicklink as home page" check box.

#### Note

If you do not specify any Quicklink as homepage, the first Quicklink in the "Quicklinks" area is used as homepage page.

6. Save your changes to the Quicklink.

## **Delete Quicklink**

1. Click the "PencilTool" icon above the desired Quicklink.

The "Edit Quicklink" dialog box opens.

Click "Delete".
 The Quicklink is deleted.

# See also

Navigation in B.Data Web (Page 418) Create Quicklinks (Page 446)

Configuring authorizations (Page 86)

# 11.3 Administering B.Data Web

# 11.3.1 Defining an entry point

You can configure B.Data Web using the B.Data Plant Explorer. This is where you define an entry point for B.Data Web..

# Procedure

- 1. In the Plant Explorer, create a folder, for example, "Intranet Viewer".
- 2. Copy to this folder the objects that the respective user should be able to view and edit in B.Data Web .

ት 🎦 Intranet Viewer				
E Report Web				
🖽 🔄 Plant Performance				
📴 🛄 KPI				
🛱 🛄 Energy Overview				
🖶 🛅 Utilization				
👜 📃 Sustainability Elements				
🕀 📋 Validation				
Image: Plant Performance         Image: Pl				
🖶 📋 Accounting				
🖽 🗍 Contract Analysis				
🖶 📄 Carbon Emission				
🖽 🗍 Degree Days				
🖽 📋 Costcenter Report				
🕀 🛅 Trend				
🖽 🛅 Visualization				
🖶 🛄 Data Collection				
Report Web     Report Web     Report Web     Reprovement of the second sec				
🖽 🛅 Energy Efficiency				
Dashboard				

3. Assign the user group to which the user should be included for the defined entry point.

m	Benutzergruppe - Guest	-		×
Name:	Guest			
Description:	Guest user group			^
B.Data Web:	Intranet Viewer		Clear	¥
9	OK		Cancel	

You find additional information on this topic in the "Configuring authorizations" section, keyword "Entry point".

## See also

Configuring authorizations (Page 93)

11.3 Administering B.Data Web

# 11.3.2 Authorizations for navigation

As administrator, you use authorizations to specify which options are available to a specific user group for navigation in B.Data Web:

- "Menu view" for displaying the "Menu" area
- "Quicklinks view " for displaying the "Quicklinks" area
- "Quicklinks configure" for changing existing Quicklinks
- "Quicklinks create" for creating new Quicklinks
- "Quicklinks delete" for deleting Quicklinks

For information on exact procedures, refer to the "Configuring authorizations" section.

# 11.3.3 Configuring Quicklinks in the B.Data client

# Overview

You have the option of creating and editing the required Quicklinks in B.Data Client. You can create up to 50 Quicklinks for each user.

# Procedure

1. In the Plant Explorer, double-click on the desired user, e.g. "SIEMENS".

j- 📄 ر	Jser
-	BDATA_GUEST
-	ADMIN
	SIEMENS

2. Select the "Quicklinks for Web" tab.

ł	Benu	itzer - SIEMENS			×
Common Administration	Quicklinks for Web	Quicklinks for Clie	nt		
Quicklinks					
Object				Edit	
				Delete	
				Up	
				Down	
Add Quicklink by using D	rag & Drop:				
				Add	
9			ОК	Cancel	

#### 11.3 Administering B.Data Web

3. To create a new Quicklink for the user, drag the required object ("Dashboard" in the example) from the project tree and drop it onto the "Add Quicklink by using Drag & Drop" field. Then click "Add".

#### Note

The only objects you can create as Quicklinks are those listed under the entry point for B.Data Web, for example under "System > Intranet Viewer".

The Quicklink is displayed in the overview.

Benutzer - SIEMENS			×
Common Administration Quicklinks for Web Quicklinks for Client			
Quicklinks			
Object		Edit	
Dashboard		Delete	
	1	Delete	
		Up	
			-
		Down	
Add Quicklink by using Drag & Drop:			
		Add	
•	ОК	Cancel	
			_

4. Click "Edit" to edit the Quicklink.

The following editing options are available:

- Change the name of the Quicklink
- Specify Quicklink as homepage
- Set the icon for the Quicklink
- Set the background color for the Quicklink
- 5. To delete the Quicklink, click "Delete".
- 6. To change the order of the Quicklinks in the overview, click "Up" or "Down".

# Result

When you log on with your user access information in B.Data Web , the created Quicklink is displayed as the homepage.

# SIEMENS

<u>Help About</u>	
Menu	Items (7)
Quicklinks	Brewery>Electricity>Sankey
	Brewery>Electricity>PieChart
Dashboard 🥒	Brewery>Electricity>Overview_MONTH
	Brewery>Electricity>Overview_WEEK
	Brewery>Electricity>Overview_DAY
	Green Production Monitor
	Green Production Monitor II

# See also

Configuring authorizations (Page 86)

11.3 Administering B.Data Web

# **Using B.Data Mobile**

# 12.1 B.Data Mobile basics

#### Definition

B.Data supports in situ manual acquisition of operational or counter values by means of mobile device such as a PDA.

B.Data Mobile is a software interface that enables the acquisition of values on a mobile device and their automatic import to B.Data .

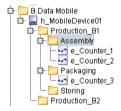
#### Usage

You use B.Data Mobile in the following cases:

- If automatic measured value acquisition is not possible, e.g. using a counter.
- If a link or a sensor fails during automatic measured value acquisition.

# Data acquisition on mobile devices

Set up each mobile device as hardware object in B.Data. Copy the data points to be acquired by means of the hardware object to the tree below the hardware object. Once the mobile device is interconnected with a B.Data client, the data point values are synchronized automatically with the B.Data database.



You have the following options of acquiring values on the mobile device:

Separate identification of the counters

Identify a counter from which you only take a manual reading in exceptional situations or on rare occasions on the mobile device. You can use a mobile device that features a scanner to take an unambiguous reading of the counter's barcode ID. You can access the values stored in the data point after you have identified the counter.

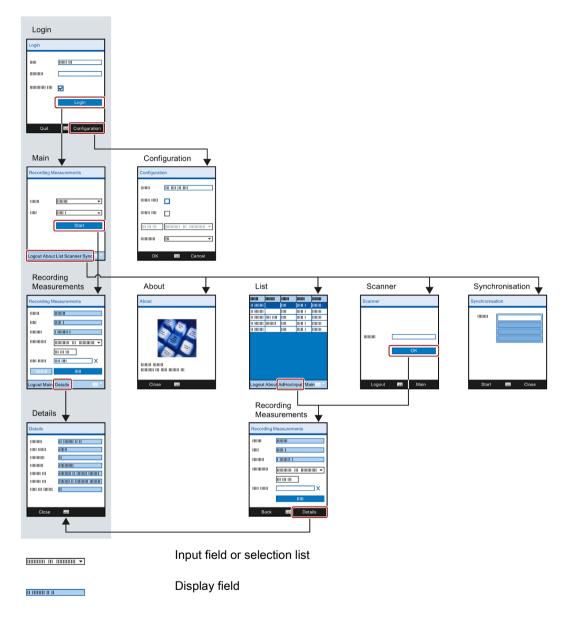
• Defining routes

Define a route in B.Data for reading multiple counters at cyclic intervals. A route lets you define the order in which the devices are read locally. The mobile device guides you through the route and provides you with additional information such as the last value, as well as high and low limits.

12.2 Navigation structure of the "B.Data Mobile" application

# 12.2 Navigation structure of the "B.Data Mobile" application

The following diagram highlights the navigation structure of the "B.Data Mobile" application on the mobile device:



## See also

Synchronizing data on the mobile device (Page 465)

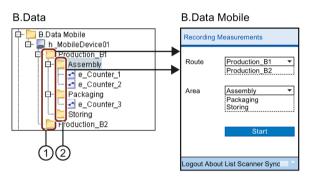
# 12.3 Configuring mobile devices in B.Data

# Overview

In B.Data, assign the hardware object the data points that you want to acquire on the mobile device. Improve the overview by setting up a two-layer folder structure that you can use, for example, to reproduce the production site.

in addition, you may define an existing folder structure as route for a read operation.

The following figure highlights the mapping of a folder structure in B.Data to the mobile device:



① Folders of the first hierarchy level are organized on the mobile device under "Route".

② Folders of the second hierarchy level are organized on the mobile device under "Area". The content of the selection list depends on the "Route" selected under ①.

# Requirements

• The mobile device is configured and interconnected with the PC.

For more information on this topic, refer to the "B.Data V6.0 - Installation" manual, keyword "Installing B.Data Mobile and configuring it on the mobile device".

• The data points are set up in B.Data.

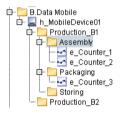
12.3 Configuring mobile devices in B.Data

# Procedure

1. Create a hardware object in B.Data for the mobile device, for example, "h\_MobileDevice01".

	Hardware - h_MobileDevice01 - 🗖 🗙
Name: Description:	h_MobileDevice01
	MobileDevice01  Active Acquisition Application Server Kernel
	OK Cancel

- 2. Set up a folder structure that consists of no more than two layers if you want to use routing for reading the meters.
- 3. Copy the data points to acquire with the mobile device to the folder structure below the hardware object. Assign the data points to the folder structure:



4. Add the "Job for route synchronization" to the job queue to generate one or several routes based on a folder structure.

#### Note

"Job for route synchronization" prepares the route for the synchronization process. Run this job whenever you have made changes to the folder structure.

5. Start synchronization on the mobile device for the initial transfer of the data points to the mobile device.

## Result

The data points are inserted in B.Data below the hardware object of the mobile device. On completion of this initial synchronization, the measured values of the data points are available on the mobile device as well.

The measured values are synchronized automatically when you initially connect the mobile device with the B.Data client.

# 12.4 Measured value input on the mobile device

# Requirement

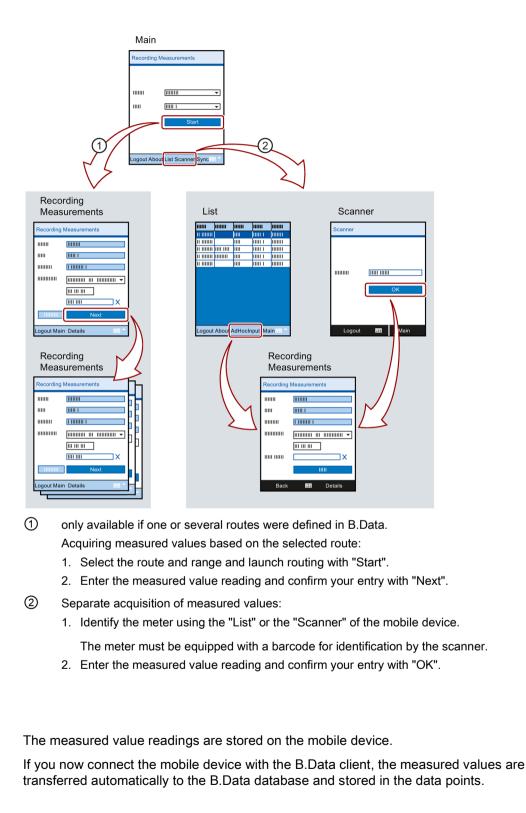
- You are logged on to the "B.Data Mobile" application on the mobile device.
- The "Main" picture is displayed on the mobile device.
- The synchronization process is concluded.

# Procedure

- 1. Identify the meter.
- 2. Enter the measured value reading on the mobile device.
- 3. Enter the time stamp, if necessary.

The following figure shows how to enter measured values on the mobile device, based on the "Main" picture:

12.4 Measured value input on the mobile device



## See also

Result

Generating barcode (Page 466)

# 12.5 Synchronizing data on the mobile device

# Overview

The following actions are performed when you synchronize data on the mobile device:

- The routes and data points that you have configured in B.Data will be mapped to the mobile device.
- The values you have entered on the mobile device are saved to the corresponding data points in B.Data.

You can synchronize data on the mobile device as follows:

• Manually

Synchronize the data manually if using B.Data Mobile for the first time.

Automatically

The measured values are synchronized automatically when you initially connect the mobile device with the B.Data client.

# Requirement

• B.Data Mobile is installed and configured in B.Data and on the mobile device.

For more information, refer to the "B.Data V6.0 - Installation" manual, keyword "Installing B.Data Mobile".

- You are logged on to the mobile device with the B.Data access data.
- The mobile device displays the "Main" screen.

## Synchronizing data manually

1. Select the "Synchronization" command.

The data is synchronized and the synchronization status is indicated in the "Synchronization" screen.

## Result

The data on the mobile device and in B.Data is synchronized.

#### Note

#### Ignoring the values

The current value will be ignored if the B.Data database already contains a data point value with the same time stamp.

# 12.6 Generating barcode

# Overview

Provided your mobile device supports scanner functionality, you can use the scanner of the mobile device to identity the meters of your plant by means of barcode. You need to generate this barcode for each meter that you have configured in B.Data.

#### Note

## Configuring meters for barcode generation

Observe the following naming conventions when configuring meters:

- You may only use uppercase letters from "A" to "Z" and numbers from "0" to "9".
- Use the hyphen "-" as delimiter.

# Requirement

- The "Free 3 of 9 Extended" font is installed on the PC.
- Microsoft Excel is installed and opened on the PC.
- The meter is configured in B.Data.

## Procedure

- 1. Enter the name of the meter in Microsoft Excel.
- 2. Use the "Free 3 of 9 Extended" font to assign the barcode to the meter name, for example:

	А	В
1	COUNTER001	
2	COUNTER002	
3		

#### Note

#### Font size for the barcode

The font size of the barcodes you generate may not be smaller than 12 pt.

3. Print the generated barcode and attach it to the selected meter.

## Result

You can now identify the meter by its generated barcode using the scanner of the mobile device.

# 13

# Reference

# 13.1 Acquisition status of a value

The following value acquisition states are possible:

- STER\_OK
- STER\_INVALID
- STER\_CONFUSE
- STER\_GAP
- STER\_FIRST
- STER\_FIRST\_INVALID
- STER\_FIRST\_CONFUSE
- STER\_FIRST\_INVALID\_CONFUSE
- STER\_LAST
- STER\_LAST\_INVALID
- STER\_LAST\_CONFUSE
- Implemented in the NLS
- DB update disabled in the NLS
- Calculated process value
- Invalid in CAD
- Adjusted in CAD
- Application-specific
- Outliers
- Substitute value

## Reference

13.2 Correction status of a value

# 13.2 Correction status of a value

The following value correction states are possible:

- Valid
- Invalid
- Corrected with LRU
- Corrected with substitute measurement
- Corrected with substitute value
- Valid with manual manipulation
- Valid corr. with LRU and manual manipulation
- Valid corr. with substitute m. and manual manipulation.
- Valid corr. with substitute v. and manual manipulation.
- Import
- Invalid import
- Import valid, corr. with LRU
- Import valid, corr. with substitute measurement
- Import valid, corrected with substitute value
- Import valid with manual manipulation
- Import valid, corr. with LRU+manual manipulation.
- Import valid, corr. with substitute m.+manual manipulation.
- Import valid, corr. with substitute v.+manual manipulation.
- Corrected

# 13.3 Query types

Query type	Description			
Derived-E2	Derived measurement E2			
Discontinued, no longer availa-	Time of observation: 08.01.2008 09:15:12			
ble in the new version.	Interval for manual start of reporting:			
	09.01.2008 00:00 - 26.05.2035 00:00			
	Interval for automatic start of reporting:			
	09.01.2008 00:00 - 26.05.2035 00:00			
Ad-Hoc	This query type represents a user-specific query period. You must enter both the start and end time.			
	Interval for automatic start of reporting:			
	Query type cannot be used in automatic reporting.			
Current quarter	Current quarter			
	Time of observation: 08.01.2008 09:15:12			
	Interval for manual start of reporting:			
	01.01.2008 00:00 - 01.04.2008 00:00			
	Interval for automatic start of reporting:			
	01.01.2008 00:00 - 01.04.2008 00:00			
Analysis shift 1	Shift 1 queries			
or	Time of observation: 08.01.2008 09:15:12			
shift 1	Interval for manual start of reporting:			
	08.01.2008 05:30 - 08.01.2008 13:30			
	Interval for automatic start of reporting:			
	07.01.2008 05:30 - 08.01.2008 13:30			
Analysis shift 2	Shift 2 queries			
or	Time of observation: 08.01.2008 09:15:12			
shift 2	Interval for manual start of reporting:			
	08.01.2008 13:30 - 08.01.2008 21:30			
	Interval for automatic start of reporting:			
	07.01.2008 13:30 - 08.01.2008 21:30			
Analysis shift 3	Shift 3 queries			
or	Time of observation: 08.01.2008 09:15:12			
shift 3	Interval for manual start of reporting:			
	08.01.2008 21:30 - 09.01.2008 05:30			
	Interval for automatic start of reporting:			
	07.01.2008 21:30 - 09.01.2008 05:30			
Energy supplier - Year	Energy supplier queries - Years			
	Time of observation: 08.01.2008 09:15:12			
	Interval for manual start of reporting:			
	31.08.2006 22:00 - 31.08.2007 22:00			
	Interval for automatic start of reporting:			
	31.08.2006 22:00 - 31.08.2007 22:00			

The following query periods are available:

Query type	Description				
Energy supplier - Month	Energy supplier queries - Months				
	Time of observation: 08.01.2008 09:15:12				
	Interval for manual start of reporting:				
	30.11.2007 22:00 - 31.12.2007 22:00				
	Interval for automatic start of reporting:				
	30.11.2007 22:00 - 31.12.2007 22:00				
Energy supplier - Day	Energy supplier queries - Days				
	Time of observation: 08.01.2008 09:15:12				
	Interval for manual start of reporting:				
	06.01.2008 22:00 - 07.01.2008 22:00				
	Interval for automatic start of reporting:				
	06.01.2008 22:00 - 07.01.2008 22:00				
Energy supplier - Week	Energy supplier queries - Weeks				
	Time of observation: 08.01.2008 09:15:12				
	Interval for manual start of reporting:				
	Sun. 30.12.2007 22:00 - Sun. 06.01.2008 22:00				
	Interval for automatic start of reporting:				
	Sun. 30.12.2007 22:00 - Sun. 06.01.2008 22:00				
Next year	Forecast next year				
,	Time of observation: 08.01.2008 09:15:12				
	Interval for manual start of reporting:				
	01.01.2009 00:00 - 01.01.2010 00:00				
	Interval for automatic start of reporting:				
	01.01.2009 00:00 - 01.01.2010 00:00				
Next month	Forecast next month				
	Time of observation: 08.01.2008 09:15:12				
	Interval for manual start of reporting:				
	09.01.2008 00:00 - 09.02.2008 00:00				
	Interval for automatic start of reporting:				
	09.01.2008 00:00 - 09.02.2008 00:00				
Next day	Forecast next day				
	Time of observation: 08.01.2008 09:15:12				
	Interval for manual start of reporting:				
	09.01.2008 00:00 - 10.01.2008 00:00				
	Interval for automatic start of reporting:				
	09.01.2008 00:00 - 10.01.2008 00:00				
Next week	Forecast next week				
	Interval for manual start of reporting:				
	09.01.2008 00:00 - 09.02.2008 00:00				
	Interval for automatic start of reporting:				
	09.01.2008 00:00 - 09.02.2008 00:00				
	03.01.2000 00.00 - 03.02.2000 00.00				

Query type	Description
Financial year + 6h	Financial year + 6h queries
	Time of observation: 08.01.2008 09:15:12
	Interval for manual start of reporting:
	01.10.2007 06:00 - 01.10.2008 06:00
	Interval for automatic start of reporting:
	01.10.2006 06:00 - 01.10.2007 06:00
GAS - Month	GAS month queries
	Time of observation: 08.01.2008 09:15:12
	Interval for manual start of reporting:
	01.12.2007 06:00 - 01.01.2008 06:00
	Interval for automatic start of reporting:
	01.12.2007 06:00 - 01.01.2008 06:00
GAS day	Query GAS days
	Time of observation: 08.01.2008 09:15:12
	Interval for manual start of reporting:
	06.01.2008 06:00 - 07.01.2008 06:00
	Interval for automatic start of reporting:
	06.01.2008 06:00 - 07.01.2008 06:00
Financial year	Financial year queries
	Time of observation: 08.01.2008 09:15:12
	Interval for manual start of reporting:
	01.10.2007 00:00 - 01.10.2008 00:00
	Interval for automatic start of reporting:
	01.10.2006 00:00 - 01.10.2007 00:00
Year	Query year
	Time of observation: 08.01.2008 09:15:12
	Interval for manual start of reporting:
	01.01.2008 00:00 - 01.01.2009 00:00
	Interval for automatic start of reporting:
	01.01.2007 00:00 - 01.01.2008 00:00
KR-14-year	Query KR-14 year
	Time of observation: 08.01.2008 09:15:12
	Interval for manual start of reporting:
	01.12.2007 00:00 - 01.12.2008 00:00
	Interval for automatic start of reporting:
	01.12.2006 00:00 - 01.12.2007 00:00
Month	Query month
	Time of observation: 08.01.2008 09:15:12
	Interval for manual start of reporting:
	01.01.2008 00:00 - 01.02.2008 00:00
	Interval for automatic start of reporting:
	01.12.2007 00:00 - 01.01.2008 00:00

Query type	Description
Month + 6h	Monthly queries + 6h
	Time of observation: 08.01.2008 09:15:12
	Interval for manual start of reporting:
	01.01.2008 06:00 - 01.02.2008 06:00
	Interval for automatic start of reporting:
	01.12.2007 06:00 - 01.01.2008 06:00
Cur. month	Current month
	Time of observation: 08.01.2008 09:15:12
	Interval for manual start of reporting:
	01.01.2008 00:00 - 01.02.2008 00:00
	Interval for automatic start of reporting:
	01.01.2008 00:00 - 01.02.2008 00:00
Current month + 6h	Queries current month + 6h
	Time of observation: 08.01.2008 09:15:12
	Interval for manual start of reporting:
	01.01.2008 06:00 - 01.02.2008 06:00
	Interval for automatic start of reporting:
	01.01.2008 06:00 - 01.02.2008 06:00
Month (current + M)	Month super (2 months) queries
, ,	Time of observation: 08.01.2008 09:15:12
	Interval for manual start of reporting:
	01.01.2008 00:00 - 01.03.2008 00:00
	Interval for automatic start of reporting:
	01.01.2008 00:00 - 01.03.2008 00:00
Production day	Query production days
Discontinued, no longer availa-	Time of observation: 08.01.2008 09:15:12
ble in the new version.	Interval for manual start of reporting:
	08.01.2008 05:30 - 09.01.2008 05:30
	Interval for automatic start of reporting:
	07.01.2008 05:30 - 08.01.2008 05:30
Production day T7	Query production day Converter 7
Discontinued, no longer availa-	Time of observation: 08.01.2008 09:15:12
ble in the new version.	Interval for manual start of reporting:
	08.01.2008 05:30 - 09.01.2008 05:30
	Interval for automatic start of reporting:
	07.01.2008 05:30 - 08.01.2008 05:30
Production day T8	Query production day Converter 8
Discontinued, no longer availa-	Time of observation: 08.01.2008 09:15:12
ble in the new version.	Interval for manual start of reporting:
	08.01.2008 05:30 - 09.01.2008 05:30
	Interval for automatic start of reporting:
	07.01.2008 05:30 - 08.01.2008 05:30
	01.01.2000 03.30 - 00.01.2000 03.30

Query type	Description
Production day T9	Query production day Converter 9
Discontinued, no longer availa-	Time of observation: 08.01.2008 09:15:12
ble in the new version.	Interval for manual start of reporting:
	08.01.2008 05:30 - 09.01.2008 05:30
	Interval for automatic start of reporting:
	07.01.2008 05:30 - 08.01.2008 05:30
Shift	Shift queries
Discontinued, no longer availa-	Time of observation: 08.01.2008 09:15:12
ble in the new version.	Interval for manual start of reporting:
Query type corresponds to day	07.01.2008 06:00 - 08.01.2008 06:00
+6h	Interval for automatic start of reporting:
	07.01.2008 06:00 - 08.01.2008 06:00
Shift 06:00-14:00	Shift 06:00-14:00
	Time of observation: 08.01.2008 09:15:12
	Interval for manual start of reporting:
	08.01.2008 06:00 - 08.01.2008 14:00
	Interval for automatic start of reporting:
	07.01.2008 06:00 - 07.01.2008 14:00
Shift 06:00 - 14:30	Shift 06:00-14:30
	Time of observation: 08.01.2008 09:15:12
	Interval for manual start of reporting:
	08.01.2008 06:00 - 08.01.2008 14:30
	Interval for automatic start of reporting:
	07.01.2008 06:00 - 07.01.2008 14:30
Shift 14:00-23:00	Shift 14:00-23:00
	Time of observation: 08.01.2008 09:15:12
	Interval for manual start of reporting:
	08.01.2008 14:00 - 08.01.2008 23:00
	Interval for automatic start of reporting:
	07.01.2008 14:00 - 07.01.2008 23:00
Shift 14:30-23:00	Shift 14:30-23:00
	Time of observation: 08.01.2008 09:15:12
	Interval for manual start of reporting:
	08.01.2008 14:30 - 08.01.2008 23:00
	Interval for automatic start of reporting:
	07.01.2008 14:30 - 07.01.2008 23:00
Shift 23:00-06:00	Shift 23:00-06:00
	Time of observation: 08.01.2008 09:15:12
	Interval for manual start of reporting:
	08.01.2008 23:00 - 08.01.2008 06:00
	Interval for automatic start of reporting:
	07.01.2008 23:00 - 07.01.2008 06:00

Query type	Description
Since new year	Queries since beginning of the year
	Time of observation: 08.01.2008 09:15:12
	Interval for manual start of reporting:
	01.01.2008 00:00 - 08.01.2008 00:00
	Interval for automatic start of reporting:
	Query type cannot be used in automatic reporting.
Since the beginning of the pre-	Queries since the beginning of the previous year
vious year	Time of observation: 08.01.2008 09:15:12
	Interval for manual start of reporting:
	01.01.2007 00:00 - 08.01.2008 00:00
	Interval for automatic start of reporting:
	Query type cannot be used in automatic reporting.
Since beginning of month	Queries since the beginning of the month
	Time of observation: 08.01.2008 09:15:12
	Interval for manual start of reporting:
	01.01.2008 00:00 - 08.01.2008 00:00
	Interval for automatic start of reporting:
	Query type cannot be used in automatic reporting.
Hour	Hourly queries
Discontinued, no longer availa-	Time of observation: 08.01.2008 09:15:12
ble in the new version.	Interval for manual start of reporting:
	08.01.2008 09:00 - 08.01.2008 10:00
	Interval for automatic start of reporting:
	08.01.2008 08:00 - 08.01.2008 09:00
Hour with half-hour offset	Queries of hours with half-hour offset
Discontinued, no longer availa-	Time of observation: 08.01.2008 09:15:12
ble in the new version.	Interval for manual start of reporting:
	08.01.2008 09:30 - 08.01.2008 10:30
	Interval for automatic start of reporting:
	08.01.2008 08:30 - 08.01.2008 09:30
Day	Daily queries
	Time of observation: 08.01.2008 09:15:12
	Interval for manual start of reporting:
	08.01.2008 00:00 - 09.01.2008 00:00
	Interval for automatic start of reporting:
	07.01.2008 00:00 - 08.01.2008 00:00
Day + 6h	Daily queries + 6h
	Time of observation: 08.01.2008 09:15:12
	Interval for manual start of reporting:
	08.01.2008 06:00 - 09.01.2008 06:00
	Interval for automatic start of reporting:
	07.01.2008 06:00 - 08.01.2008 06:00

Query type	Description
Day curr.	Current day
	Time of observation: 08.01.2008 09:15:12
	Interval for manual start of reporting:
	08.01.2008 00:00 - 09.01.2008 00:00
	Interval for automatic start of reporting:
	08.01.2008 00:00 - 09.01.2008 00:00
Day/shift	Daily query - 1h 45min
	Interval for manual start of reporting:
	06.01.2008 22:15 - 07.01.2008 22:15
	Interval for automatic start of reporting:
	06.01.2008 22:15 - 07.01.2008 22:15
Comparison (internal)	Internal function for comparison queries
Week	Weekly queries
	Interval for manual start of reporting:
	07.01.2008 00:00 - 14.01.2008 00:00
	Interval for automatic start of reporting:
	31.12.2007 00:00 - 07.01.2008 00:00
Week/shift	Weekly queries - 1h 45min
	Interval for manual start of reporting:
	30.12.2007 22:15 - 06.01.2008 22:15
	Interval for automatic start of reporting:
	30.12.2007 22:15 - 06.01.2008 22:15

13.4 Filter criteria for a message list

# 13.4 Filter criteria for a message list

Column	Description
Value	Value of the message
Batch	Batch ID of the message
Message	Number of the message
Class	Type of the message: Warning or violation
Status key	Status key of the message
Status description	Status description of the message
Ackn. user name (B.Data)	Name of the user on B.Data level who acknowledged the message.
Ackn. user name (field)	Name of the user on field level who acknowledged the message.
Writing user (field)	Name of the user on field level who configured the message.
Tag name	Tag name of the message
Tag ID	Tag ID of the message
Time stamp	Time as of which activated messages are displayed.

# 13.5 Time unit abbreviations

Abbreviation	Time unit
d	Day
h	Hour
Y	Year
Μ	Month
min	Minute
s	Second
W	Week

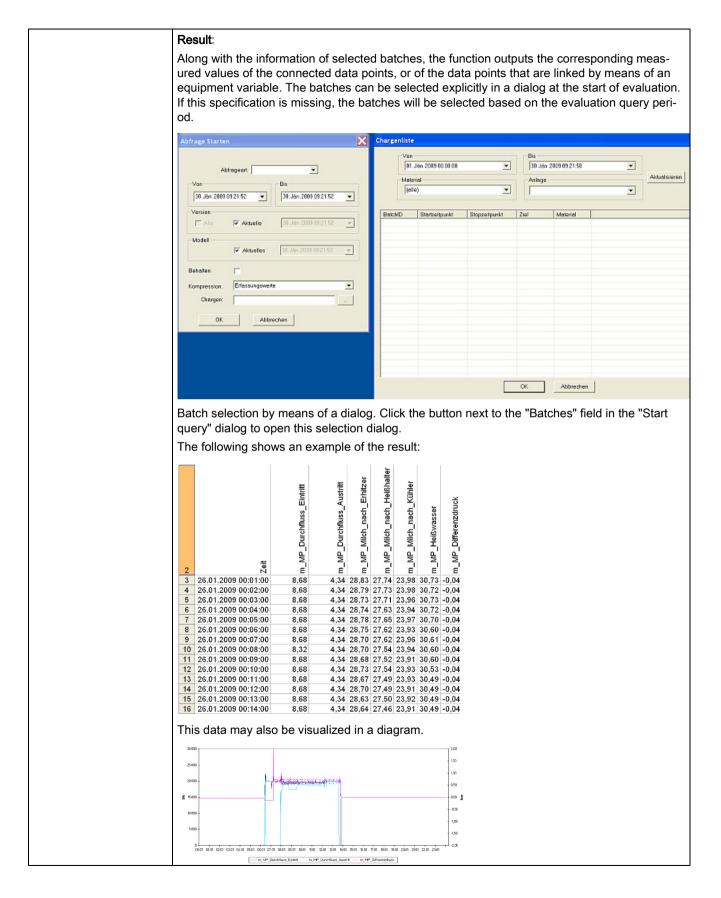
Specific modules must be assigned different objects. The following table lists all available modules, highlights all objects to be connected, or provides examples of the layout of result presentations.

Query	Inputs:						
	1-n data points (d_, e_, a	1-n data points (d_, e_, a_)					
	Start parameters:						
	none						
	Result:						
		a data n	sinta transfor all ma	a way	use of the guary period from the		
	The connected operating data points transfer all measured values of the query period from the database to Excel.						
		E_V_117a		E_V_116a			
	time	b	time				
	=====================================			159			
	18.04.2005 00:30	167		158			
	18.04.2005 00:45		18.04.2005 00:45	158			
	18.04.2005 01:00	167	18.04.2005 01:00	158			
Query max. wrapper rows	Inputs: 1 data point (d_, e_, a_)						
	Start parameters:						
	none						
	Result:						
	The connected operating	the row	limit that is to be d		ues of the query period from the .Data Options has been reached,		
	time	d_A_E_V_117a					
	18.04.2005 00:15	170	18.06.2005 00:15	159			
	18.04.2005 00:30		18.06.2005 00:30	158			
	18.04.2005 00:45 18.04.2005 01:00		18.06.2005 00:45 18.06.2005 01:00	158 158			

Query with 1 time stamp	Inputs:				
Query with I time stamp					
	1-n data points (d_, e_, a_)				
	Start parameters:				
	none				
	Result:				
	The connected operating data points transfer all measured values of the query period from the database to Excel. The time stamp is displayed only once. A gap will develop if a value is missing for a time stamp.				
	E         E         E           Image: Second state s				
Query with 1 time stamp,	Inputs:				
transposed	1-n data points (d_, e_, a_)				
	Start parameters:				
	none				
	Result:				
	The connected operating data points transfer all measured values of the query period from the database to Excel. The time stamp is displayed only once. A gap will develop if a value is miss-				
	ing for a time stamp.				
	time 18.04.2005 00:15 18.04.2005 00:30 18.04.2005 00:45				
	d A E V 117a 170 167 168				
	d A E V 116a 159 158 158				

Query with 2 time	Inputs:						
stamps (From/To)	1-n data points (d_, e_, a_)						
	Start parameters:						
	none						
	Result:						
			<b>6</b>				
	The connected operating data points transfer all measured values of the query period from the database to Excel. The time stamp is displayed only once. A gap will develop if a value is missing for a time stamp.						
			.E_V_117a	.E_V_116a			
	3		u ≺	∎ ≺			
	from	e	- B	- D			
	18.04.2005 00:00	18.04.2005 00:15	170	159			
	18.04.2005 00:15	18.04.2005 00:30	167	158			
	18.04.2005 00:30	18.04.2005 00:45	168	158			
	18.04.2005 00:45 18.04.2005 01:00 167 158						
		E_EINHEIT parameter unit. (0 = unit output o			pecify whether to enable or enabled)		
Query with status	Inputs:						
	1-n data points (d_, e	e_, a_)					
	Start parameters:						
	-						
	none						
	Result:						
			fer all measi	ured values	of the query period, including		
	The connected opera the status, from the c	latabase to Excel.		ured values	of the query period, including		
	The connected operation		fer all measu	ured values	of the query period, including		
	The connected opera the status, from the c	database to Excel.	d_A_E_V_116a	ured values	of the query period, including		
	The connected operative status, from the connected operative status, from the connected operative status are s	atabase to Excel.	d_A_E_<_116a		of the query period, including		
	The connected opera the status, from the o	tatabase to Excel.	в 118 158 158	0	of the query period, including		

Inputs:
1n equipment variables or data points
Equipment variables link equipment with a data point that contains the measured values.
Milchpasteur_Batchinfo         Milchpasteur_Abfrage_Batch         Durchfluss Eintrit         Durchfluss Eintrit         Durchfluss Austritt         Differenzdruck         Temp nach Erhitzer         Temp nach Heisshalter         Temp nach Kühler         Milchpasteur_Ad-Hoc         Milchpasteur_Tag         Start parameters:
Batch selection; optional



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Conditional calculation of	Inputs:
derived measurements	1 measuring variable of function type "Gap check" (m_)
	1n derived data points (a_)
	Start parameters:
	none
	Result:
	The module evaluates the result of the measuring variable of function type "gap check". If the result = 0, the module deletes the series of measurements for the specified query period. If the result = 1, the module deletes the derived data point for the specified query period.
Batch alarms	Inputs:
	1n equipment objects, which may also be stored in a tree structure. In this case, the tree struc- ture is scanned for equipment entries during calculation of the evaluation data.
	Start parameters:
	Batch selection; optional
	Result:
	Outputs information, for example, related to alarm, warning, or error messages that are assigned to the selected batches. The batches can be selected explicitly in a dialog at the start of evaluation. If this specification is missing, the batches will be selected based on the evaluation query period. The selection may also be restricted based on the connected equipment.
	Alarm         geht         quittient         Text         Variable           18: 12:2008 15:49:36 66: 18: 12:2008 16:17:05 68: UNTERTEMPERATUR         MEMOGR_IMPAMELD
	AS_Lettrachnik-Moldunge         geht         quittlert         Text         Variable           Kommit         geht         quittlert         Text         Variable           18.12.2008 13:58:25.55.13.12.2008 13:58:25.73.18.12.2008 14:03.49.2721 Überwachungsfehler         WEG_PROD/FERT_WE           18.12.2008 14:07.47.65.2         Überwachungsfehler         WEG_PROD/FERT_WE           18.12.2008 15:49:09.66(18.12.2008 15:50.51.66(18.12.008 16:17:04.734.101.and/         WEG_PROD/FERT_WE
	Beritissmelang geht quittier Text Variable Kommt Uniter Variable Uniter State PhOPULUS Variable 16.12.2008 15.45:16.26.18.12.2008 15.45:57.56C UNITERTEMP.PROFUNG MEMOORT_IMPANELD Status-Mediang Uniter State Sta
	Normating         own/t         qualifier         Twet         Variable           18 12:2008 15:25:15 815         Luich         MLICHPAST_PUMPFE           18:12:2008 15:37:53:55         Beendet         MLCHPAST_PUMPFE
	The following shows an example of message output.

Batch info	Inputs:										
	1n equipment objects or equipm	ent variables									
	Start parameters:										
	Batch selection; optional										
	Result:										
		ad batabaa. The bata	haa aan ha	alastad avalisity in a	dialaa						
	Returns information on the select at the start of evaluation. If this sp the evaluation query period. The ment or equipment variables.	pecification is missing	, the batche	s will be selected base	ed on						
	19										
	20 Batchinformationer	1:									
	21 Chargennummer		5033699	)1							
	22 Chargenname	MP_Milchl_									
	23 Startzeit	24.06	.2008 07:0	3							
	24 Endzeit	24.06	.2008 10:3	2							
	25 Quelle	MP									
	26 Ziel	Milchl									
	30 Status Batch	Fertig									
		reng									
	Example of batchinfo output										
Batchinfo transposed	Similar to the Batchinfo module, v right in ascending order, but from		at the result o	lata is not output from	left to						
Balance batch	Inputs:	·									
	1n measuring variables										
	⊡ 🛐 Report										
	🖃 👑 Report_Batch_Bilanz										
	⊞∾ <mark>⊡</mark> m_dairy_avg ⊞∾ <mark>⊡</mark> m_dairy_min										
	Start parameters:										
	Batch selection; optional										
	Result:										
	Outputs information pertaining to selected batches and to results of the connected measuring										
	variables. The measuring variables are calculated over a time period that is defined by the start and end time of the respective batch. The batches can be selected explicitly in a dialog at the										
	start of evaluation. If this specification is missing, the batches will be selected based on the										
	evaluation query period. Importar										
	target definition. The measuring										
	represent the same equipment. T	•	cted in the n	nevas must be assign	ed an						
	equipment object using an equip	nent variable.									
	Batch Bilanz				_						
		_									
	Anlage Chargennu Chargenzeitraum	Dauer	m_add m_avg	m_avg_03							
	Anlage Chargennu Chargenzeitraum von bis	hh:mm:ss									
	Anlage         Chargennu         Chargenzeitraum           von         bls           T1202         2853377         16.03.2007         16:04         16	.03.2007 16:24 00:20:09	128 64	Anlage/Datenpunkt nicht z	•						
	Anlage Chargennu Chargenzeitraum von bis	.03.2007 16:24 00:20:09	128 64		•						

Protocol batch	Inputs:									
	1n measuring variables									
	i⊟ IS Report i∃ IS Report_Batch_Protoka i∃ II m_dairy_add i∃ II m_dairy_avg i∃ II m_dairy_avg i∃ II m_dairy_min	oll								
	Start parameters:									
	Interval									
	Batch selection; optional									
	Result:									
	selected explicitly in a dia es will be selected based an equipment object by r ed if all connected data p	the start and end time of alog at the start of evalua d on the evaluation query neans of target definition. points represent the same signed to an equipment of	tion. If this specificatior period. Important: All b . The measuring variab e equipment. The data	n is missing, the batch batches are assigned le tree is only calculat points connected to th						
	Protokoll Batch									
	Chargennummer		Chargennummer	2855681						
	Start	16.03.2007 16:04		16.03.2007 17:22						
	Ende	16.03.2007 16:24		16.03.2007 17:32						
	Anlage	T1202	Anlage	T1202						
	Me∨a	m_diary_a∨g_02	Meva	m_diary_avg_02						
	Zeitstempel	Wert	Zeitstempel	Wert						
	16.03.2007 16:09:48	0		0						
	16.03.2007 16:14:48		16.03.2007 17:32	69						
		16.03.2007 16:19:48 64								
	16.03.2007 16:24:48	0								
	16.03.2007 16:24:57	0								
	Purple values indicate the	at gone oviet in the time e	ets of the data points i	n the measuring varia						

r										
Quantity balance, PCS7 user archive	Inputs:									
user archive		s may be applied								
	BATCH SOURCE: Restricts the batches with regard to the source. BATCH DESTINATION: Restricts the batches with regard to the target.									
	BATCH DE	STINATION: Re	estricts the datc	nes with reg	gard to the target.					
	🚰 Eigenscha	ft von Berichts Modul ·	Report_Mengenbilar	nz_PCS7_Userar	rchive 💶 📼 🗙					
	Name:	Report_Me	ngenbilanz_PCS7	_Userarchive						
	Beschreib	oung:			<b>•</b>					
	Autoritäts	ebene:	0 ≎	Die Autoritä	ätsebene an die Kinder vererben					
	Eigensch	aften:								
	Name		Wert		Neu					
	BATCH Q		T1301, 456		🥜 Bearbeiten					
	BATCH Z	EL	T1203, 899		× Löschen					
		V OK	App	ly	X Abbruch					
	Start paran	notoro.								
	Start paran	neters.								
	Result:									
		oatch data quant	itv balance that	is arouped	based on the material. The batches are					
	selected ad				d the total quantities are calculated in the					
	last step.									
		samtbilan								
	21 Mate		Menge							
	22 Biom		2	7.840,00						
	23 HKT	KT_Milch 13.320,00								
	24 Silon	nilch	19	0.440,00						
	25 ZZU	Milch	3	6.260,00						
	26 <b>Sum</b>	me	26	7.860,00						
	27									

Quantity balance details,	Inputs:										
PCS7 user archive											
	Restrictions may be applied by corresponding property settings.										
	BATCH SOURC	CE Restricts	the hat	ches with regard t	o the source						
				-							
	BAICH DESTIN	VATION: Res	tricts th	e batches with reg	gard to the targ	et.					
	BATCH GROUP	P: Specifies w	/hether	to sort by target o	or source.						
		-				The default of	rdorio				
			GET a	nd SOURCE prop	enties are valid	. The default of	der is				
	based on the ta	rget.									
	Eigenschaft von	Berichts Modul - R	eport_Me	ngenbilanz_Detail_PCS7		- = X					
	Name:	Report Mena	enhilanz	: Detail PCS7							
		Tropon_mong									
	Beschreibung:					<b>≜</b>					
						-					
	Autoritätsebene	E.		🖸 🤤 📃 Die Autorit	ätsebene an die Ki	nder vererben					
	Eigenschaften:										
	Name		We	rt	📀 Ne	eu					
	BATCH GROUP		ZIEL	-		earbeiten					
	BATCH QUELLE		T13	01	<b>y</b> De	sarbeiten					
	BATCH ZIEL										
		🗸 ОК		Apply	🗙 Abbruch						
				. 4-1-12							
	Start parameter	S:									
	none										
	Result:										
	Outputs a detail	ed batch data	a quant	ity balance that is	grouped based	d on the materia	al and				
	equipment. The	batches are	selecte	d across the quer	y period of the	evaluation and	total quanti-				
	ties are calculat	ed in the last	step.								
			•								
	Detaildaten:										
	Material Biomilch										
	Quelle Ziel T1301 T1202	Chargennummer 11606785	Menge 5.650,00	Startzeit         Endzeit           26.01.2009 08:19:02         26.01.2009 08:	22						
	T1301 T1202	11608321	2.740,00	26.01.2009 09:14:20 26.01.2009 09:	21						
	T1301 T1202 T1301 T1202	11611649 11612417	4.140,00 10.280,00	26.01.2009 11:28:27 26.01.2009 11: 26.01.2009 12:04:11 26.01.2009 12:							
	T1301 T1202	11616769	5.030,00	26.01.2009 17:16:46 26.01.2009 17:							
	T1202	Summe:	27.840,00								
	_ <mark>Biomilch</mark> :	Summe:	27.840,00								
	Material HKT_Milch										
	Quelle Ziel	Chargennummer	Menge	Startzeit Endzeit							
	T1002 T1201	11603201 11603713	2.800,00 2.540,00	26.01.2009 03:50:33 26.01.2009 03: 26.01.2009 04:08:08 26.01.2009 04:							
	T1002 T1201	11611393	6.420,00	26.01.2009 11:23:57 26.01.2009 15:	20						
		11617025	1 500 00	26.01.2009 17:24:35 26.01.2009 17:	30						
	T1002 T1201	Summe:	1.560,00	20.01.2003 11.24.00 20.01.2003 11.							

B/L KISS-A Infracor	Inputs:											
	1n measuring varia	bles (m	)									
	Start parameters:		/									
	none											
	Result:											
		nacial m	adula far	Infragor	A a a a b i a		t may exist for each day, the					
	module cancels all o a user attempts to co report of a specific d ed by the count of or not need to specify a interval of 15 minute the measuring varial each one, with nega and a positive value for all measuring var marks will be lost if y first spreadsheet out only contains the ge	perations reate a se ay. A rep ne whene an interva s. You ca bles are I tive retur as delive riables. Y you reload puts the nerated f	s and ent econd rep ort version ever data al, as the an conner oad profil n value fr ery figure. ou can er d the rep entire rep ile name.	ers a com port for the on is gene has char module c ct any nu les. The s rom the m . Along w nter rema ort. The r port as mo	respondir e same c erated in nged or if alculates mber of r supply an neasuring ith these arks in the eport is c entioned name co	ng error n lay. You the first r the repo the data neasuring d deliver variable figures, t e comme output to t above, w nsists of	nessage in the error journal if can always recalculate the ow. This version is increment- rt was recalculated. You do based on a permanently set g variables. It is assumed that y figures are calculated for being rated as supply figure he electrical work is calculated nt area. Caution! These re- wo Excel spreadsheets. The thile the second spreadsheet the following elements: the module, as well as the current					
							-					
	Kommentarbereich	Version	1 Bezug	1 Lieferung		1 Lieferuna	-					
	Kommentarbereich		Dezug		Dezug							
	Arbeit	[MVVh]	10678,75	0	10525,5	0						
	von	bis	MW h	MWh	MWh	MW h						
		00:15:00					1					
	00:15:00	00:30:00										
	00:45:00	01:00:00	167	0	158	0						
	01:00:00	01:15:00	167	0	158	0						
User rights changes	Inputs:											
	none											
	Start parameters:											
	none											
	Result:											
	The report outputs a	ll change	s to user	rights ma	ade in the	e query p	eriod.					
	Changed user rights											
	Changed passwords	6										
	User rights added											
	User rights removed											
	User inserted into gr											
	User removed from	•										
			put with t	time stam	np. includ	ing a des	cription and the user name.					

Balance	Inputs:									
	1-n measuring variables (m_)									
	Start parameters:									
	none									
	Result									
	The measuring variable is calculated across the entire observation period of the report.									
	m_Supply_1_sumR         kWh         42715           m_Supply_2_sumR         kWh         42102									
	You set the BILA_HEADER parameter in B.Data Options to specify whether or not to insert a header. (1 = header is shown, 0 = header is hidden)									
Balance with time stamp	Inputs:									
	1-n measuring variables (m_)									
	Note: Only the minimum or maximum function type									
	Start parameters:									
	none									
	Result:									
	The measuring variable is calculated across the entire observation period of the report. Mini- mum or maximum values are returned with time stamp.									
	m_Supply_1_max 18.04.2005 07:15 kWh 42.715									
	m_Supply_2_max 18.04.2005 06:30 KWh 42.102									
	You set the BILA_TS_HEADER parameter in B.Data Options to specify whether or not to insert a header. (1 = header is shown, 0 = header is hidden)									
balance since new year	Inputs:									
	1-n measuring variables (m_)									
	Start parameters:									
	none									
	Result:									
	The measuring variable is calculated starting at the "new year" and ends with the end of the									
	query period.									
	Example: Monthly report Apr. 2008; calculates the period from Jan. 01, 2008 to May 01, 2008.									
	since beginning of t									
	m_Supply_1_sumR KWh 598.000									
	m_Supply_2_sumR									
Balance comparing	Inputs:									
	1-n measuring variables (m_)									
	Start parameters:									
	none									
	Result:									
	The measuring variable is calculated across the entire observation period of the report. Moreover, the last period or the same period of the previous year is calculated and reported.									
	Example: Monthly report Apr. 2008; the report covers April 2008, March 2008, and April 2007.									
	MEVA         Unit         act. Period         last period         comp. last year           m_Supply_1_sumR         KWh         42.715         13.123         25.255           m_Supply_1_sumR         KWh         42.715         13.123         25.255									
	m_Supply_2_sumR KWh 42.102 12.143 23.545									
	<b>CAUTION:</b> Only the Month, Month+6h, Day, and Day+6h periods are supported as query type.									

Balance comparing SNY	Inputs:									
Balance comparing orth	-	urin	g variables (r	m )						
				II_ <i>)</i>						
	-	Start parameters:								
	none									
	Result:									
			ig variable is iod, as well a					e "new year" and ending with ear.		
			nthly report A as the period					n. 01, 2008 until May 01,		
	m_Supply m_Supply			/h	63	eqinnicom; 3,734 7,029	are last yea 598,000 620,250			
Batch-related balancing	Innuto									
Datch-related balancing	Inputs:	tion	of a data poi	at and 1 n m	opeurin	a variable	s (m.)			
			-			-	3 (III_)			
	This com	ibina	tion can be r	epeated as o	men as	need be.				
		Batch_balance_Module <p< td=""></p<>								
	Start par	ame	ters:							
	None									
	Result:									
	The data points contain the batch numbers as consecutive time set. A change to this number indicates that a new batch has started. The batches are sorted and output chronologically for the query period, including their start time, end time, and duration. The measuring variables connected behind the data point are calculated once for each determined batch period and once for the query period that is specified at the start of the report. Calculation starts with the first data point/measuring variable combination and continues with the next combination, inasmuch as a next one exists. It is assumed that the batch numbers are saved at cyclic intervals to the data point.									
					Duration	0	- Jolada Dd			
	Production Batch Batch period Duration m_Costs_P1 m_Work_P1 (Batch period (Batch period									
			from	to	hh:mm:ss		(Batch penou) MWh			
	Press 1		2006-05-01-00:15							
			2006-05-11 18:00				3220			
		4711	2006-05-14 10:30	2006-05-18-01:00	86:30:00	3470	6940			
		4799	2006-05-18-01:15	2006-06-01-00:00	334:45:00	13400	26800			
	Press 2		2006-05-01-00:15							
			2006-05-12 12:15							
		9011	2006-05-13 13:15	2006-06-01 00:00	442:45:00	70880	88600			

Batch-related balancing,	Inputs:
spontaneous	Combination of a data point and 1-n measuring variables (m_)
	This combination can be repeated as often as need be.
	Start parameters:
	None
	Result:
	This module works similar to the "Batch-related balancing" module mentioned above, the only difference being that the batch numbers are not saved at cyclic intervals, but rather spontaneously. Spontaneous means as immediate reaction to changes, i.e. a batch number entry marks the start of a new and the end of the previous batch.
Batch-related balancing	Inputs:
T1	Combination of a data point and 1-n measuring variables (m_)
	This combination can be repeated as often as need be.
	Batch_related_balance_T1 d_Press1_T1 d_Press1_T1 d_Press2_T1 d_Press2_T1 d_Press2_T1 d_Press2_T1 d_Press2_T1 d_Press3_spontan d_Press4_spontan d_Press4_spontan d_Press4_spontan
	Start parameters:
	None

Result:										
above. However, cated by mean has been power are calculated point structure points with cyclo contain cyclic	rer, ns c ere bas are clic or s	instead of a binar d up for a sed on th e calcula or sponta spontane	of the ba y signal a specif nis inform ted base aneous ous dat	atch nur (0/1). A ic durati mation. ed on th time sec a has to	nber bei sequer on. The The mea ese time quences be conf	ng stor ace of c switch asuring es. You at this igured.	ed in the ones, for on and s variable can set module. In the "F	cing" module n data point, the example, mear switch-off times s connected be up any combin Whether a dat function" field, pontaneous" se	batch s that and de ehind th ation o a point specify	is indi- a press urations ne data f data is to
😡 Measurement - d_Pr	ess1_	Ţ1							_ ×	
Name: d_P	ress1	_T1								
Description:									<b></b>	
									-	
InventoryNo: NO	_KKS									
Process: a_p	roc_(	DPC_15s		- A	ctive	Creation D	)ate: 6/8/2	2009 10:23:09 AM 👻		
Unit: -				•	DG to DB	Valid from	6/8/2	2009 10:23:09 AM 🚽		
Ident. Token:					ernel	Valid until:	1/1/2	2500 12:00:00 AM 💌		
Function: Eve	ntme	asurement T1	spontaneo	•		Last chang	ged by: BDA	TA_SYS		
Production line	Nr			duration	kCosts F	k\\/\ork	kPower F			
		from	to	hh:mm		MWh	MW			
Press 1 T1	1	00:01	00:16	00:15	20	40	60	ו		
	2		04:31	00:15	20	40		-		
	3		12:46	02:00	90	180		-		
	4		20:31 01:16	05:30	230 80	460 160		-		
Press 1 T1	5 6		03:01	01.45	80	100				
	7	06:46	08:31	01:45	320	400				
	8		15:46	01:45	320	400	480	ו		
d_Press3_spor	9	04:31	04:32	00:01	10					
	10		12:46	01:45	80			_		
	11	15:16	20:31	05:15	220			_		
	12		01:16	01:30	70			_		
kPress4_spont			04:01	00:30	30			-		
	14 15		08:31	01:30	70 70			-		
	10	14.10	15.40	01.30	70					

Duration curve	Inputs:
	1-n measuring variables (m_)
	Start parameters:
	Interval, e.g. 3
	Unit: e.g. h
	Result:
	At a query period of one day and three hour interval, the duration curve module returns eight values (in a 3 h pattern) (sorted protocol). The meva is calculated during the interval and sorted accordingly.
	m_Supply_1_sumR m_Supply_2_sumR
	3 h 6,867 6,681
	6 h 6,761 6,519
	9 h 6,442 6,256
	12 h 6,244 6,253
	15 h 6,084 6,199
	18 h 4,623 4,704
	21 h 3,671 3,586
	24 h 2,023 1,904
	You set the MODULE_EINHEIT parameter in B.Data Options to specify whether to enable or disable output of the unit. (0 = unit output disabled, 1 = unit output enabled)

Duration curve sorted	Inputs:							
	2-n measuring variables (m_) Start parameters:							
	Unit: e.g. h							
	Result:							
	At a query period of one day and three hour interval, the duration curve module returns eight values (in a 3 h pattern). The values of the first MEVA are output sorted in descending order and the remaining MEVAs are sorted following the first MEVA.							
	Wins       Wins         Videns       Videns         Vid							
	24 h 2,023 6,256							
DB statistics	Inputs:							
	none Start parameters:							
	Start parameters:							
	Result:							
Desumentation of "	The following table provides an overview of database storage allocation.							
Documentation of all operating data points	Inputs:							
	none							
	Start parameters:							
	none							
	Result:							
	All operating data points created in the system are listed, including their attributes.							

Properties	Inputs:						
	1n property type						
	1n objects to be evaluated						
	Image: Second state         Image: Second st						
	Start parameters:						
	none						
	Result:						
	A matrix consisting of the property types and objects is set up. The objects are listed vertically from top to bottom, while the property types are listed horizontally from left to right.						
	ENERGY PURCHASEFEE G / VMI-ARE         OWNER           a_SI_WED_h_WA1_total         EST         Edersee 7         EWK           d_SR_WED_h_WA1_E.ON         Landshut         RWE         a         SR_WED_d_WA1         EST         Edersee 7         EWK						
Energy efficiency meas- ure	Inputs: 1n filtered overview objects						
	Energieeffizienz     Filter für Strom     Energieeffizienz     Filter für Strom     Filter für Strom     Filter für Strom     Filter für Strom     Energieeffizienzmaßnahme für Strom_Energieeffizienzmassnahme     Energieeffizienzmaßnahme für Strom_Ad-Hoc						
	Start parameters:						
	none						
	Result:						
	The module outputs all data of the energy efficiency measures that is filtered in an overview object.						

Energy apportionment	Inputs:							
V2	Data point that represents the loss factor							
	Meva that represents total power input to the buildings							
	Parameters with su	•	•	•	centers			
	□- Ĩ͡͡͡͡s _30_Cons_Build	ing_08_Apportionmer	nt					
	Start parameters:							
	none							
	Result:							
	tor). The product of	f this calculation	is allocated	in accordance	d by the data point value (loss fac- e with cost center factors (parame- nnected to the parameter node.			
	correction factor	1.2			]			
	Counter sum Counter sum corrected	2,497,128.0						
			ENEO0 4450	0				
	30 60 10	898,966.1 t_H8 1,797,932.2 t_H8 299,655.4 t_H8		Costcenter 03 Costcenter 11 CostCenter 14				
	It is verified that the parameter values total 100 % before the allocation is initiated. If this is not the total, the parameter values will be adjusted accordingly to a total of 100 %.							
	If the substitute parameter <>0, this cost center is only allocated the percentage that is defined in the replacement value parameter. It is therefore not necessary to adjust this parameter.							
Acquisition control	Inputs:							
	Acquisition comput	er						
	Start parameters:							
	none							
	Result:							
	The list contains all active measurements of the connected acquisition computer.							
	The list includes the name, the number of measured values acquired in the observation period, as well as the parameterized cycle time. If no cycle time was parameterized, it is determined							
	based on the data contained in the measurement journal (last time stamp of the monitoring							
	period). If this is no							
	Name der Messung	Anzahl Messwert	e Zykluszeit	]				
	d_Testdatenpunkt1	96	900					
	d_Testdatenpunkt2	80	900					
	d_Testdatenpunkt3	96	900	_				
	a_Datenpunkt1	1440	60					

B/L KISS-A Infracor	Inputs:								
monthly schedule	1 measuring	1 measuring variable (m_)							
	Start paramet	Start parameters:							
	Interval, e.g.	15							
	Unit: e.g. min								
	Result:								
	The connecte	d measurin	a variable is	s calculated	based on a	a 15-minute pattern.			
	Positive value		-						
	Negative value								
	-					entered in the first three columns.			
	The unit is fet				estamp are				
		from	to	kWh	kwh				
	18.04.2005	00:00:00							
	18.04.2005	00:15:00	00:30:00	167	0				
	18.04.2005	00:30:00							
	18.04.2005	00:45:00	01:00:00	167	0				
Schedule protocol F	Inputs:								
	1 measuring	variable (m_	)						
	Start paramet	ers:							
	Interval, e.g.	15							
	Unit: e.g. min								
	Result:								
		to a protoc	ol module v	with the exc	ention that	only one measuring variable may be			
						rom, to - as shown in the Excel			
	table.	·	-	-	-				
	Day	from	to	kv/h					
	18.04.2005	00:00	00:15	170					
	18.04.2005	00:15	00:30	167					
	18.04.2005	00:30	00:45	168					
	18.04.2005	00:45	01:00	167					
	18.04.2005	01:00		167					
	18.04.2005	01:15	01:30	168					

Schedule Target/Actual	Inputs							
	4 measuring variables (m_)							
	TProtSched_PlanedActual TProtSched_PlanedActual_Module d_prognosis_needed d_orgonosis_needed d_adaption m_adaption m_morofile_schedule Schedule01 d_actualvalue d_actualvalue							
	Start parameters	:						
	none							
	Result:							
	The function mus profile value, actu measuring variab offset between th absolute value ar	ual value. One ho les are output in e actual value ar	our is set separate nd the for	perman columr	ently as ns next t	the inter the tim	val. The e stamps	results of the four s (from/to). The
	Date		Prognosis	Adaptio	Schedule	Actual∨a	Diff	
	from	to	[MW]		[MW]	[MW]	[MW]	
	21.02.2008 00:00	21.02.2008 01:00	121,5		0	131,5	· ·	
	21.02.2008 01:00	21.02.2008 02:00	125,5		0	135,5		
	21.02.2008 02:00	21.02.2008 03:00	129,5	2	0	139,5	-8	
	21.02.2008 03:00	21.02.2008 04:00	133,5	2	0	143,5	-8	
	21.02.2008 04:00	21.02.2008 05:00	137,5	2	0	147,5	-8	
	21.02.2008 05:00	21.02.2008 06:00	141,5	2	0	151,5		
	21.02.2008 06:00	21.02.2008 07:00	145,5	2	2	155,5		
	21.02.2008 07:00	21.02.2008 08:00	149,5	2	2	159,5	-8	
Gas schedule	Inputs:							
	1 measuring varia	able (m_)						
	Start parameters	:						
	Interval, e.g. 15							
	Unit: e.g. min							
	-							
	Result:							
								e values are totaled
	if the value is pos							entered in column 3 in 4.
		KVVh 00:00 672 00:00 673		0				
		0:00 678		0				
	3:00:00 4:0	00:00 643 00:00 1270		0 0				

Daily temperature figures	Inputs:					
	1 data point (d_, e_, a_) that represents the outdoor temperature.					
	Start parameters:					
	none					
	Result:					
	The connected data point is used to calculate the daily average. The daily temperature figure is calculated as follows:					
	Daily average of the outdoor temperature TA					
	DTf = (20° - TA) if TA < 15°					
	DTf = 0 if TA ≥ 15°					
	Monthly value: Total of daily values					
	Query period 1 month					
	Interval 1 day.					
	Day d_temp					
	1/1/1998 13.1					
	1/2/1998 12					
	1/3/1998 11.9					
	1/4/1998 13.7					
	1/5/1998 13.1					
	1/6/1998 12.7					
	Query period 1 year					
	Interval: 1 month					
	month d_temp					
	January 503					
	February 390					
	March 401					
	April 298					
	May 115					
	June 36					
Boundary values	Inputs:					
,	1-n data points (d_, e_, a_)					
	Start parameters:					
	Upper limit: e.g. 100					
	Lower limit: e.g. 10					
	Result:					
	The module returns the time stamps in which the value was below the lower limit or above the upper limit. Along with the value, the duration of such states will be output. The duration is in-					
	creased if the value does not change across periods.					
	lower limit (10) of d_A_E_V_117a           4/18/2005 5:00         3         15         4/18/2005 7:45         532         15           4/18/2005 5:30         2         15         4/18/2005 11:30         574         15					
	4/18/2005 7:00 3 15 4/18/2005 11:45 577 15					

Load profile analysis	Inputs:									
module type	1 measuring variable (m_)									
	1 profile or master profile									
	Analyse_W1	Analyse_W1_50     Analyse_W1_50_Analyse     m_mmCompleteprofile     BMW Baseloadprofile W1.10     m_mAnalyse_W1_50_Ad-Hoc								
	Start parameters:	Start parameters:								
	Interval, e.g. 15									
	Unit: e.g. min									
	Result:									
	to enable calculati module to analyze hour) is output for (for example, for the these are not holic	The forecast load profile is considerably dependent on the typical days. This module is provided to enable calculation of the time set of a past period. You can use the load profile analysis module to analyze any time frame. As a result, the performance value per period (15-minute or hour) is output for all typical days in the evaluation period. If the analysis covers a yearly range (for example, for the typical day Monday), all Mondays will be used for calculations, provided these are not holidays or special days. In a year with 48 Mondays, for example, the mean value is calculated for the time window from 00:00 h to 01:00 h for all Mondays and output as result.								
		A measuring variable that prepares the data point to be analyzed must be connected directly under the module node.								
	You must also connect the profile that defines the typical days. You can also use a master profile for this purpose.									
	Corrupted values are ignored in the analysis. The parameter BDATA_LASTPRF_QS = 0 must be set in the B.Data Options if corrupted values are to be included. BDATA_LASTPRF_QS = 1 means that corrupted values are ignored.									
	The module provid	The module provides the corresponding result in the following form:								
	Calculation	Profiles	From	То						
		ProfWinter	01.04.2006	01.10.2006						
		ProfSummer	01.10.2006	01.04.2007						
	Reference object	MasterProfile	m_OverallProfile	m_OverallProfile						
	Profiles		ProfSummer	ProfWinter	ProfSummer, ProfWinter					
	Number of values		169	173	23					
	Time		TDSummer	TDWinter	TDHoliday					
	00:00	01:00	8.36	8.80875	9.36					
	01:00	02:00	8.425	8.7625	9.425					
	02:00	03:00	8.25875	8.72	9.25875					
Load profile analysis	03:00	04:00	8.225	8.94125	9.225					
module type (continued	) 04:00	05:00	8.1975	9.041875	9.1975					
	05:00	06:00	8.21625	9.34625	8.21625					
	06:00	07:00	8.31625	11.44188	8.31625					
	07:00	08:00	8.38375	13.48125	8.38375					
	08:00	09:00	8.4525	14.445	8.4525					
	09:00	10:00	8.45375	14.6775	8.45375					

	11:00	12:00	8.49	14.87188	8.49		
	12:00	13:00	8.4975	14.84125	8.4975		
	13:00	14:00	8.5525	14.78938	8.5525		
Load profile analysis	14:00	15:00	8.53625	14.59313	8.53625		
module type (continued)	15:00	16:00	8.57875	14.09438	8.57875		
	16:00	17:00	8.58125	13.23375	8.58125		
	17:00	18:00	8.51875	12.5325	8.51875		
	18:00	19:00	8.50125	11.57625	8.50125		
	19:00	20:00	8.445	10.60125	8.445		
	20:00	21:00	8.40125	9.760625	8.40125		
	21:00	22:00	8.34875	9.286875	8.34875		
	22:00	23:00	8.32375	8.953125	8.32375		
	23:00	00:00	8.31375	8.77125	8.31375		
	days used to calculate the typical day. The result is marked in blue color if this value is less than three. Line 4 displays the profiles used as the basis for calculation of the typical days. This line should never contain more than one profile. If it contains several profiles, the text is output in red font. The typical days can be written back to the database. For this purpose, the user must start the report in the second dialog that contains the "Module Start/Stop" heading, i.e. the dialog in which you also enter the interval, and enter the text "save" in the text field (heading = Text:). This text is not case-sensitive.						
LTEXT for the current	Inputs:						
version	1-n data points (d	_, e_, a_)					
	Start parameters:						
	none						
	Result:						
	All text objects of the current version are read for the connected data points and displayed with time stamp.						
		d_StringDatapoin 00 Machine 4 fallen ( 00 Turbinerevision					

ayed with s the value					
for all con- um state.					
1-n derived data points (a_) Start parameters:					
none					
Result:					
d to Excel.					
Inputs: 1 measuring variable (m_)					
Start parameters:					
Interval, e.g. 15 Unit: e.g. min					
Result:					
The module outputs a FROM and a TO time stamp. This module is designed for use in daily reports, which is why the date is not displayed. The result is entered in column 3 if the meva value is positive. If the value is negative, the result is entered in column 4.					

Schedule module KiSS A	Inputs:						
	1n measuring variables (m_)						
	Start parameters:						
	Interval, e.g. 15						
	Unit: e.g. min						
	Result:						
	he module outputs a FROM and a TO time stamp. This module is designed for use in daily eports, which is why the date is not displayed.						
	from         to         MW         MW           0:00         0:15         1560.00         0.00           0:15         0:30         1565.00         0.00           0:30         0:45         1570.00         0.00           0:45         1:00         1575.00         0.00						
Module info	Inputs:						
	none Start parameters:						
	none						
	Result:						
	The following information is output for the connected modules.						
	ModuleName Start Stop MaxDate Interval Unit LowerLimit UpperLimit Text						

nMaxima	Inputs:									
	imum values of a data	<ol> <li>parameter (t_). This parameter is optional. Use this parameter to specify the number of maximum values of a data point to be calculated. If you do not specify this parameter, five maximum values of a data point will be calculated.</li> <li>n data points (d_, e_, a_)</li> <li>Start parameters:</li> </ol>								
	1n data points (d_, e									
	Start parameters:									
	none									
	Result:									
	The module calculate	o the requi	rad number of maxim			ata naint f	or the ene	oified		
	query period. The mo						or the spe	cineu		
	<ul> <li>12 measured valu</li> </ul>	es that are	available before a m	aximu	m measure	d value				
	<ul> <li>11 measured valu</li> </ul>	es that are	available after a max	kimum	measured	value				
	The module outputs t						respectiv	/e		
	query period. The mo									
	query period is a max							-		
	Detennunlet	o NULL01								
	Datenpunkt Zeit	e_NULL01 Wert	Zeit	Wert	Zoit		Wert			
	04.03.2007 20:45:00		04.03.2007 20:30:00		04.03.2007	20:15:00	80			
	04.03.2007 20.43.00		04.03.2007 20:45:00		04.03.2007		81			
	04.03.2007 21:15:00		04.03.2007 21:00:00		04.03.2007		82			
	04.03.2007 21:30:00		04.03.2007 21:15:00		04.03.2007		83			
	04.03.2007 21:45:00		04.03.2007 21:30:00		04.03.2007		84			
	04.03.2007 22:00:00		04.03.2007 21:45:00		04.03.2007		85			
	04.03.2007 22:15:00		04.03.2007 22:00:00		04.03.2007		86			
	04.03.2007 22:30:00		04.03.2007 22:15:00		04.03.2007		87			
	04.03.2007 22:45:00		04.03.2007 22:30:00		04.03.2007		88			
	04.03.2007 23:00:00		04.03.2007 22:45:00		04.03.2007		89			
	04.03.007 23:15:00		04.03.2007 23:00:00		04.03.2007		90			
	04.03.2007 23:30:00		04.03.2007 23:15:00		04.03.2007		91			
	04.03.2007 23:45:00	94	04.03.2007 23:30:00		04.03.2007		92			
	05.03.2007	1	04.03.2007 23:45:00	94	04.03.2007	23:30:00	93			
Validation deviation reference dp	Inputs: 1 data point (d_, e_, a	a_) as refer	ence point							
	1n data points (de	1n data points (d_, e_, a_ )								
	none	Start parameters:								
	Result:									
	name of data point referer	nce data poiıti	mestamp allowed ac	tual-abe	erration					
	d_A_E_V_116a d_A_E	_V_117a	4/30/2005 23:30 100	alı a	-219					
			4/30/2005 23:45   100 Lü	ске						

Validation gap	Inputs: 0-n data points (d_, e_, a_)						
	If data points are con	nected, they must be a	ctive.				
	•	connected, all data poir		ustem will be	e checked		
	-				o onconco.		
	Start parameters:						
	none						
	Result:						
	number of reference r	number of actual					
	672	0					
	672	0					
	672	0					
Validation max. increase	Inputs:						
	0-n data points (d_, e	_, a_)					
	If data points are con	nected, they must be a	ctive.				
	If no data points are connected, all data points in the system will be checked. Start parameters:						
	none						
	Result:						
	name of data point	tim esta mp	allowed a	ctual-rise			
	name of data point d_A_E_V_116a	<b>tim esta mp</b> 4/30/2005-23:30		ctual-rise -210			
	d_A_E_V_116a	4/30/2005 23:30 5/1/2005 0:00	20 20	-210 650100			
		4/30/2005 23:30 5/1/2005 0:00 4/30/2005 7:00	20 20 50	-210 650100 55			
	d_A_E_V_116a	4/30/2005 23:30 5/1/2005 0:00 4/30/2005 7:00 4/30/2005 9:30	20 20 50 50	-210 650100 55 69			
	d_A_E_V_116a	4/30/2005 23:30 5/1/2005 0:00 4/30/2005 7:00	20 20 50 50 50	-210 650100 55			
	d_A_E_V_116a	4/30/2005 23:30 5// /2005 0:00 4/30/2005 7:00 4/30/2005 9:30 4/30/2005 10:00	20 20 50 50 50 50 50 50	-210 650100 55 69 -63			
	d_A_E_V_116a	4/30/2005 23:30 5/1/2005 0:00 4/30/2005 7:00 4/30/2005 9:30 4/30/2005 10:00 4/30/2005 13:00 4/30/2005 15:30 4/30/2005 16:00	20 20 50 50 50 50 50 50 50	-210 650100 55 69 -63 73 76 -59			
	d_A_E_V_116a	4/30/2005 23:30 5/1/2005 0:00 4/30/2005 7:00 4/30/2005 9:30 4/30/2005 10:00 4/30/2005 13:00 4/30/2005 15:30 4/30/2005 16:00 4/30/2005 18:00	20 20 50 50 50 50 50 50 50 50	-210 650100 55 69 -63 73 76 -59 52			
	d_A_E_V_116a	4/30/2005 23:30 5/1/2005 0:00 4/30/2005 7:00 4/30/2005 9:30 4/30/2005 10:00 4/30/2005 13:00 4/30/2005 15:30 4/30/2005 16:00	20 20 50 50 50 50 50 50 50 50	-210 650100 55 69 -63 73 76 -59			
Validation Min Max	d_A_E_V_116a	4/30/2005 23:30 5/1/2005 0:00 4/30/2005 7:00 4/30/2005 9:30 4/30/2005 10:00 4/30/2005 13:00 4/30/2005 15:30 4/30/2005 16:00 4/30/2005 18:00	20 20 50 50 50 50 50 50 50 50	-210 650100 55 69 -63 73 76 -59 52			
Validation Min Max	d_A_E_V_116a d_A_E_V_121a	4/30/2005 23:30 5/1/2005 0:00 4/30/2005 7:00 4/30/2005 9:30 4/30/2005 10:00 4/30/2005 15:30 4/30/2005 16:00 4/30/2005 18:00 4/30/2005 18:30	20 20 50 50 50 50 50 50 50 50	-210 650100 55 69 -63 73 76 -59 52			
Validation Min Max	d_A_E_V_116a d_A_E_V_121a Inputs: 0-n data points (d_, e	4/30/2005 23:30 5/1/2005 0:00 4/30/2005 7:00 4/30/2005 9:30 4/30/2005 10:00 4/30/2005 13:00 4/30/2005 16:00 4/30/2005 18:00 4/30/2005 18:30 	20 20 50 50 50 50 50 50 50 50 50	-210 650100 55 69 -63 73 76 -59 52			
Validation Min Max	d_A_E_V_116a d_A_E_V_121a Inputs: 0-n data points (d_, e If data points are con	4/30/2005 23:30 5/1/2005 0:00 4/30/2005 7:00 4/30/2005 9:30 4/30/2005 10:00 4/30/2005 13:00 4/30/2005 15:30 4/30/2005 16:00 4/30/2005 18:30 4/30/2005 18:30	20 20 50 50 50 50 50 50 50 50	-210 650100 55 69 -63 73 73 76 -59 52 -51	e checked.		
Validation Min Max	d_A_E_V_116a d_A_E_V_121a Inputs: 0-n data points (d_, e If data points are con If no data points are con	4/30/2005 23:30 5/1/2005 0:00 4/30/2005 7:00 4/30/2005 9:30 4/30/2005 10:00 4/30/2005 13:00 4/30/2005 16:00 4/30/2005 18:00 4/30/2005 18:30 	20 20 50 50 50 50 50 50 50 50	-210 650100 55 69 -63 73 73 76 -59 52 -51	e checked.		
Validation Min Max	d_A_E_V_116a d_A_E_V_121a Inputs: 0-n data points (d_, e If data points are con If no data points are con Start parameters:	4/30/2005 23:30 5/1/2005 0:00 4/30/2005 7:00 4/30/2005 9:30 4/30/2005 10:00 4/30/2005 13:00 4/30/2005 15:30 4/30/2005 16:00 4/30/2005 18:30 4/30/2005 18:30	20 20 50 50 50 50 50 50 50 50	-210 650100 55 69 -63 73 73 76 -59 52 -51	e checked.		
Validation Min Max	d_A_E_V_116a d_A_E_V_121a Inputs: 0-n data points (d_, e If data points are con If no data points are con If no data points are con Start parameters: none	4/30/2005 23:30 5/1/2005 0:00 4/30/2005 7:00 4/30/2005 9:30 4/30/2005 10:00 4/30/2005 13:00 4/30/2005 15:30 4/30/2005 16:00 4/30/2005 18:30 4/30/2005 18:30	20 20 50 50 50 50 50 50 50 50	-210 650100 55 69 -63 73 73 76 -59 52 -51	e checked.		
Validation Min Max	d_A_E_V_116a d_A_E_V_121a Inputs: 0-n data points (d_, e If data points are con If no data points are con Start parameters:	4/30/2005 23:30 5/1/2005 0:00 4/30/2005 7:00 4/30/2005 9:30 4/30/2005 10:00 4/30/2005 13:00 4/30/2005 15:30 4/30/2005 16:00 4/30/2005 18:30 4/30/2005 18:30	20 20 50 50 50 50 50 50 50 50	-210 650100 55 69 -63 73 73 76 -59 52 -51	e checked.		
Validation Min Max	d_A_E_V_116a d_A_E_V_121a inputs: 0-n data points (d_, e If data points are con If no data points are con Start parameters: none Result: nam* ofdata point im* itamp	<pre>4/30/2005 23:30 5/1/2005 0:00 4/30/2005 7:00 4/30/2005 9:30 4/30/2005 10:00 4/30/2005 15:30 4/30/2005 15:30 4/30/2005 18:30 4/30/2005 18:30 4/30/2005 18:30 4/30/2005 18:30 and and and and and and and and and and</pre>	20 20 50 50 50 50 50 50 50 50 50 50 50	-210 650100 55 69 -63 73 73 76 -59 52 -51	e checked.		
Validation Min Max	d_A_E_V_116a d_A_E_V_121a Inputs: 0-n data points (d_, e If data points are con If no data points are con Start parameters: none Result:	(4/30/2005 23:30 5/1/2005 0:00 4/30/2005 7:00 4/30/2005 9:30 4/30/2005 10:00 4/30/2005 15:30 4/30/2005 16:00 4/30/2005 18:30 4/30/2005 18:30 (4/30/2005 18:30 (4/30/2005 18:30 (4/30/2005 18:30) (4/30/2005 18:30)	20 20 50 50 50 50 50 50 50 50 50 50 50	-210 650100 55 69 -63 73 76 -59 52 -51	e checked.		

Discustibility also als Otatura					
Plausibility check Status not OK	Inputs:				
HOL OK	<ul><li>0-n data points (d_, e_, a_)</li><li>If data points are connected, they must be active.</li><li>If no data points are connected, all data points in the system will be checked.</li></ul>				
	Start parameters:				
	none				
	Result:				
	name of data point timestamp wi/su status not OK				
	d_A_E_V_116a 4/30/2005 23:30 Wi invalid				
Protocol ext Function	Inputs:				
	1-n measuring variables (m_)				
	1-n folders (must be assigned the name of the PL/SQL function)				
	- ITProtExtFunc				
	TProtExtFunc_Module				
	m_actual_value				
	I 🛅 df_root				
	Start parameters:				
	Interval, e.g. 15				
	Unit: e.g. min				
	Result:				
	The connected measuring variables are calculated and displayed exactly as in a protocol mod- ule. It is also possible to calculate and output PL/SQL functions. The names of the PL/SQL functions that exist in the database must be connected as subfolder below the module node. The number of arguments in this function must be equal to the number of connected measuring variables. This means the PL/SQL function must be capable of processing two arguments if two measuring variables are connected. These arguments are always of the data type number. This means that the function can use the measuring variable results for calculations.				
	The following example shows a PL/SQL function that calculates the root of the measuring vari- able result m actualvalue:				
	<pre>create or replace function df_root (arg1 number) return number is begin return sqrt(arg1) end;</pre>				
	time m_actual_value df_root				
	2/21/2008 1:00 131.5 11.467				
	2/21/2008 2:00 135.5 11.640				
	2/21/2008 3:00 139.5 11.811				
	2/21/2008 4:00         143.5         11.979           2/21/2008 5:00         147.5         12.145				
	2/21/2008 6:00 151.5 12:309				
	2/21/2008 7:00 155.5 12.470				
	2/21/2008 8:00 159.5 12.629				
	2/21/2008 9:00 163.5 12.787				
	Note:				
	The "Protocol ext function" module is only available in one of the following scenarios:				
	You have installed B.Data prior to V5.3.				
	You have licensed the Oracle database yourself.				

Protocol	Inputs:			
	1-n measuring variat	oles (m_)		
	Start parameters:			
	Interval, e.g. 1			
	Unit: e.g. h			
	Result:			
				our interval, the protocol module returns eight values
1	(in a 3-h pattern). Th	e connecte	ed measur	ng variables are calculated at the specified intervals.
1				
		ц	ц	
		-sumR	m_Supply_2_sumR	
		Ľ,	ľ,	
			≥	
		m_Supply_1	육	
	time	ហ៊ុ	ហ៊ុ	
	4/18/2005 3:00	2,023	1,904	
	4/18/2005 6:00	3,671	3,586	
	4/18/2005 9:00	6,442	6,253	
	4/18/2005 12:00	6,761	6,519	
	4/18/2005 15:00	6,867	6,681	
	4/18/2005 18:00	6,244	6,256	
	4/18/2005 21:00	6,084	6,199	
	4/19/2005 0:00	4,623	4,704	

Protocol 10 min 10 max	Innute					
	Inputs: 1-n measuring variables (m_) Start parameters: Interval, e.g. 1 Unit: e.g. h Result:					
		he report is	solit into	user-defined intervals. The connected measuring		
	variables are then ca	lculated bas	ed on th	ese intervals; the 10 lowest and 10 highest results are amp and status (color).		
		œ	с			
		m_Supply_1_sumR	m_Supply_2_sumR			
		Ļ.	ان ا			
		d	dan			
	time	ហ៊	ភ			
	4/18/2005 3:00	2,023	1,904			
	4/18/2005 6:00 4/18/2005 9:00	3,671 6,442	3,586 6,253			
	4/18/2005 12:00	6,761	6,203			
	4/18/2005 15:00	6,867	6,681			
	4/18/2005 18:00	6,244	6,256			
	4/18/2005 21:00	6,084	6,199			
	4/19/2005 0:00	4,623	4,704			
Protocol cumulated	Inputs:					
	1-n measuring variab	oles (m_)				
	Start parameters:					
	Interval, e.g. 1					
	Unit, e.g. h					
	-					
	Result					
	Similar to a protocol cumulated (added to			ce being the results of a measuring variable will be		
	time m	n_avg01_28	1			
	7/19/2007 1:00	1.50				
	7/19/2007 2:00	7.00				
	7/19/2007 3:00	16.50				
	7/19/2007 4:00	30.00	)			
	7/19/2007 5:00	47.50	)			
	7/19/2007 6:00	69.00				
	7/19/2007 7:00	94.50				
	7/19/2007 8:00	124.00	כ			
	7/19/2007 7:00 7/19/2007 8:00					

Protocol with FROM/TO	Inputs:							
	1-n measuring variables (m_)							
	Start parameters:							
	Interval, e.g. 1							
	Unit: e.g. h							
	Result:							
		<b>,</b> , , , , , , , , , , , , , , , , , ,						
					col module returns eight values culated at the specified intervals.			
	The time stamp is o							
		alopiayou along t						
			~	r l				
			Supply_1_sumR	sumR				
			ار س	<u>6</u>				
				Supply_2_				
			dd	dd				
	ε							
	from	£		٤				
	4/18/2005 0:00	4/18/2005 3:00		1,904				
	4/18/2005 3:00	4/18/2005 6:00		3,586				
	4/18/2005 6:00	4/18/2005 9:00		6,253 6,519				
	4/18/2005 12:00			6,681				
	4/18/2005 15:00			6,256				
	4/18/2005 18:00			6,199				
	4/18/2005 21:00	4/19/2005 0:0	4,623	4,704				
	You set the MODU		ameter in B [	Data Ontions t	to specify whether to enable or			
	You set the MODULE_EINHEIT parameter in B.Data Options to specify whether to enable or disable output of the unit. (0 = unit output disabled, 1 = unit output enabled)							
Protocol transposed	Inputs:	× ×		·	. ,			
	1-n measuring varia	ables (m_)						
	Start parameters:							
	Interval, e.g. 1							
	Unit: e.g. h							
	Result:							
		At a query period of one day and three hour interval, the protocol module returns eight values						
					culated at the specified intervals.			
	time	4/18/2005 3:00	4/18/2005 6:00	4/18/2005 9:0	00			
	m Supply 1 sumR	2,023	3,671	6,44				
	m Supply 2 sumR	1,904	3,586	6,25	53			

Protocol transposed 445	Inputs:						
	1-n measuring variab	oles (m. )					
	Start parameters:						
	Interval, e.g. 1						
	Unit: e.g. W						
	Result:						
		ماريام ممر ماريا م					
	The functionality of th		e is similar to th	at of the Pr	otocor trans	sposed modu	ie.
	The difference consis						
		Each quarter of the year is subdivided into the following three periods: 4 weeks, 4 weeks and 5 weeks. For example:					
	January February	March	April	May	June	etc.	
	4 Weeks 4 Weeks	5 Week	s 4 Weeks	4 Weeks	5 Weeks	4 Weeks	
	Only the following     Query type "Y     Query type "Y	ear" and i	nterval "1 W"	tted for this	module:		
			0" and interval	"4 \\\/"			
			0" and interval				
			0" and interval				
			0" and interval '				
		7eek 06.30	0" and interval	1211			
PVD import documenta- tion	Inputs:						
lion	none						
	Start parameters:						
	none						
	Result:						
	An interface was developed for B.Data that is capable if importing the data from SAT250 B.Data system. To enable input of this data to B.Data data points, these must be configured data points. The name (TANAME) of the SAT250 data point must be stored in the address (DAPU_ADR).					onfigured as	
	First the module outputs all SAT250 data points that are not referenced in B.Data. It then outputs all SAT250 data points that are already referenced in B.Data.						
	This module is not av	ailable in	the standard se	etup.			
	PDW Import						
	SAT250		PDW				
	Datapoint description PRK.MLD.DATVV	1 Ref.Nr. 100	Datapoint desc	Ref.Nr.			
	SQL.FILL.LEVEL	100					
	PRK.MLD.TEST01		d_test_rko_01	PRK.MLD.	TEST01		
	PRK.MLD.TEST02	103	d_test_rko_02	PRK.MLD.	TEST02		
Shift book	Inputs:						
	none						
	Start parameters:						
	none						
	Result:						
	This represents an e	mpty Exce	el sheet that ma	ay be used.	for example	, as shift log.	
L		.,					

Reference	Inputs:	Inputs:						
	Data point A (d_, e_,	Data point A (d_, e_, a_)						
		Data point B (d_, e_, a_)						
	Start parameters:							
	Interval, e.g. 15							
	Unit, e.g. min							
	Result:							
		he measured val	ion and time	stamps of d	ate point A and corresponding			
		The module outputs the measured values and timestamps of data point A and corresponding measured values and timestamps of data point B for the specified query period.						
	Datenpunkt A	Daten	ounkt B					
	28.05.2009 09:15:00 77	,7 28.05.	2009 09:15:00	345,1				
	28.05.2009 09:30:00 34	7,1 28.05.	2009 09:30:00	351,1				
	28.05.2009 09:45:00 34	9,1 28.05.	2009 09:45:00	353,1				
Repair module	Inputs:							
	1n parameters (t_)							
	repairlist       Image: The second secon							
	Start parameters:							
	none							
	Result							
	The parameter entries for the query period are output in list form. The system calculates and displays the duration along with the start, end, and value data.							
				value data.				
	t_Repairhour_W1_P1	and	uelue	duration				
	begin 05.01.2008 12:00	end 06.01.2008 11:00	value 1	duration 23:00				
	24.01.2008 09:30	24.01.2008 18:30	1	9:00				
	t_Repairhour_W1_P2							
	begin	end	value	duration				

Switching times	Inputs:				
	1-n data point	:s (d_)			
	Start paramet	ers:			
	none				
	Result:				
	points must b tion status, i.e Question mar	e spontaneous, which e. 0 for the Off and 1 fo ks will be output if a n	n means that the function of the On status. The	ion only re On duratio this calcul	tching entries in the data cords changes of the activa- on is calculated as well. lation. If an entry is missing, green color (gap).
	data point	time on	time off	duration	
	d_motor_01	2006/10/18 08:11:00		???	
	d_motor_01	2006/10/18 12:00:09	2006/10/18 12:40:38	0:40:29	
	d_motor_01		2006/10/18 17:12:00	???	
	d_motor_01	2006/10/18 23:30:25	2006/10/19 00:00:00	0:29:35	
	d_turbine_01	2006/10/18 08:22:56	2006/10/18 17:12:00	8:49:04	

Security changes	Inputs:						
	none						
	Start parameters:						
	none						
	Result:						
	This module outputs the following information for the select	This module outputs the following information for the selected query period:					
	The user name and the date and time of login and logoff. The name of the operating system user that were used for the duration of the user's login to the B.Data system. The of this user must be available to enable error-free calculation is displayed in green color if one of these times is missing, not log off within the relevant query period. The "green" co context.	The output also identifies the PC and the login. The function also calculate corresponding login and logoff data o of the duration. The calculated value , for example, because the user did					
	Unknown user: The date and time of the login attempt, inc not registered in B.Data who attempted to login. The comp user is output as well.	-					
	Incorrect password: Date and time of incorrect password in	nput, as well as the name of user who					
	entered this password. The computer name and operating	•					
	· · ·	system user is also identified.					
	entered this password. The computer name and operating Forbidden action: Attempts made by users not having the	system user is also identified.					
	entered this password. The computer name and operating Forbidden action: Attempts made by users not having the carry out a specific action are stored in this area.	system user is also identified.					
	entered this password. The computer name and operating Forbidden action: Attempts made by users not having the carry out a specific action are stored in this area.	system user is also identified. necessary functional permissions to					
	entered this password. The computer name and operating Forbidden action: Attempts made by users not having the carry out a specific action are stored in this area.	system user is also identified. necessary functional permissions to					
	entered this password. The computer name and operating Forbidden action: Attempts made by users not having the carry out a specific action are stored in this area.	system user is also identified. necessary functional permissions to					
	entered this password. The computer name and operating Forbidden action: Attempts made by users not having the carry out a specific action are stored in this area. User logon/logoff time User: BDATA_SYS 2/25/2008 9:50 User BDATA_SYS logged in to DocLiber from atw1 2/25/2008 9:58 User BDATA_SYS logged out from DocLiber from atw1	system user is also identified. necessary functional permissions to					
	entered this password. The computer name and operating Forbidden action: Attempts made by users not having the carry out a specific action are stored in this area. User logon/logoff time User: BDATA_SYS 2/25/2008 9:50 User BDATA_SYS logged in to DocLiber from atw1 2/25/2008 9:58 User BDATA_SYS logged out from DocLiber from atw1 2/25/2008 9:59 User BDATA_SYS logged in to DocLiber from atw1 duration: 8.00 min	system user is also identified. necessary functional permissions to					
	entered this password. The computer name and operating Forbidden action: Attempts made by users not having the carry out a specific action are stored in this area. User logon/logoff time User: BDATA_SYS 2/25/2008 9:50 User BDATA_SYS logged in to DocLiber from atw1 2/25/2008 9:59 User BDATA_SYS logged out from DocLiber from atw1 duration: 8.00 min	system user is also identified. necessary functional permissions to					
	entered this password. The computer name and operating Forbidden action: Attempts made by users not having the carry out a specific action are stored in this area. User logon/logoff time User: BDATA_SYS 2/25/2008 9:50 User BDATA_SYS logged in to DocLiber from atw1 2/25/2008 9:58 User BDATA_SYS logged out from DocLiber from atw1 2/25/2008 9:59 User BDATA_SYS logged in to DocLiber from atw1 duration: 8.00 min	system user is also identified. necessary functional permissions to					
	entered this password. The computer name and operating Forbidden action: Attempts made by users not having the carry out a specific action are stored in this area.	system user is also identified. necessary functional permissions to					
	entered this password. The computer name and operating Forbidden action: Attempts made by users not having the carry out a specific action are stored in this area. User logon/logoff time User: BDATA_SYS 2/25/2008 9:50 User BDATA_SYS logged in to DocLiber from atw1 2/25/2008 9:59 User BDATA_SYS logged out from DocLiber from atw1 duration: 8.00 min Unknown user time Description 2/25/2008 10:15 Unknown user MÜLLER attempted to login to DocLiber	system user is also identified. necessary functional permissions to					
	entered this password. The computer name and operating Forbidden action: Attempts made by users not having the carry out a specific action are stored in this area.	system user is also identified. necessary functional permissions to 118x8@ATPC0G4D atw118x8@ATPC0G4D 118x8@ATPC0G4D Liber from atw118x8@ATPC0G4D					
	entered this password. The computer name and operating Forbidden action: Attempts made by users not having the carry out a specific action are stored in this area. User logon/logoff time User: BDATA_SYS 2/25/2008 9:50 User BDATA_SYS logged in to DocLiber from atw1 2/25/2008 9:58 User BDATA_SYS logged out from DocLiber from atw1 duration: 8.00 min Unknown user time Description 2/25/2008 10:15 Unknown user MÜLLER attempted to login to DocLiber from atw1 time Description 2/25/2008 9:33 User MAIER failed to log in to DocLiber from atw1	system user is also identified. necessary functional permissions to 118x8@ATPC0G4D atw118x8@ATPC0G4D 118x8@ATPC0G4D Liber from atw118x8@ATPC0G4D					
	entered this password. The computer name and operating Forbidden action: Attempts made by users not having the carry out a specific action are stored in this area. User logon/logoff time User: BDATA_SYS 2/25/2008 9:50 User BDATA_SYS logged in to DocLiber from atw1 2/25/2008 9:58 User BDATA_SYS logged out from DocLiber from atw1 duration: 8.00 min Unknown user time Description 2/25/2008 10:15 Unknown user MÜLLER attempted to login to DocL Wrong Password time Description 2/25/2008 9:33 User MAIER failed to log in to DocLiber from atw11 Forbidden action	system user is also identified. necessary functional permissions to					
	entered this password. The computer name and operating Forbidden action: Attempts made by users not having the carry out a specific action are stored in this area. User logon/logoff time User: BDATA_SYS 2/25/2008 9:50 User BDATA_SYS logged in to DocLiber from atw1 2/25/2008 9:58 User BDATA_SYS logged out from DocLiber from atw1 duration: 8.00 min Unknown user time Description 2/25/2008 10:15 Unknown user MÜLLER attempted to login to DocLiber from atw1 time Description 2/25/2008 9:33 User MAIER failed to log in to DocLiber from atw1	system user is also identified. necessary functional permissions to					

Snapshot module	Inputs:					
	1-n data points (d_, e_, a_)					
	Start parameters:					
	Interval: e.g. 5					
	Result:					
	The module returns the value of an exact time that was defined as start parameter. It also outputs the value of the same time from the previous day.					
	Example: Daily start with wizard from April 18, 2005					
	d         A         E         V         117a           4/19/2005         5:00         462         383           d         A         E         V         116a           4/19/2005         5:00         374         113					
	Value 462 has the time stamp 04/19/2005 05:00. (05:00 because 5 was selected as start parameter). Value 383 has the time stamp 04/18/2005 05:00 (05:00 because 5 was selected as start parameter).					
Statistics	Inputs:					
	1n measuring variables (m_)					
	Start parameters:					
	Interval: e.g. 15					
	Unit: e.g. min					
	Result:					
	Returns the maximum, minimum, and mean value of the connected measuring variables.					
	The time frame is defined by the "FROM" and "TO" entries. The results of the connected meas- uring variables are calculated for every interval in this time frame. Based on these values, the maximum, minimum, and average values are calculated and output for each measuring varia- ble. The maximum and minimum values are output with time stamp.					
	m_addmeva_02 kW m_addxmeva_01 kW					
	max 18.05.01 00:00 1485 18.05.01 00:00 1485					
	min 17.05.01 00:15 1200 17.05.01 00:15 1200					
	avg 1342,5 1342,5					
Statistic for operating	Inputs:					
data points	1n data points (d_, e_, a_ )					
	Start parameters:					
	none					
	Result:					
	The unit, sum value, minimum time stamp, minimum value, average, maximum time stamp, and maximum value data is calculated and output across the query period, based on the connected operating data points.					
	d_data_point_1kWh         7164.6         5/7/2001 0:15         21         75         5/7/2001 3:15         33.3           d_data_point_2MWh         6576         5/7/2001 0:15         21         69         5/8/2001 0:00         116					

Hour distribution	Inputs:					
	1n data points (d_, e_, a_ ) <b>Start parameters</b> : Interval, e.g. 10					
	Lower limit, e.g. 50					
	Upper limit, e.g. 100					
	Result:					
	The hour distribution module returns seven values for a query period of one day, with a lower limit of 50, a upper limit of 100, and an interval of 10 between the upper and lower limit.					
	Range d_NULL01					
	<= 50 12					
	60 3					
	70 2					
	80 3					
	90 3					
	100 1 > 100 0					
Text query	Inputs:					
	1n data points (d_, e_, a_ )					
	Start parameters:					
	none					
	Result:					
	Outputs the texts of the query period that are stored in the measurement journal for the con-					
	nected data points. The corresponding values are included. If the text of several successive					
	entries is identical, the first time stamp will be entered in "FROM" and the last time stamp in					
	"TO". The "FROM" and "TO" entries are identical if the text is unique.					
	from to d StringDatapoint					
	1/16/2008 9:00 1/16/2008 9:00 Machine 4 fallen out 12					
	1/16/2008 16:00 1/16/2008 16:00 Turbinerevision 0					

Text protocol	Inputs:					
	1n data points (d	1n data points (d_, e_, a_ ) Start parameters:				
	Start parameters:					
	Interval, e.g. 1					
	Time unit, e.g. h					
	Result:					
	The module output	The module outputs all texts of a data point for the query period that is split into intervals.				
	Zeit		e NU	LL01 d_NULL02		
	01.06.2011	01.06.2011 01:				
	01.06.2011 01:00:					
	01.06.2011 02:00:					
	01.06.2011 03:00:					
	01.06.2011 04:00:	00 01.06.2011 05:	00:00			
	01.06.2011 05:00:	01.06.2011 05:00:00 01.06.2011 06:00:00				
	01.06.2011 06:00:	00 01.06.2011 07:	00:00			
	01.06.2011 07:00:	00 01.06.2011 08:	00:00			
	01.06.2011 08:00:	00 01.06.2011 09:	00:00	Energie		
				Raum		
	01.06.2011 09:00:	00 01.06.2011 10:	00:00	Zeit		
Jser rights	Inputs:					
	none					
	Start parameters:					
	none					
	Result:					
	All users created in the system will be listed. The user groups and functional groups assigned to this user are also displayed.					
		ene User Gruppen DDD Administratoren (1D–600)		Funktionelle Gruppen		
				Admilistrator LASTPROGNOSE		
				ODBC_IMPORT TASK_MANAGEMENT WEB-Eligabe		
	BDATA_SYS 1	000 Adm Isistratores (ID-600)	htenet	Administrator		
				LASTPROGNOSE Odbc_IMPORT		
				TASK_MA NAGEMENT WEB-Ehigabe		
				TASK_MA NAGEMENT WE8-Ehgade		

Summary Initial-Profile	Profile Inputs:				
Month	Combination of a data point and four measuring variables (m_)				
	This combination can be repeated as often as need be.				
	TInitProfMonth     TinitProfMonth_Module				
	Start parameters:				
	none				
	Result:				
	change to this number indicates that a new batch has started. The batch must remain the same for at least one month. Four measuring variables must be connected behind each data point. These measuring variables should calculate the following: Costs, electrical work, electrical power, and the price. Costs and work are calculated once for the query period and once for the batch period. Power and price are only calculated for the batch period. The batch period may be significantly longer than the query period. Calculation starts with the first data point/measuring variable combination and continues with the next combination, insofar as a next one exists. This module can only calculate monthly evaluations. Other query types will cancel the calculation and generate an error message in the error journal. The output units are assigned a fixed code. Costs in EUR, work in MWh, power in MW, and price in EUR/MWh. The business partner can be specified at the data point using the "Company" property type.				
	eseNumberEntire tranche query period costs costs Arbeit Arb				
	from to from to (query period) (Total) (Abfragezeitrau (Ge				
	4780 2/1/2008 5/1/2008 2/1/2008 3/1/2008 146.5 EUR 439.6 EUR 246.5 MWh				
Summary Initial-Profile	Inputs:				
Year	Combination of a data point and four measuring variables (m_)				
	This combination can be repeated as often as need be.				
	Start parameters:				
	none				
	Result:				
	This module works similar to the "Summary Initial-Profile Month" module mentioned above. Difference: Only the year is permitted as query type.				
Compression and cor-	Inputs:				
rection	1n data points (d_, e_, a_ )				
	Start parameters:				
	none				
	Result:				
	The module recalculates all defined compressions, expansions and corrections (replacement value treatments) of a data point for the specified query period.				
	<b>Notice</b> If you are not using data points for the module, <b>all</b> compressions, expansions and corrections (replacement value treatments) defined in B.Data will be recalculated.				

# 13.7 Display modes

Display mode	Description
KKS text	KKS ID
Short text	Name of the data point
Short text + long text	Name and description of the data point
Long text	Description of the data point

13.8 Existing functional groups

# 13.8 Existing functional groups

### Overview of functional groups

Functional group	Function	
ADMINISTRATOR	This group includes comprehensive functional rights for B.Data.	
	All changes to objects can be made, for example deleting, adding or editing.	
CONFIGURATOR	This group has the right to configure B.Data objects.	
GUEST	This group is permitted to view all objects in the tree.	
	No changes to objects can be made (deleting, adding, editing etc.).	
	create new reports, or calculate evaluations.	
	This grouping is intended to apply simple, temporary restrictions on significant operator actions in the system.	
	To set up explicit, long-term restrictions on functional rights, you should use a combination of the following functional groups.	

### Overview of functional rights

😤 Functional Group	ΞX		
Name:			
Description:			
	▼		
Authority Level: 500			
Assigned Rights			
🖃 🔲 Administration	<b>A</b>		
🖕 🖓 🗆 Logging Viewer			
L. view			
🗄 🖓 🔲 Service Cockpit			
L. view			
B- Alarming			
configure			
create, remove, configure			
in in view view in the view i			
acknowledge			
view			
BData Account			
🗆 create, remove, configure			
u view			
🛛 🖃 🖳 BData Domain			
🛱 🖓 🔲 Configuration			
create, remove, configure			
i ObjectAssignment			
modify share			
BData Job			
- Create, remove, configure			
view			
🖙 🔲 Energy Efficiency			
🗄 🗇 Configuration			
🖸 configure			
🖸 create, remove, configure	-		
OK Apply OCancel			

#### See also

Navigation in B.Data Web (Page 418)

13.9 Operations for generating calculation blocks (prototypes)

## 13.9 Operations for generating calculation blocks (prototypes)

### Overview

This section lists all functions that are available for creating prototypes.

### Requirement

none

### Mathematical operations

Function	Description
Addition (+)	Inputs:
	input1
	input2
	The function returns:
	output:= input1+input2;
Subtraction (-)	Inputs:
	input1
	input2
	The function returns:
	output:= input1-input2;
Multiplication (*)	Inputs:
	input1
	input2
	The function returns:
	output:= input1*input2;
Division (/)	Inputs:
	input1
	input2
	The function returns:
	output:= input1/input2;
Power (pow)	Inputs:
	input1 (base)
	input2 (power)
	The function returns:
	output:= pow (input1,input2);
Square root (sqrt)	Inputs:
	input
	The function returns:
	output := sqrt(input);

Table 13- 1	Mathematical functions

13.9 Operations for generating calculation blocks (prototypes)

Function	Description
Minus	Inputs:
	input
	The function returns:
	output:= minus(input);
Exponential function (exp)	Inputs:
	input
	The function returns:
	output:= exp(input);
Natural logarithm (In)	Inputs:
	input
	The function returns:
	output:= In(input);
Base 10 logarithm (log10)	Inputs:
	Input
	The function returns:
	output:= log10(input);
Sine (sin)	Inputs:
	input
	The function returns:
	output:= sin(input);
Cosine (cos)	Inputs:
	input
	The function returns:
	output:= cos(input);
Tangent (tan)	Inputs:
	input
	The function returns:
	output:= tan(input);
Arc sine (arcsin)	Inputs:
	input
	The function returns:
	output:= arcsin(input);
Arc cosine (arccos)	Inputs:
	input
	The function returns:
	output:= arccos(input);
Arc tangent (arctan)	Inputs:
	input
	The function returns:
	output:= arctan(input);

13.9 Operations for generating calculation blocks (prototypes)

### Logical operations

Function	Description
logical AND (and)	Inputs:
	input1
	input2
	The function returns:
	output:= and(input1,input2);
logical OR (or)	Inputs:
	input1
	input2
	The function returns:
	output:= or(input1,input2);
logical Exclusive OR (xor)	Inputs:
	input1
	input2
	The function returns:
	output:= xor(input1,input2);
Logical inversion (not)	Inputs:
	input
	The function returns:
	output:= not(input);

Table 13-2 Logical functions

### **Compare operations**

Table 13-3	Compare functions
------------	-------------------

Function	Description	
Greater than comparison (gt)	Inputs:	
	input1	
	input2	
	The function returns:	
	output:= gt(input1,input2);	
	output:= 1 as long as input1 > input2;	
Less than comparison (gt)	Inputs:	
	input1	
	input2	
	The function returns:	
	output:= lt(input1,input2);	
	output:= 1 as long as input1 < input2;	

13.9 Operations for g	generating calculation	blocks (prototypes)
-----------------------	------------------------	---------------------

Equal comparison (gt)       Inputs: input1 input2 The function returns: output:= eq(input1,input2); output = 1 as long as input1 = input2         Greater than or equal compari- Inputs:       Inputs:	
input2         The function returns:         output:= eq(input1,input2);         output = 1 as long as input1 = input2         Greater than or equal compari-         Inputs:	
The function returns:         output:= eq(input1,input2);         output = 1 as long as input1 = input2         Greater than or equal compari-         Inputs:	
output:= eq(input1,input2);         output = 1 as long as input1 = input2         Greater than or equal compari-         Inputs:	
output = 1 as long as input1 = input2       Greater than or equal compari-       Inputs:	
Greater than or equal compari- Inputs:	
son (gteq) input1	
input2	
The function returns:	
output:= gteq(input1,input2);	
output = 1 as long as input1 ≥ input2	
Less than or equal comparison Inputs:	
(Iteq) input1	
input2	
The function returns:	
output = Iteq(input1,input2);	
output = 1 as long as input1 ≤ input2	
Not equal comparison (noteq) Inputs:	
input1	
input2	
The function returns:	
output:= noteq(input1,input2);	
output = 1 as long as input1 <> input2;	

### Switch operations

Table 13-4	Switch functions
------------	------------------

Function	Description
Toggle (switch)	Inputs:
	input1
	input2
	switch
	The function returns:
	output:= switch(input1,input2,switch);
	output = input1 if switch = 0
	output = input2 if switch = 1
Switch (interrupter)	Inputs:
	input
	switch
	The function returns:
	output = interrupter(input, switch);
	output = input if switch = 1

13.9 Operations for generating calculation blocks (prototypes)

Quitabing dalay (adalay)	
Switching delay (sdelay, sdelay_up, sdelay_up)	Inputs:
Suelay_up, Suelay_uowii)	input
	delay time in [s]
	The function returns:
	output:= sdelay(input,delaytime);
	output:= sdelay_up(input,delaytime);
	(rising edge)
	output:= sdelay_down(input,delaytime);
	(falling edge)
	output = input on expiration of the delay time
Value change filter (f_valchng)	Inputs:
	input
	The function returns:
	output:= f_valchng(input);
	output = input as soon as the measured input
	no longer matches the last input measured
Status memory (fliflo)	Inputs:
	input
	res
	The function returns:
	output:= fliflo(input,res);
	input == 0 and res == 0
	ð no new result
	input == 1 and res == 0
	ð if result is not 1, result is set to 1
	input == 0 and res == 1
	ð if result is not 0, result is set to 0
	input == 1 and res == 1
	ð Result is assigned the last result value ('invalid' status)
Edge memory (fliflo_chng, fli-	Inputs:
flo_up, fliflo_down)	input
	res
	The function returns:
	output:= fliflo_chng(input, res);
	output:= fliflo_up(input,res);
	output:= fliflo_down(input, res);
	On change to the value at input, it is determined whether or not to
	trigger a set operation.
	SET and RES == 0 > if result is not 1, result is set to 1.
	RES == 1 > if result is not 0, result is reset to 0.

## Table operations

Function	Description
2 dimensions (spline2)	Inputs:
	table (table with definition of the full path, i.e. subfolder of the mcl folder)
	input (first column value in the table)
	The function returns:
	output:= spline2(c:\mcl\tables\watercontent.tab,input);
	The table must be available as ASCII file with the following format:
	10.00 2519.98
	20.00 2538.58
	30.00 2557.21
	40.00 2575.88
	50.00 2594.57
	60.00 2613.31
	Note: An empty row (=CR+LF) may not exist after the last row containing numbers.
	Explanations:
	ò first column input
	ò second column input, associated value
3 dimensions (spline3)	Inputs:
	table (table with definition of the full path, i.e. subfolder of the mcl folder)
	input1 (first column value in the table)
	input2 (second column value in the table)
	The function returns:
	output:= spline3(c:\mcl\tables\energy.tab,input1,input2);
	The table must be available as ASCII file with the following format:
	3/6 0.01 0.03 0.05
	10.00 2519.98 42.00 42.00
	20.00 2538.58 83.86 83.86
	30.00 2557.21 2556.68 125.66
	40.00 2575.88 2575.40 2574.93
	50.00 2594.57 2594.15 2593.73
	60.00 2613.31 2612.93 2612.55
	Note: An empty row (=CR+LF) may not exist after the last row containing numbers.
	Explanations:
	ð input1
	ò input2
	3 Number of result columns
	6 Number of result rows

13.9 Operations for generating calculation blocks (prototypes)

### Interval operations

Function	Description
Difference (diff)	Inputs:
	measured value
	averaging time in [s]
	offset
	The function returns:
	output:= diff(measured value, averaging time, offset);
	(difference or value at the end and start of the mean value calcula- tion time)
	Note:
	offset 01:00:00 the value is generated at the start of the full hour
	offset 00:00:00 the value is generated at the start of the full minute
Mean value (avg)	Inputs:
	measured value
	averaging time in [s]
	offset
	The function returns:
	output:= avg(measured value, averaging time, offset);
	Note:
	offset 01:00:00 the value is generated at the start of the full hour
	offset 00:00:00 the value is generated at the start of the full minute
Average with status rating	Inputs:
(avgST)	measured value
	status
	percentage
	averaging time in [s]
	offset
	The function returns:
	output:=
	avgST(measuredvalue,status,percentage,averagingtime,offset);
	(output is only valid on the condition that at least n% {percent} of the corresponding status values {status} are also valid)
	Note:
	offset 01:00:00 the value is generated at the start of the full hour
	offset 00:00:00 the value is generated at the start of the full minute

Table 13-6 Interval functions

Minimum (min)	Inputs:
	measured value
	averaging time in [s]
	offset
	The function returns:
	output:= min(measured value, averaging time, offset);
	Note:
	offset 01:00:00 the value is generated at the start of the full hour
	offset 00:00:00 the value is generated at the start of the full minute
Maximum (max)	Inputs:
	measured value
	averaging time in [s]
	offset
	The function returns:
	output:= max(measured value, averaging time, offset);
	Note:
	offset 01:00:00 the value is generated at the start of the full hour
	offset 00:00:00 the value is generated at the start of the full minute
Total (sum)	Inputs:
	measured value
	averaging time in [s]
	offset
	The function returns:
	output:= sum(measured value, averaging time, offset);
	Note:
	offset 01:00:00 the value is generated at the start of the full hour
	offset 00:00:00 the value is generated at the start of the full minute

13.9 Operations for generating calculation blocks (prototypes)

Total with status rating (sumST)	Inputs:
	measured value
	status
	percentage
	averaging time in [s]
	offset
	The function returns:
	output:=
	sumST(measuredvalue,status,percentage,averagingtime,offset);
	(output is only valid on the condition that at least n% {percent} of the corresponding status values {status} are also valid)
	Note:
	offset 01:00:00 the value is generated at the start of the full hour
	offset 00:00:00 the value is generated at the start of the full minute
Difference (diff)	Inputs:
	measured value
	averaging time in [s]
	offset
	The function returns:
	output:= diff(measured value, averaging time, offset);
	Note:
	offset 01:00:00 the value is generated at the start of the full hour
	offset 00:00:00 the value is generated at the start of the full minute

### Quantity operations

Function	Description
Collector (collector)	Inputs:
	measured value
	averaging time in [s]
	offset
	The function returns:
	measured value array:= collector(measured value, averaging time, offset);
	Note:
	offset 01:00:00 the values are in the array at the start of the full hour
	offset 00:00:00 the values are in the array at the start of the full minute

### 13.9 Operations for generating calculation blocks (prototypes)

Quantity sort (c_sort)	Inputs:
	measured value array
	The function returns values in ascending order:
	output array:= collector(measured value array);
Quantity percentage filter	Inputs:
(c_perc_filt_first, c_perc_filt_last)	measured value array
	x
	The function returns the first x percent of the measured value array:
	output array:= c_perc_filt_first(measured value array, x);
	The function returns the last x percent of the measured value array:
	output array:= c_perc_filt_last(measured value array, x);
Quantity average (c_avg)	Inputs:
	measured value array
	The function returns the mean value of the measured value array:
	output:= c_avg(measured value array);
Quantity minimum (c_min)	Inputs:
	measured value array
	The function returns the minimum value of the measured value
	array:
	output:= c_min(measured value array);
Quantity maximum (c_max)	Inputs:
	measured value array
	The function returns the maximum value of the measured value array:
	output:= c_max(measured value array);

## 13.10 Description of MCL

New prototypes for processing data sets are defined using the special programming language MCL (Measurement Configuration Language).

#### Note

As the MCL compiler is case-sensitive, it is necessary to enter all prototype data in lowercase letters.

For logical and comparison operations, the value "1" corresponds to logical "TRUE" state and the value "0" to logical "FALSE" state.

The prototype is entered and declared between parentheses "{" and "}"; a simple addition is defined as example:

👘 Prototype Ed	tor - p_80_percent_rule	_ = ×
Name: Description:	p_80_percent_rule	
implement	•_80_percent_rule() { ntion: input1+input2;	
Name	Nr.   I/O   Description	<ul> <li>€ New</li> <li>✓ Edit</li> <li>✓ Delete</li> </ul>
	✓ OK Kancel	1 Up Down

Local variable may be defined in the header of the input window. This section is defined by entering the "local:" identifier.

It is necessary to define this "local:" section to declare local variables for interim results; note that it is not permitted to include calculations in the declaration line.

#### PERMITTED:

local:

a;

Implementation:

a:=b+c;

#### **PROHIBITED:**

local:

a:=b+c;

The actual mathematical rule is then entered in the "implementation" section. It is permitted to use all I/O variables, as well as local variables and implemented functions.

The "local" and "implementation" sections must be concluded with a colon ":". All other lines are concluded with a semicolon (';'). Variables are declared by means of ':='. Start all comments with '//'.

Use "Enter" to insert line breaks.

prototype Editor - p_8	30_percent_rule				-	= 3
Name: p_80_ Description:	percent_rule					▲
<pre>prototype p_80_percent_rule(out output, in input, in interval) {     local:         L_collector; // array with measured data         L_sort; // sorted array         L_80; // array with 80% of the greatest measured values     implementation:         L_collector=collector(input,interval,01:00:00);         L_sort=c_sort(L_collector);         L_80:=c_perc_fllt_first(L_sort,80);         output=c_max(I_80);     } }</pre>						
Parameter					2	
Name output input interval	Nr. 1 2 3	1/0 out in in	Description greatest value of 80% measured values interval for collecting of		<ul> <li>New</li> <li>Edit</li> <li>Delete</li> </ul>	
					1 Up I Down	
			🖌 ОК	🗙 Cancel		

For more complex calculations, it is possible to use the "call" command in a prototype to call other prototypes.

Always observe the order of arguments for calling the prototype.

Example of a p bsp prototype in which the p add prototype is used:

```
p_add(out output, in input1, in input2)
p_bsp(out out1, out out2, out out_bsp, in mw1, in mw2, in mw3, in mw4, in condition)
{
    Implementation:
        call p_add(out1,mv1,mv2);
        call p_add(out2,mv3,mv4);
        out_bsp:=switch(out1,out2,condition);
}
```

#### Syntax check:

After having entered the mathematical rule and defined the various I/Os (parameters) in the lower area of the dialog, you can generate the prototype by pressing the "OK" button. The syntax is checked during this generation. Syntax errors that were found are reported with specification of the relevant line.

Mcl Compiler Error 🔀
(5): syntax error
ОК

Caution: Line 3 is the first line of the text body. Lines not concluded with semicolon are not counted.

A warning is also output if the I/O variables used in the text body were not defined in the "Parameters" area.

Mcl Compiler Error 🔀
: intervaldauer undefined
ОК

## 13.11 Database functions for measurement variables

### **General information**

A set of standard database functions for MEVA processing has been implemented in B.Data. Siemens AG reserves the right of creating any new evaluation algorithms that may be needed, including their implementation in the system.

### Note

You must strictly adhere to the specified sorting order of operating datapoints, MEVAs, or parameters for the listings in the "*Inputs.*" field or in the Plant Explorer (see the figures), as the functions expect to receive the input values based on this sorting order. The same goes for units, if not specified otherwise with [1] or [x] as the unit.

The calculation results relate to the respective monitoring period that is transferred at the start of an evaluation (From, To).

### Overview

This section lists all functions that are available for use with the MEVAs.

### Requirement

Successful installation of all software components.

13.11 Database functions for measurement variables

### **MEVA** functions

Function	Description			
Addition with cross sum	Addition with cross sum (DF_MESS_PLUSX)			
	Adds any number of datapoints with cross sum.			
	Inputs:			
	d_Messung_1operating datapoint			
	d_Messung _2operating datapoint			
	d_Messung_noperating datapoint			
	The function returns:			
	VALUE = sum (d_Messung_1 + d_Messung_2 + + d_Messung_n)			
	Additional info:			
	If MEVA_CHECK_LUECKEN is set to 0 in B.Data Options, no checks for gaps in the time set are initiated (15 minutes). 1 means that a check is performed. Can only be active if MEVA_STER_THRESHOLD is disabled (= 0).			
	i→ IS Bericht i→ IS Bericht_Modul i→ Im m_DF_MESS_PLUSX I→ Im d_Messung_1 I→ Im d_Messung_n			
Addition of MEVAs	Addition of MEVAs (DF_MEVA_PLUSX)			
	Adds any number of MEVAs.			
	Inputs:			
	m_MEVA_1measuring variable			
	m_MEVA_2measuring variable			
	m_MEVA_nmeasuring variable			
	The function returns:			
	VALUE[x] =m_MEVA_1 + m_MEVA_2 + + m_MEVA_n			
	Bericht Bericht_Modul Bericht_Modul Bericht_MeVA_PLUSX Bericht_MeVA_PLUSX Bericht_MeVA_PLUSX Bericht_MeVA_PLUSX Bericht_MeVA_PLUSX Bericht_MeVA_PLUSX Bericht_MeVA_PLUSX Bericht_MeVA_PLUSX Bericht_MeVA_PLUSX Bericht_MeVA_PLUSX Bericht_MeVA_PLUSX Bericht_MeVA_PLUSX			
Number of data records	Number of data records (DF_ANZ)			
	Number of measured values in the measurement journal.			
	Inputs:			
	d_Messung_1operating datapoint			
	The function returns:			
	VALUE[s] = number of all entries (measured values) within the monitoring period.			
	in IS Bericht Bericht_Modul in Im m_DF_ANZ Im Im d_Messung_1			

Number of starts	Number of starts (DF_ANZ_STARTS)
	Used to calculate the number of plant starts.
	Inputs:
	d_Messung_1binary operating datapoint (0 and 1)
	The function returns:
	VALUE[1] = number of all 1 values within the monitoring period.
	G Bericht G Bericht_Modul G m_DF_ANZ_SCHALT G Messung_1
Energy rate	Energy rate (DF_ARBEITSPREIS)
	Energy rate calculation depends on a profile.
	Inputs:
	d_Messung_1operating datapoint
	Profil 1profile
	The function returns:
	VALUE[x] = SUM(value * profile)
	Bericht Bericht_Modul □
Energy rate with limit	Energy rate with limit (DF_ARBEITSPREIS_GRENZW)
	Energy rate calculation depends on a limit and two profiles.
	Inputs:
	d_Messung_1operating datapoint
	Profil 1profile
	Profil 2profile
	t_Grenzwertparameter
	The function returns:
	VALUE[x] ={IF value>limit SUM(value * Profil_2)} +
	{IF value≤limit SUM(value * Profil_1)}
	Bericht     Bericht_Modul     m_BF_ARBEITSPREIS_GRENZW     M_GMessung_1     M Profil 1     M Profil 2     M Communication     Communication

13.11 Database functions for measurement variables

Energy rate with availability	Energy rate with availability (DF_ARBEITSPREIS_BEDINGT)
	Energy rate calculation depending on one of the digital inputs:
	d_Messung_1operating datapoint
	d_ON_OFFoperating datapoint with logical 0/1 signal.
	Profil 1profile
	The function returns:
	VALUE[x] = IF ON_OFF=1 SUM(value * profile)
	🙀 Profil 1
Monitoring period in hours	Monitoring period in hours (DF_BEOB_STUNDEN)
	Monitoring period entered
	Inputs:
	not necessary.
	The function returns:
	VALUE[h] = duration of the monitoring period entered.
	🖨 🔝 Bericht
	Bricht Modul
	m_DF_BEOB_STUNDEN
Operating hours	Operating hours (DF_BSTUNDEN)
	Operating hours
	Inputs:
	d_Messung_1operating datapoint
	The function returns:
	VALUE[s] = sum of valid periods of the specified datapoint within the monitoring period.
	Bericht Bericht_Modul Brown_BF_BSTUNDEN Brown_B_d_Messung_1
Conditional operating hours	Conditional operating hours (DF_BSTUNDEN_BED)
	conditional operating hours
	Inputs:
	d_Messung_1operating datapoint
	t_Ausblendenparameter
	The function returns:
	VALUE[s] = sum of valid periods of the specified datapoint within the monitoring period minus the valid periods with datapoint value not exceeding $0 \pm parameter value$ .

DP difference	DP difference (DE MEVA DIEE ALIS DD)		
	DP difference (DF_MEVA_DIFF_AUS_DP)		
	Datapoint difference		
	Inputs:		
	m_MEVA_1measuring variable		
	m_MEVA_2measuring variable		
	The function returns:		
	If the value in m_MEVA_1 is not m_MEVA_2, the value in m_MEVA_1 is returned. Zero is returned if both MEVAs do not provide a value.		
Difference snapshot	Difference snapshot (DF_DIFF_SNAPSHOT)		
	Difference from two MEVAs of the connected datapoint. The parameter specifies the first time in decimal notation (e.g.: $1.5 = 01:30$ h). The second MEVA is derived from the same time of the previous day. An interval shorter than one day returns the same result as an interval duration of one day.		
	Inputs:		
	e_Messungdatapoint		
	t_Zeitpunktparameter		
	È- IS Bericht È- IS Bericht_Modul È- III m_DF_DIFF_SNAPSHOT └─ IS e_Messung └─ IS t_Zeitpunkt		
Division by n MEVAs	Division for n MEVAs (DF_MEVA_DIVX)		
	To calculate the quotient from n MEVAs		
	Inputs:		
	m_MEVA_1measuring variable		
	m_MEVA_2measuring variable		
	m_MEVA_nmeasuring variable		
	The function returns:		
	VALUE[x] = m_MEVA_1 / m_MEVA_2 / m_MEVA_n		
	Evricht Bericht_Modul Bericht_Mod		

13.11 Database functions for measurement variables

Division for 2 MEVAs	Division for 2 MEVAs (DF_MEVA_DIV)
	To calculate the quotient from two MEVAs
	Inputs:
	m_MEVA_1measuring variable
	m_MEVA_2measuring variable
	The function returns:
	VALUE[x] = m_MEVA_1 / m_MEVA_2
	Bericht Bericht_Modul m_DF_MEVA_DIV m_m_MEVA_1 m_m_MEVA_2
Energy supply	Energy supply (DF_EZUFUHR)
	Energy supply calculation <i>without</i> inclusion of parameter changes
	Inputs:
	m_Menge_1measuring variable, e.g., coal supplied [t]
	t_Heizwert_1parameter, e.g., calorific value of coal [MWh/t]
	The function returns:
	energy supply[MWh] = quantity[t] * calorific value[MWh/t]
	Bericht Bericht_Modul Im m_DF_MEVA_DIV Im m_MEVA_1 Im m_MEVA_1 Im m_MEVA_1
Energy supply oil	Energy supply oil (DF_EZUFUHR_OEL)
	Calculation of energy supply from oil, temperature compensated <i>with</i> inclusion of parameter changes
	Inputs:
	t_Bezugsdichteparameter [t/m³]
	t_Bezugstemperaturparameter [°C]
	t_Korrekturfaktorparameter [1/°C]
	d_Temperaturoperating datapoint [°C]
	d_Durchflussoperating datapoint [m³/h]
	t_Heizwert_1parameter [MWh/t]
	The function returns:
	energy supply[MWh] = SUM( d_Durchfluss * period of validity *
	( t_Bezugsdichte + (( t_Bezugstemperatur - d_Temperatur ) * t_Korrekturfaktor )) * t_Heizwert_1 ) / 3600
	Bericht Bericht_Modul Bericht_Modul DF_EZUFUHR_OEL C t_Bezugsdichte C t_Bezugstemperatur C t_Korrekturfaktor C t_Korrekturfaktor C t_Correlatur C t_Heizwert_1

Energy supply oil (incl. correc- tion) with constant oil tempera-	Energy supply oil, including correction and constant oil temperature (DF_ZUFUHR_OEL_KONST)
ture	Calculation of energy supply from oil, temperature compensated <i>with</i> inclusion of parameter changes
	Inputs:
	t_Bezugsdichteparameter [t/m³]
	t_Bezugstemperaturparameter [°C]
	t_Korrekturfaktorparameter [1/°C]
	t_Öltemperatur_Konstanteparameter [°C]
	d_Durchflussoperating datapoint [m³/h]
	The function returns:
	energy supply[MWh] = SUM( d_Durchfluss * period of validity *
	( t_Bezugsdichte + (( t_Bezugstemperatur - t_Öltemperatur_Konstante ) * t_Korrekturfaktor ))) / 3600
	Bericht
	🖮 😓 Bericht_Modul
	🖮 🛄 m_oel_zufuhr_const 🔽 t_Bezugsdichte
	t_Bezugstemperatur
	- 😫 t_Öltemperatur_Konstante
	🦾 🔜 e_Durchfluss
Substitution from DP	Substitution from DP (DF_MEVA_ERSATZWERT)
	Substitution from datapoint
	Inputs:
	m_MEVA_1measuring variable
	m_MEVA_2measuring variable
	The function returns:
	The value in m_MEVA_1 is returned; if no value exists, the value ir m_MEVA_2 is returned. Zero is returned if both MEVAs do not provide a value.
	Bericht Bericht_Modul m m_DF_MEVA_ERSATZWERT m m_MEVA_1 m m_MEVA_2
First value	First value (DF_FIRST_VALUE)
	First value in the monitoring period.
	Inputs:
	d_Messung_1operating datapoint
	The function returns:
	VALUE[x] = first value of the time window
	Bericht Bericht_Modul Bericht_FIRST_VALUE Model Bericht_Modul

<b>_</b>	
Daily temperature figure EnBW	Daily temperature figure EnBW (DF_HEIZGRADTAGE_ATF)
	Calculation of the daily temperature figure based on a special daily mean value.
	Inputs:
	d_Messung_1operating datapoint (outside temperature)
	The function returns:
	VALUE[x] = $\sum$ (difference of daily mean values to 15°C)
	If daily mean value > $15^{\circ}$ C, then difference = 0.
	The daily mean value is calculated based on the equation (t9+t14+2xt21)/4.
	Gericht Gericht_Modul Gericht_Mod
Heating degree days	Heating degree days (DF_HEIZGRADTAGE)
	Calculation of heating degree days.
	Inputs:
	d_Messung_1operating datapoint (outside temperature)
	The function returns:
	VALUE[x] = $\sum$ (difference of daily mean values to 15 degrees)
	If daily mean value > 15 degrees, then difference = 0.
	The daily mean is calculated as standard arithmetic mean value.
	Bericht Bericht_Modul Bericht_Modul Bericht_Modul Bericht_Modul Bericht_Modul Bericht_Modul Bericht_Modul Bericht_Modul Bericht_Modul Bericht_Modul Bericht_Modul Bericht_Modul Bericht_Modul Bericht_Modul Bericht_Modul Bericht_Modul
Configurable Meva	Configurable MEVA (CONFIG_MEVA)
	Executes configurable basic mathematical operation (+ - / * ( )).
	Inputs:
	Any number of measuring variables: m_anzahl_stk, m_sum_it
	Image: Second state sta
	To implement a selected measuring variable into an operation, enter a colon and the number of the inserted measuring variable in the sequence, for example, in the " $(4 + :1) * :2 / 2.2$ ".
	The following operation is executed in this case: (4 + m_anzahl_stk) * m_sum_it / 2,2

General load forecast	General load forecast (DF_LASTPROGNOSE)
	General calculation of the load forecast.
	Inputs:
	consumption typeconsumption type
	ProdPlan_1production plan
	ProdPlan_nproduction plan
	The function returns:
	Value = sum(y[E,t1] = k[E] * quantity[t1] + d[E])
	Bericht     Bericht_Modul     m_DF_LASTPROGNOSE     WerbrauchsTyp     ProdPlan_1     ProdPlan_n
General relative load forecast	General relative load forecast (DF_LASTPROGNOSE_RELATIV)
	General calculation of the relative load forecast.
	Inputs:
	Verbrauchstypconsumer type
	ProdPlan_1production plan
	ProdPlan_nproduction plan
	The function returns:
	Value = sum(y[E,t1] = k[E] * quantity per time[t1] + d[E])
	Bericht     Bericht_Modul     m_DF_LASTPROGNOSE_RELATIV     WerbrauchsTyp     ProdPlan_1     ProdPlan_n
Load profile	Load profile (DF_MEVA_LASTPROFIL)
	Corrects a load profile using a correction value. The load profile is recalculated based on a monthly correction value.
	Inputs:
	e_Lastgangoperating datapoint
	e_Lastgang_Korrekturoperating datapoint
	The function returns:
	The function first calculates the Real value of the sum (SumRealTo- tal) as a function of the load profile (e_Lastgang).
	It also calculates the last value for the monitoring period and applies this as correction value (LastCorrValue).
	The following calculation is then performed for each interval:
	Value = sum REAL as a function of the current query period / SumRealTotal * LastCorrValue
	Bericht Bericht_Modul m_Bericht_Modul m_DF_MEVA_LASTPROFIL m_Ge_Lastgang cGe_Lastgang_Korrektur

Last value	Last value (DF_LAST_VALUE)
	Last value measured in the monitoring period.
	Inputs:
	d_Messung_1operating datapoint
	The function returns:
	VALUE[x] = last value of the time window
	Bericht Bericht_Modul Dr. M. m_DF_LAST_VALUE M. M. Messung_1
Gap check	Gap check (DF_HAS_GAP)
	Returns 0 if one of the connected datapoints contains gaps or val- ues <= filter value; otherwise 1 is returned.
	Inputs:
	any number of datapoints: e_Messung_1, e_Messung_2
	Optional: parameter with filter value. t_Filter
	Bericht Bericht_Modul Bericht_Modul Markov Bericht_Modul Markov Messung_1 Bericht_Modul Bericht_Bericht_Modul Bericht_Bericht_Modul Bericht_Bericht_Modul Bericht_Bericht_Modul Bericht_Bericht_Modul Bericht_Bericht_Modul Bericht_Bericht_Bericht_Bericht BerichtBericht_Bericht BerichtBerichtBericht BerichtBericht BerichtBericht BerichtBerichtBericht BerichtBericht BerichtBerichtBericht BerichtBerichtBericht BerichtBerichtBericht BerichtBerichtBericht BerichtBerichtBericht BerichtBerichtBericht BerichtBerichtBerichtBericht BerichtBerichtBerichtBericht BerichtB
MAX N average	Max N average (DF_MAX_N_AVG)
	Calculates the mean value of the n highest values generated since the beginning of the year.
	Inputs:
	d_Messung_1operating datapoint
	t_100_Werteparameter
	The function returns:
	VALUE[x] = mean value of the n highest values generated since the beginning of the year.
	n is passed as parameter.
	ia - Is Bericht a - b Bericht_Modul a - m DF_MAX_N_AVG - a d_Messung_1 - S t_100_Werte

Maximum	Maximum (DF_MAX)
Maximum	Maximum calculation of a datapoint.
	Inputs:
	d_Messung_1operating datapoint
	The function returns:
	VALUE[x] = MAX(measured values) within the monitoring period. Additional info:
	If MEVA_CHECK_LUECKEN is set to 0 in B.Data Options, no checks for gaps in the time set are initiated (15 minutes). 1 means that a check is performed. Can only be active if MEVA_STER_THRESHOLD is disabled (= 0).
	MEVA_STER_THRESHOLD can be used to set a percentage limit of corrupted values as of which the corrupted result is also rejected. It is also permitted to use decimal point values (e.g. 50.5); the func- tion is disabled with "0" value. Can only be active if MEVA_CHECK_LUECKEN is disabled (= 0).
	Bericht Bericht_Modul m_m_DF_MAX M_m_m_d_Messung_1
Cumulative maximum	Cumulative maximum (DF_MAX_KUMUL)
	Returns the cumulative maximum of all measured values. Begin- ning with the start date of the evaluation period, the cumulative value is also formed for modules that need an interval.
	Inputs:
	e_Messung_1operating datapoint
	The function returns:
	VALUE[x] = sum(maximum of e_Messung_1) / number of maximum calculations (e.g. intervals)
	🖶 🚯 Bericht
	🗄 🐫 Bericht_Modul
	🖶 🔤 m_DF_MAX_KUMUL
	🦾 🔜 e_Messung_1
Maximum of n datapoints	Maximum of n datapoints (DF_MESS_MAXX)
	Maximum calculation of several datapoints.
	Inputs:
	d_Messung_1operating datapoint
	d_Messung_noperating datapoint
	The function returns:
	VALUE[x] = MAX(measured values) from 1 to n datapoints within the monitoring period.
	Bericht Bericht_Modul Bericht_Mod

MEVA minus 2 MEVAs	MEVA minus 2 MEVAs (DF_MEVA_MINUS_2)
	Subtraction of two MEVAs from one MEVA.
	Inputs:
	m_MEVA_1measuring variable
	m_MEVA_2measuring variable
	m_MEVA_3measuring variable
	The function returns:
	VALUE[x] = MEVA_1 - MEVA_2 - MEVA_3
	Bericht     Bericht_Modul     m_BF_MEVA_MINUS_2     m_m_MEVA_1     m_m_MEVA_2     m_m_MEVA_3
MEVA minus MEVA	MEVA minus MEVA (DF_MEVA_MINUS)
	Subtraction of one MEVA from a different MEVA.
	Inputs:
	m_MEVA_1measuring variable
	m_MEVA_2measuring variable
	The function returns:
	VALUE[x] = MEVA_1 - MEVA_2
	Bericht m M Bericht_Modul m m m_DF_MEVA_MINUS m m m_MEVA_1 m m m_MEVA_2
Minimum	Minimum (DF_MIN)
	Minimum calculation of a datapoint.
	Inputs:
	d_Messung_1operating datapoint
	The function returns:
	VALUE[x] = MIN(measured values) within the monitoring period.
	Additional info:
	If MEVA_CHECK_LUECKEN is set to 0 in B.Data Options, no checks for gaps in the time set are initiated (15 minutes). 1 means that a check is performed. Can only be active if MEVA_STER_THRESHOLD is disabled (= 0).
	MEVA_STER_THRESHOLD can be used to set a percentage limit of corrupted values as of which the corrupted result is also rejected. It is also permitted to use decimal point values (e.g. 50.5); the func- tion is disabled with "0" value. Can only be active if MEVA_CHECK_LUECKEN is disabled (= 0).
	Bericht Bericht_Modul Grim m_DF_MIN Grim m_G d_Messung_1

Minimum (profile)	Minimum (profile) (DF_PROFIL_BEDINGT_MIN)
	Minimum calculation depending on the profile value.
	Inputs:
	d_Messung_1operating datapoint
	Profil 1profile
	The function returns:
	Value[t] = minimum(value[t] if profile[t] <> 0)
Minimum in the current year	Minimum in the current year (DF_MESS_MIN_JAHR)
	Calculation of the minimum value of a datapoint generated in the current year.
	Inputs:
	d_Messung_1operating datapoint
	The function returns:
	VALUE[x] = MIN(measured values) from the current year.
	ia⊷ Sericht ia⊷ Sericht_Modul ia⊷ m_m_DF_MESS_MIN_JAHR ia⊷ m_ d_Messung_1
Minimum of n datapoints	Minimum of n datapoints (DF_MESS_MINX)
	Minimum calculation of several datapoints.
	Inputs:
	d_Messung_1operating datapoint
	d_Messung_noperating datapoint
	The function returns:
	VALUE[x] = MIN(measured values) from 1 to n datapoints within the monitoring period.
	i→ IS Bericht → IS Bericht_Modul → IS Bericht_Modul → IN m_DF_MESS_MINXX → IS d_Messung_1 → IS d_Messung_n

Average	Average (DF_AVG)
Average	Weighted mean value calculation.
	5
	Inputs:
	d_Messung_1operating datapoint
	The function returns:
	VALUE[x] = (measured value * period of validity) / SUM(period of validity)
	Additional info:
	<ol> <li>If MEVA_CHECK_LUECKEN is set to 0 in B.Data Options, no checks for gaps in the time set are initiated (15 minutes). 1 means that a check is performed. Can only be active if MEVA_STER_THRESHOLD is disabled (= 0).</li> </ol>
	<ol> <li>MEVA_STER_THRESHOLD can be used to set a percentage limit of corrupted values as of which the corrupted result is also rejected. It is also permitted to use decimal point values (e.g. 50.5); the function is disabled with "0" value. Can only be active if MEVA_CHECK_LUECKEN is disabled (= 0).</li> </ol>
	Bericht Bericht_Modul ⊡ □ m_DF_AVG □ □ ₩ d_Messung_1
Weighted average	Weighted average (DF_AVG_WEIGHTED)
	The function returns the weighted mean value of all measured values within the monitoring period.
	Inputs:
	e_Messungoperating datapoint
	The function returns:
	VALUE[x] = (measured value * period of validity) / SUM(period of validity)
	🖕 🚯 Bericht
	🛓 🐇 Bericht_Modul
	└──ः
	-
Average (profile)	Average (profile) (DF_PROFIL_BEDINGT_AVG)
	Mean value calculation depending on the profile value.
	Inputs:
	d_Messung_1operating datapoint
	Profil 1profile
	The function returns:
	Value[t] = average(value[t] if profile[t] <> 0)
	Bericht Bericht_Modul Brow Bericht_Modul Brow DF_PROFIL_BEDINGT_AVG The Bericht Measures 1
	🔜 d_Messung_1

Floating overage 14T	Electing overage 14T (of over alcitered 444)
Floating average 14T	Floating average 14T (df_avg_gleitend_14t)
	Calculation of the weighted mean value of the last 14 days.
	Inputs:
	d_Messung_1operating datapoint
	The function returns:
	VALUE[x] = (measured value * period of validity) / SUM(period of validity)
	However, the time range From: is corrected by 13 days in the past.
	Bericht Bericht_Modul Br m_DF_AVG m_m_d_Messung_1
Floating average x days for	Floating average x days for MEVA
Meva	(DF_MEVA_AVG_GLEITEND_XT)
	Calculating the floating average of a MEVA.
	Inputs:
	m_MEVA_1measuring variable
	t_Anzahl_Tageparameter
	The function returns:
	VALUE[x] = mean value of the MEVA of the last x days.
	The parameter specifies the number of days for which the mean value is calculated.
	Bericht Bericht_Modul Bericht_Mod
Cumulative average	Cumulative average (DF_AVG_KUMUL)
	Returns the cumulative average of all measured values. Beginning with the start date of the evaluation period, the cumulative value is also formed for modules that need an interval.
	Inputs:
	e_Messung_1operating datapoint
	The function returns:
	VALUE[x] = sum(average of e_Messung_1) / number of average calculations (e.g. intervals)
	🗄 🕞 Bericht
	🗄 🐇 Bericht_Modul
	i m_DF_AVG_KUMUL i G_ g_ e_Messung_1

As your and south filt	
Average with filter	Average with filter (DF_AVG_FILTER)
	Returns the mean value of all measured values greater than the filter value.
	Inputs:
	d_Messung_1operating datapoint
	t_filterOptional: parameter with filter value.
	Default filter value = 0
	The function returns:
	VALUE[x] = AVG(measured values) if measured value > filter value.
	🖕 💽 Bericht
	🛓 🐫 Bericht_Modul
	L. 😫 t_filter
Average of a datapoints	Average of n datapoints (DF_MESS_AVGX)
Average of n datapoints	
	Calculation of the mean value of n datapoints.
	Inputs:
	d_Messung_1operating datapoint
	d_Messung_noperating datapoint
	The function returns:
	VALUE[x] = AVG(measured values) from 1 to n datapoints within the monitoring period.
	⊨ 🛐 Bericht
	🖻 🐇 Bericht_Modul
	i⊟-
	- G d_Messung_n
Average of n MEVAs	Average of n MEVAs (DF_MEVA_AVGX) Calculation of the mean value of n MEVAs.
	Inputs:
	m_MEVA_1measuring variable
	m_MEVA_2measuring variable
	m_MEVA_nmeasuring variable
	The function returns: V(A) = V(C) (m. ME) (A, f, m. ME) (A, 2) (m. ME) (A, m)
	VALUE[x] = AVG(m_MEVA_1, m_MEVA_2, m_MEVA_n)
	È··· I Bericht ⊡·· Bericht_Modul ⊡·· Bericht_Modul ⊡·· m_m_DF_MEVA_AVGX ⊡·· m_m_MEVA_1 ⊡·· m_m_MEVA_2 ⊡·· m_m_MEVA_n

Previous period average	Previous period average (DF_AVG_VORPERIODE)
	Calculation of the mean value of the previous period.
	Inputs:
	d_Messung_1operating datapoint
	The function returns:
	VALUE[x] = AVG(measured values), whereby the query period is set back by one period (from/to).
	Bericht Bericht_Modul
Mean value addition with cross	Mean value addition with cross sum (DF_QSUM_AVG)
sum	Adds any number of datapoints with cross sum and calculates the mean value from this data.
	Inputs:
	d_Messung_1operating datapoint
	d_Messung_2operating datapoint
	d_Messung_noperating datapoint
	The function returns:
	VALUE = AVG(∑(d_Messung_1 + d_Messung_2 + + d_Messung_n))
	Bericht Bericht_Modul DF_QSUM_AVG d_Messung_1 d_Messung_2 
Mean value with threshold	Mean value with threshold (DF_AVG_SCHWELLE)
	Conditional mean value calculation.
	Inputs:
	d_Messung_1operating datapoint
	t_Ausblendenparameter
	The function returns:
	VALUE[s] = average of all values in the monitoring period minus the datapoint values not exceeding $0 \pm$ parameter value.
	Bericht Bericht_Modul Brim m_DF_AVG_SCHWELLE Grim d_Messung_1 LAusblenden

	<del>ر</del>
Multiplication of two DPs with	Multiplication of 2 DPs with cross sum (DF_MESS_MULT)
cross sum	Multiplication of two datapoints with subsequent cross sum calcula- tion.
	Inputs:
	d_Messung_1operating datapoint
	d_Messung_2operating datapoint
	The function returns:
	VALUE[x] = $\sum$ (d_Messung_1 * d_Messung_2)
	Bericht Bericht_Modul Bericht_Mod
Multiplication of n MEVAs	Multiplication of n MEVAs (DF_MEVA_MULTX)
	Multiplication of n MEVAs.
	Inputs:
	m_MEVA_1measuring variable
	m_MEVA_2measuring variable
	m_MEVA_nmeasuring variable
	The function returns:
	VALUE[x] = MEVA_1 * MEVA_2 * * MEVA_n)
Parameters	Parameter (DF_PARA)
	Calculation of the parameter value.
	Inputs:
	t_Parameterparameter
	The function returns:
	VALUE[x] = value of the DB parameter that was valid as of the FROM time (calculation start time).
	Bericht Bericht_Modul m_DF_PARA C t_Parameter

Percentile	Dereentile (DE DEDZENITIL)
Percentile	Percentile (DF_PERZENTIL)
	Returns the percentile specified in the parameter for a measured value set.
	Inputs:
	e_Messungoperating datapoint
	t_perzentilparameter
	🖻 🕼 Bericht
	🖕 🦣 Bericht_Modul
	i⇔
	st _prezentil
Cumulative percentile	Cumulative percentile (DF_PERZENTIL_KUMUL)
	Returns the cumulative percentile specified in the parameter for a measured value set.
	Inputs:
	e_Messungoperating datapoint
	t_perzentilparameter
	- ⊡ S Bericht
	🖶 🐇 Bericht_Modul
	🖵 🚨 t_prezentil
Profile sum NLP	Profile sum NLP (DF_PROFIL_SUM_NLP)
	Calculation of the sum of profile values in the period.
	Inputs: Profil 1profile
	The function returns:
	Value[t1] = SUM(profile[t1])
	i⊐· ∰ Bericht i⊐· ∰ Bericht_Modul
	m_DF_PROFIL_SUM_NLP
	🛄 Profil 1
Profile value	Profile value (DF_GET_WERT_DACHPROFIL)
	Return of the current profile value.
	Inputs:
	DachProfil 1MasterProfile
	The function returns:
	Value[t1] = profile value[t1] of the currently active profile
	Bericht Bericht_Modul Br IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
	🛶 🖬 DachProfil 1
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Profile distribution	Profile distribution (DF_PROFIL_VERTEILUNG)
	A monthly batch is distributed to production hours based on profile data.
	Inputs:
	d_stueckzahloperating datapoint containing the batch quantity
	Profilprofile or master profile
	🖻 🕞 Bericht
	🖮 😓 Bericht_Modul
	- G d_stueckzahl
	🖵 🛱 Profil
Drain optimization forecast	Drain optimization forecast (dummy) (DF_PROG_ABFLUSS)
(dummy) ()	Dummy MEVA for internal applications.
	Inputs:
	none
	The function returns:
	no values returned - cannot be used
Delta forecast	Delta forecast (DF_PROG_DELTA)
	Calculates the delta (actual value - forecast value) for the present time and uses the result to adjust a time set for the e_Korrigierte_Prognose datapoint. The calculated delta value is added accordingly to the values. The function returns the delta as return value.
	Inputs:
	e_Prognoseoperating datapoint with forecast values
	e_Istwertoperating datapoint with actual values
	e_Korrigierte_Prognoseoperating datapoint for the corrected fore- cast.
	The function returns:
	Delta = actual value - forecast value (at the present time)
	Starting at the present time and for the next 24 hours:
	e_Korrigierte_Prognose = e_Korrigierte_Prognose + Delta
	Note: All time sets of these three datapoints must be available in a 15 minute cycle.
	Bericht     Bericht_Modul     Bericht_Modul     Bericht_PROG_DELTA     Bericht_Rogenee     Bericht_Modul     Berich

Percentage	Percentage (DF_MESS_PROZ)
	Quotient of two datapoints, multiplied by 100.
	Inputs:
	d_Messung_1operating datapoint
	d_Messung_2operating datapoint
	The function returns:
	VALUE[x] = d_Messung_1 / d_Messung_2 * 100
	Bericht Bericht_Modul m_DF_MESS_PROZ d_Messung_1 
Percentage ratio between two	Percentage ratio between 2 MEVAs (DF_MEVA_PROZ)
MEVAs	Quotient of two datapoints, multiplied by 100.
	Inputs:
	m_MEVA_1measuring variable
	m_MEVA_2measuring variable
	The function returns:
	VALUE[x] = m_MEVA_1 / m_MEVA_2 * 100
	ir IS Bericht Bericht_Modul Ir IS Bericht_Modul Ir IS Modul Ir IS MEVA_PROZ IF IS MEVA_1 IF IS MEVA_2 IS MEVA_2
Repair hours	Repair hours (DF_PARA_STUNDEN)
	Total of all validity data of a parameter entered.
	Inputs:
	t_Rep_Stundenparameter
	The function returns:
	VALUE[x] = sum of all time ranges valid from - to in the monitoring period
	Bericht Bericht_Modul ⊡∰ Bericht_Modul ⊡ □ m_DF_PARA_STUNDEN ♀ t_Rep_Stunden

Round to n decimal places	Round to n decimal places (DF_MEVA_RUNDEN)
	Rounding of the MEVA result.
	Inputs:
	m_MEVA_1measuring variable
	t_3_Kommastellenparameter
	The function returns:
	VALUE[x] = Meva result rounded to the specified number of deci- mal places (parameter value)
	Bericht     Bericht_Modul     m
Switching cycles	Switching cycles (DF_ANZ_SCHALT)
	Calculation of all switching cycles in the monitoring period
	Inputs:
	d_ON_OFF operating datapoint with logical 0/1 signal.
	The function returns:
	VALUE[x] = number of all real 0-1 or 1-0 transitions
	Bericht Bericht_Modul Brich
Upper threshold element (x1)	Upper threshold element (x1) (DF_SCHWELLWERT_X1_oben)
	The function returns all MEVA values that are below the threshold; otherwise, the limit value is returned.
	Inputs: (observe the order)
	m_MEVA_1measuring variable
	t_Schwelleparameter
	t_Grenzwertparameter
	The function returns:
	VALUE[x] = IF(m_MEVA_1 < t_Schwelle, m_MEVA_1, t_Grenzwert)

13.11 Database functions	for measurement variables

Lower threshold element (x1)	Lower threshold element (x1) (DF_SCHWELLWERT_X1_unten)
	The function returns all MEVA values higher than this threshold; otherwise, the limit value is returned.
	Inputs: (observe the order)
	m_MEVA_1measuring variable
	t_Schwelleparameter
	t_Grenzwertparameter
	The function returns:
	VALUE[x] = IF(m_MEVA_1 > t_Schwelle, m_MEVA_1, t_Grenzwert)
	Bericht     Bericht_Modul     m_BF_SCHWELLWERT_X1_unten     m_m_MEVA_1     Schwelle     L_Schwelle     L_Grenzwert
Upper threshold element	Upper threshold element (DF_SCHWELLWERT)
	The function returns all MEVA values that are below the threshold; otherwise, the threshold value is returned.
	Inputs:
	m_MEVA_1measuring variable
	t_Schwelleparameter
	The function returns:
	VALUE[x] = IF(m_MEVA_1 < t_Schwelle, m_MEVA_1, t_Schwelle)
	Grief Bericht Grief Bericht_Modul Grief m_DF_SCHWELLWERT Grief m_m_MEVA_1 Grief t_Schwelle
Lower threshold element	Lower threshold element (DF_SCHWELLWERT2)
	The function returns all MEVA values higher than this threshold; otherwise, the threshold value is returned.
	Inputs:
	m_MEVA_1measuring variable
	t_Schwelleparameter
	The function returns:
	VALUE[x] = IF(m_MEVA_1 > t_Schwelle, m_MEVA_1, t_Schwelle)
	Bericht     Bericht_Modul     m_Bericht_Modul     m_m_DF_SCHWELLWERT2     m_m_MEVA_1     C_ t_Schwelle

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Subtraction with cross sum	Subtraction with cross sum (DF_MESS_MINUSX)
	Subtracts any number of datapoints with cross sum.
	Inputs:
	d_Messung_1operating datapoint
	d_Messung_2operating datapoint
	d_Messung_noperating datapoint
	The function returns:
	VALUE = Sum(d_Messung_1 - d_Messung_2 d_Messung_n)
	i → ISBericht Bericht_Modul m DF_MESS_MINUSX m d_Messung_1 m d_Messung_2 m d_Messung_n
Subtraction of n MEVAs	Subtraction of n MEVAs (DF_MEVA_MINUSX)
	Subtracts any number of MEVA inputs:
	m_MEVA_1measuring variable
	 m_MEVA_2measuring variable
	m_MEVA_nmeasuring variable
	The function returns:
	VALUE[x] =m_MEVA_1 - m_MEVA_2 m_MEVA_n
	Bericht Bericht_Modul Bericht_Modu
Sum	Total (DF_SUM)
	Sum of all measured values scaled to the hour.
	Inputs:
	d_Messung_1operating datapoint
	The function returns:
	VALUE[x] = SUM(measured value * period of validity) / 3600
	Additional info:
	MEVA_STER_THRESHOLD can be used to set a percentage limit of corrupted values as of which the corrupted result is also rejected. It is also permitted to use decimal point values (e.g. 50.5); the func- tion is disabled with "0" value. Can only be active if MEVA_CHECK_LUECKEN is disabled (= 0).
	Bericht Bericht_Modul m_DF_SUM d_Messung_1

Sum (profile)	Sum (profile) (DF_PROFIL_BEDINGT_SUM)
	Scaled sum calculation depending on the profile value.
	Inputs:
	d_Messung_1operating datapoint
	Profil 1profile
	The function returns:
	Value[t] = sum((value[t] * validity[t] / 3600) if profile[t] <> 0)
	Bericht Bericht_Modul Bericht_Modul Bericht_Modul Bericht_Modul Bericht_Modul Bericht_Modul Bericht_Modul Bericht_Modul Bericht_Modul Bericht_Modul Bericht_Modul Bericht_Modul Bericht_Modul Bericht_Modul Bericht_Modul Bericht_Modul Bericht_Modul Bericht_Bericht_Modul Bericht_Bericht_Modul Bericht_Bericht_Modul Bericht_Bericht_Modul Bericht_Bericht_Modul Bericht_Bericht_Modul Bericht_Bericht_Modul Bericht_Beri
Sum of multiple parameter	Sum of multiple parameter values (DF_PARA_PLUSX)
values	Sum of parameter values within the monitoring period.
	Inputs:
	t_Parameter_1parameter
	t_Parameter_2parameter
	t_Parameter_nparameter
	The function returns:
	VALUE[x] = SUM(t_Parameter_1, t_Parameter_2,, t_Parameter_n)
	Bericht     m_DF_PARA_PLUSX     L_Parameter_1     L_Parameter_2     L_Parameter_n
Sum Real	Sum Real (DF_SUM_REAL)
	Sum of all measured values.
	Inputs:
	d_Messung_1operating datapoint
	The function returns:
	VALUE[x] = SUM(measured value)
	Additional info:
	MEVA_STER_THRESHOLD can be used to set a percentage limit of corrupted values as of which the corrupted result is also rejected. It is also permitted to use decimal point values (e.g. 50.5); the func- tion is disabled with "0" value. Can only be active if MEVA_CHECK_LUECKEN is disabled (= 0).
	Bericht Bericht_Modul Brunder Bericht_Modul Brunder Bericht_Modul Brunder Bericht_Modul Brunder Bericht Brunder Bericht Bericht_Modul Brunder Bericht Beric

Sum Real (profile)	Sum (profile) (DF_PROFIL_BEDINGT_SUM_REAL)
	Sum calculation depending on the profile value.
	Inputs:
	d_Messung_1operating datapoint
	Profil 1profile
	The function returns:
	Value[t] = sum(value[t] if profile[t] <> 0)
	Bericht Bericht_Modul ■ □ m_DF_PROFIL_BEDINGT_SUM_REAL □ □ □ □ □ □ m_DF_PROFIL 1 □ □ □ □ □ □ □ □ □ 1
Sum at the intersection time	Sum at the intersection time (DF_SCHNITT_SUM)
	Summation within a range.
	Inputs:
	d_Messung_1operating datapoint
	d_Messung_2operating datapoint
	t_Schnittzeitpunktparameter
	The function returns:
	VALUE[x] = sum of all values in a monitoring period with summa- tion up to the "valid until" date (intersection time) of d_Messung_1, followed by d_Messung_2.
	Bericht     Bericht_Modul     m_DF_SCHNITT_SUM     d_Messung_1     d_Messung_2     L_Schnittzeitpunkt
Sum since parameter end time	Sum since parameter end time (DF_BETR_STUNDEN)
	Sum of all measured values generated after the FROM time stamp has been adjusted.
	Inputs:
	d_Messung_1operating datapoint
	The function returns:
	VALUE[x] = summation of the operating hours of a datapoint, with adjustment of the FROM time stamp in the measuring variable.
	Grief Bericht Grief Bericht_Modul Grief m_ m_DF_BETR_STUNDEN Grief d_Messung_1 Grief t_Parameter_1

Sum_HT	Sum_HT (DF_SUM_HT)
	Sum of all measured values scaled to the hour as long as rate = 1.
	Inputs:
	d_Messung_1operating datapoint
	d_HT_LT tariff datapoint (defined as 0/1 time sets)
	The function returns:
	VALUE[x] = SUM(measured value * period of validity) / 3600 IF d_HT_NT=1
	Bericht Bericht_Modul □···· Burn_m_DF_SUM_HT □···· Burn_m_d_Messung_1 ···· Burn_m_d_HT_NT
Sum_HT_Real	Sum_HT_Real (DF_SUM_HT_REAL)
	Sum of all measured values as long as rate = 1.
	Inputs:
	d_Messung_1operating datapoint
	d_HT_LT tariff datapoint (defined as 0/1 time sets)
	The function returns:
	VALUE[x] = SUM(measured value) IF d_HT_NT=1
	Bericht Bericht_Modul ⊡ IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
Sum_NT	Sum_NT (DF_SUM_NT)
	Sum of all measured values scaled to the hour as long as rate = 0.
	Inputs:
	d_Messung_1operating datapoint
	d_HT_LT tariff datapoint (defined as 0/1 time sets)
	The function returns:
	VALUE[x] = SUM(measured value * period of validity) / 3600 IF d_HT_NT=0
	i → ISP Bericht → Bericht_Modul → Import m_DF_SUM_NT → Import d_Messung_1 → Import d_HT_NT

Sum_NT_Real	Sum_NT_Real (DF_SUM_NT_REAL)
	Sum of all measured values as long as rate = 0.
	Inputs:
	d_Messung_1operating datapoint
	d_HT_LT tariff datapoint (defined as 0/1 time sets)
	The function returns:
	VALUE[x] = SUM(measured value) IF d_HT_NT=0
	Bericht Bericht_Modul Brind m_DF_SUM_NT_REAL Messung_1 M_G_HT_NT
Energy supply totals	Energy supply totals (DF_ESUM)
	Energy supply scaled to the hour and <i>without</i> inclusion of parame- ter changes.
	Inputs:
	d_Durchflussoperating datapoint in [m³/h], [Nm³/h]
	t_Heizwert_1parameter, calorific value in [MWh/t] ,[MWh/Nm³]
	The function returns:
	Energy supply[MWh] = SUM(d_Durchfluss*period validity*calorific value)
	/ 3600
	ia- ( Bericht ia- ↓ Bericht_Modul ia- □ m_DF_ESUM ia- □ m_DF_ESUM ia- □ ↓ d_Durchfluss ia- ↓ Heizwert_1
Energy supply Real totals	Energy supply Real totals (DF_ESUM_REAL)
	Energy supply calculation <i>with</i> inclusion of parameter changes.
	Inputs:
	d_Durchflussoperating datapoint in [m³/h], [Nm³/h]
	t_Heizwert_1parameter, calorific value in [MWh/t] ,[MWh/Nm³]
	The function returns:
	energy supply [MWh] = SUM(d_flow * calorific value)
	ia- ( Bericht ia- ∰ Bericht_Modul ia- m_ m_DF_ESUM_REAL ia- m_ ia- d_Durchfluss ia- m_ ia- t_Heizwert_1

Daily average AT (t9+t14+2x t21)/4	Daily average AT (t9+t14+2x t21)/4 (DF_TAGESMITTLERE_ATF)
	Calculation of the daily average outdoor temperature.
	Inputs:
	d_Messung_1operating datapoint
	The function returns:
	VALUE[x] = (t 09:00 + t 14:00 + 2 x t 21:00) / 4
	Bericht     Bericht_Modul     m_DF_TAGESMITTLERE_ATF     m_G_d_Messung_1
Partial calculation actu-	Partial calculation actual/forecast values (DF_FILL_ALT_DP)
al/forecast values	Summation within a range.
	Inputs:
	d_Istoperating datapoint
	d_Prognoseoperating datapoint
	The function returns:
	VALUE[x] = sum of all d_lst values in the monitoring period. The alternative d_Prognose datapoint is used if no values are available.
	Bericht Bericht_Modul Bericht_Modul Bericht_ALT_DP Bericht_ALT_DP Bericht_Modul
Operating hours at full load	Operating hours at full load (DF_VOLLLAST_BSTUNDEN)
	Operating hours of conditional measurements (taking into account the binary signal across the validity period of performance), weighted by the ratio to full load.
	Inputs:
	e_Durchflussoperating datapoint
	t_Volllastparameter
	The function returns:
	Value[t] = Sum (e_Durchfluss.Value * e_Durchfluss.period of validi- ty / t_Volllast)
VVII Ttotal	VVII Ttotal (DF_VV2_TGES)
	Calculation of the hours for which the profile is <> 0 in the evalua- tion period.
	Inputs:
	Profil 1profile
	The function returns:
	Value[t] = sum of the hours for which the profile is <> 0 in the eval- uation period.
	Bericht Bericht_Modul Gramm_DF_VV2_TGES Gramma Profil 1

VVII Ttotal Pactual > Ptarget	VVII Ttotal Pactual > Ptarget (DF_VV2_TGES_PIST_GR_PSOLL)
	Calculation of the hours for which the profile is <> 0 and Pactual > Ptarget in the evaluation period.
	Inputs:
	Profil 1profile
	t_P_Sollparameter
	d_P_Istoperating datapoint
	The function returns:
	Value[t] = sum of the hours for which Profil 1 <> 0 and d_P_Ist > t_P_Soll in the evaluation period.
	Bericht Bericht_Modul Bericht_Modul Brofil 1 H Profil 1 H Psoll H Psoll H Psoll H Psoll

VVII reduction factor	VVII reduction factor (DF_CALC_RF)
	Calculation of charges for unused network resources.
	Inputs:
	m_T_Gesmeasuring variable
	m_T_Istmeasuring variable
	t_200Parameter
	t_400Parameter
	t_h_pro_Jahrparameter
	Calculations are based on the output load profile of a power plant. Only selected time windows are analyzed based on this load profile and depending on the tag type (e.g. weekdays 9:00 AM to 4:00 PM, weekends 11:00 AM to 2:00 PM). The total of all time windows is referred to as $T_{total}$ .
	The next check is performed for a specified performance Ptarget to determine the period in which $T_{actual}$ power exceeded the target power in a selected section of the load profile. On completion of the check that determines whether or not Tactual is at least 30 % of $T_{total}$ , an evaluation factor r is determined based on the $T_{actual}$ and $T_{total}$ values.
	$ \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \end{array}\\ \end{array}\\ \end{array}\\ \begin{array}{c} \end{array}\\ \begin{array}{c} \end{array}\\ \end{array}\\ \begin{array}{c} \end{array}\\ \end{array}\\ \begin{array}{c} \end{array}\\ \begin{array}{c} \end{array}\\ \begin{array}{c} \end{array}\\ \begin{array}{c} \end{array}\\ \begin{array}{c} \end{array}\\ \end{array}$ \left) \begin{array}{c} \end{array}\\ \begin{array}{c} \end{array}\\ \begin{array}{c} \end{array}\\ \end{array} \left) \begin{array}{c} \end{array}\\ \begin{array}{c} \end{array}\\ \end{array} \left) \begin{array}{c} \end{array}\\ \end{array} \left) \begin{array}{c} \end{array}\\ \end{array} \left) \begin{array}{c} \end{array}\\ \end{array} \left) \begin{array}{c} \end{array} \left) \begin{array}{c} \end{array} \left) \begin{array}{c} \end{array} \left) \end{array} \left) \begin{array}{c} \end{array} \left) \end{array} \left) \begin{array}{c} \end{array} \left) \end{array} \left) \left) \bigg{ \left) \end{array} \left) \left) \end{array} \left) \left) \bigg{ \left) \end{array} \left) \left) \end{array} \left) \left) \bigg{ \left) \end{array} \left) \left) \bigg{ \left) \end{array} \left) \left) \bigg{ \left) \end{array} \left) \left) \left) \end{array} \left) \left) \bigg{ \left) \end{array} \left) \left) \bigg{ \left) \bigg{ \left) \end{array} \left) \left) \left) \bigg{ \left)  \end{array} \left) \left) \bigg{ \left)  \end{array} \left) \left) \left( \\ \bigg) \left) \left( \\ \bigg) \left)  \left( \\ \bigg) \left(
	Time window (infeed time range)
	Calculation of the T <sub>actual</sub> variable (extract from Plant 6 of VVII plus)

VVII reduction factor (contin- ued)	Once $T_{total}$ , $T_{actual}$ and r have been calculated and the constant variables $P_{target}$ , $P_{total}$ , LP and $B_{Üb-Ne}$ have been entered, the charges are calculated based on the following equation:
	LP portion: LP P <sub>target</sub> (T <sub>actual</sub> / T <sub>total</sub> ) - BÜb-Ne (P <sub>target</sub> - P <sub>total</sub> ) r(T <sub>total</sub> - T <sub>actual</sub> )
	$T_{total}$ : hours during which the profile = 1
	P <sub>target</sub> : Definition
	P <sub>actual</sub> : power measured
	T <sub>actual</sub> : duration of the Pactual > Ptarget status in the profile
	Factor1: $T_{actual}$ / $T_{total}$ must be greater than 0.3, for otherwise there is no claim for remuneration
	r: reduction factor based on the following calculation
	P <sub>total</sub> : Assured performance (taken into account in addition to the method represented in VVII plus)
	P <sub>target</sub> : Specification by power producers
	$T_{\text{total}}$ : Total power input time for $P_{\text{target}}$ as defined and demanded in the time window
	$T_{actual}$ : determined based on a continuous line in the time window; at least 30 $\%$ of $T_{total}$ remuneration of an LP portion.
	LP <sub>übNE</sub> : Power price for grid utilization in the power layer that is superimposed on the power grid layer (without transformation services contract)
	$B_{\ddot{u}b-NE}$ : Utility service contract based on cost allocation for the power layer that is superimposed on the power grid layer (without transformation services contract)
	r: Reduction factor as for network reserve orders for internal power generation plants; depending on $T_{total}$ and $T_{actual}$ .
	r (0 h < T <sub>total</sub> - T <sub>actual</sub> ≤((T <sub>total</sub> / 8760) x 200 h)) = 0.25
	r (((T <sub>total</sub> / 8760) x 200 h)) < T <sub>total</sub> - T <sub>actual</sub> ≤((T <sub>total</sub> / 8760) x 400 h)) = 0.30
	r (((T <sub>total</sub> / 8760) x 400 h)) < T <sub>total</sub> - T <sub>actual</sub> ≤T <sub>total</sub> = 0.35

If-Then for MEVAs	If-Then for MEVAs (DF_LOW_MINIMUM)
	The function returns all MEVA values higher than this threshold; otherwise, the threshold value is returned.
	Inputs:
	m_Meva_1measuring variable
	m_Meva_2measuring variable ort_Schwelleparameter
	m_MEVA_3measuring variable
	m_MEVA_4measuring variable
	The function returns:
	VALUE[x]=IF(m_Meva_1 > m_Meva_2; m_Meva_1; 0)
	VALUE[x]=IF(m_Meva_1 > m_Meva_2; m_return_1, 0)
	VALUE[x]=IF(m_Meva_1 > m_Meva_2; m_return_1, m_return_2)
	Argument 2 may be a MEVA or Parameter, otherwise MEVAs.
	Arguments 3 and 4 are optional.
	Image: Image
	Bericht     Bericht     m_m_DF_LOW_MINIMUM     m_m_MEVA_1     C_Schwelle     m_m_Retour_1     m_m_Retour_2
Counter diff.(overfl,change) without range	Counter diff.(overfl, change) without range (DF_CALC_ZAEHLER) Calculation of the count value difference with counter overflow and counter change, but without count range.
	Inputs: d_Zaehler_1operating datapoint with definition of the counter
	The function returns:
	VALUE[x] = (count value CE - count value CS) * pulse valence
	CE = calculation end time
	CS = calculation start time
	Also accounts for counter overflows and counter changes.
	A count range (CAS, CAE) is not included in overflow calculations.
	In detail, the function works as follows:
	This is a Meva function that calculates differences in a query peri- od. This function is similar to the Meva function "Count value diff. with overflow, counter change". Only exception: in the case of over flow, the difference between the last value before the overflow in the measurement journal and the count range end is not added.

Counter diff.(overfl,change)	Example of counters without count range:
without range (continued)	1.5.2005 01:00:002000
	1.5.2005 01:15:004
	1.5.2005 01:30:0010
	1.5.2005 01:45:0015
	1.5.2005 02:00:0020
	Difference = 20
	Overflow between 2000 and 4; calculation starts at 0.
	Example of counters with count range: Count range end = 3000
	1.5.2005 01:00:002000
	1.5.2005 01:15:004
	1.5.2005 01:30:0010
	1.5.2005 01:45:0015
	1.5.2005 02:00:0020
	Difference: Count range end - 2000 + 20 = 3000 - 2000 + 20 = 1020
	Overflow between 2000 and 4 and calculation starts at 0. In addi- tion, the difference between the last value before the overflow (2000) and the count range end is added.
	Bericht Bericht_Modul Bericht_CALC_ZAEHLER C
Counter fill level difference with counter change	Counter fill level difference with counter change (DF_CALC_ZAEHLER)
	Calculation of the count value difference of fill level values, includ- ing counter change.
	Inputs:
	d_Zaehler_1operating datapoint with definition of the counter
	The function returns:
	VALUE[x] = (count value CE - count value CS) * pulse valence
	CE = calculation end time
	CS = calculation start time
	Accounts for counter change.
	Fill level values may rise or decline.

Counter fill level difference with	In detail, the function works as follows:
counter change (continued)	This is a Meva function that calculates and sums differences within a query period. The difference is calculated for all valid measure- ment values in the measurement journal. The difference is always calculated relative to the previously valid value. The differences may be positive or negative and are added up. In this case, and overflow ID is not available and is also not useful. A counter change is handled correctly.
	Parameterization:
	Name of the Meva function: "Counter fill level difference with counter change".
	The parameterization is specified essentially as in "Counter value difference with overflow, counter change". At least one counter must be defined for the connected datapoint. The following counter attributes must be set: name, installation date, counter constant. As this function is also able to detect counter changes, the "Counter value at removal" (counter 1) and "Count value at installation" (counter 2) must be entered correctly.
	The query period, invalid source values, counter change, insuffi- cient values in the interval, diagnosis and filtering are as described in "Count value diff. with overflow, counter change". Overflow de- tection is not implemented.
	i → ISP Bericht → ↓ Bericht_Modul → □ m_DF_CALC_ZAEHLER ↓ ↓ ↓ d_Zaehler_1

Counter light difference (over- flow) without range	Counter light difference (overflow) without range (DF_CALC_ZAEHLER_LIGHT)
	Calculation of the count difference without counter change and count range.
	Inputs:
	d_Zaehler_1operating datapoint with definition of the counter
	The function returns:
	VALUE[x] = (count value CE - count value CS) * pulse valence
	CE = calculation end time
	CS = calculation start time
	A count range is not included in overflow calculations.
	Calculation interval equals data acquisition interval.
	Counter changes are ignored.
	In detail, the function works as follows:
	This is a Meva function that calculates differences in a query peri- od. In comparison to the other functions described above, the Meva function was simplified in order to enhance performance. For ex- ample, counter change detection was dispensed with. Only the first and last values in the query period are used to calculate the differ- ence. Any interim value is ignored. For this reason, the duration of the query period should not exceed the interval for measured val- ues in this function. Overflow detection is not possible if this func- tion is used in combination with a balancing module. It certainly makes sense to use a report module with a query interval that cor- responds with the data acquisition interval.
	Parameterization:
	Name of the Meva function: "Counter light difference (overflow) without range"
	A datapoint must be connected to the Meva function node. It is not necessary to define a counter for this datapoint, as the permanent counter constant 1 is always used for the calculation.

Counter Light Diff.(overfl) with-	Query period
out range (continued)	The B.Data measurement journal is queried for the connected datapoint within the query period. The query uses the actual query period, e.g. one month: from = '1.4.2005 00:00:00' to = '1.5.2005 00:00:00' and NOT from = '1.4.2005 00:15:00' to = '1.5.2005 00:00:00'. In contrast to other functions, only the FROM and TO values are read from the measurement journal. All interim values will be ignored as specified in the short description. If the TO value is invalid or missing, the Meva function returns difference 0 and the STER_LUECKE status. If the TO value is valid and available, an attempt is made to calculate the difference based on the FROM value. However, a corresponding valid FROM value must be available. If this condition is not met, the function uses the last valid value that precedes the FROM value. The function performs a backward scan over a maximum period of one day. If no valid value that precedes the FROM value is found in the past 24 hours, the Meva function returns difference 0 and the STER_LUECKE status.
	Invalid source values
	All values having acquisition status 1 (invalid) or 9 (8 + 1 = last + invalid) will be ignored.
	Daylight saving time
	This function is capable of handling the daylight saving time without error for the 15-minute and 1 hour acquisition intervals. This prob- lem is of no avail anyway for larger units (days, months).
Counter Light Diff.(overfl) with-	Counter change:
out range (continued)	Counter change is not supported.
	Overflow detection:
	Counter overflow detection without count range is implemented as well. The difference is calculated starting at 0 after counter overflow has been detected.
	Example:
	1.5.2005 01:00:002000
	1.5.2005 01:15:0010
	Difference = 10
	Insufficient number of values in the interval:
	See the description of the query interval above of a TO or FROM value is invalid or missing.
	Diagnostics:
	You can set a value greater than 0 for "DB_ZAEHLER_DEBUG" in B.Data Options to enter additional diagnostics messages in the error journal.
	Filtering:
	No filtering is performed. The "DB_ZAEHLER_CHECK" option is insignificant for this Meva function.
	Bericht Bericht_Modul m_DF_CALC_ZAEHLER_LIGHT m_G_d_Zaehler_1

Count value difference with overflow, counter change	Count value difference with overflow, counter change (DF_CALC_ZAEHLER)
	Calculation of the count value difference with counter overflow, including count range and counter change.
	Inputs:
	d_Zaehler_1operating datapoint with definition of the counter
	The function returns:
	VALUE[x] = (count value CE - count value CS) * pulse valence
	CE = calculation end time
	CS = calculation start time
	Also accounts for counter overflows and counter changes.
	The count range (CAS, CAE) is included in overflow calculations.
	In detail, the function works as follows:
	Query period
	The B.Data measurement journal is queried for the connected datapoint within the query period. The query uses the actual query period, e.g. one month: from = '1.4.2005 00:00:00' to = '1.5.2005 00:00:00' and NOT from = '1.4.2005 00:15:00' to = '1.5.2005 00:00:00'. Explanation: in the example above, the first value in the query period has the time stamp '1.4.2005 00:15:00' in accordance with the B.Data definition. The last value has the time stamp '1.5.2005 00:00:00'. It is not appropriate to calculate the difference between the first and last value in the month for monthly evaluations. You need to calculate the difference between the last value of the current month and the last value of the preceding month. Therefore, from = '1.4.2005 00:00:00'.
	Invalid source values
	All values having acquisition status 1 (invalid) or 9 (8 + 1 = last + invalid) will be ignored. The same rule applies to all values having the "acquisition values" compression level.
	Counter change:
	Counter changes in the query period are also handled correctly. At least two counters must be defined for the datapoint. Consistency of the attributes of both counters is conditional, of course. The in- stallation date is decisive for the entry, while the "planned change" is being ignored. The "Count value at removal" (counter 1) and "Count value at installation" (counter 2) fields are of importance,
	too.

Count value difference with	Overflow detection.
overflow, counter change (con- tinued)	Counter overflow detection is implemented as well. Prerequisite for error-free calculations are correct entries in the "Count range start" and "Count range end" fields. The "Count range warning" is not used by this Meva function. An overflow check is also carried out before and after count changes. The "Count value at removal" (counter 1) and "Count value at installation" (counter 2) fields are, of course, relevant for this check. The difference is calculated start- ing at 0 after counter overflow has been detected. In addition to this difference, the difference between the last value and the count range end value will be added.
	Example: Count range end = 2200
	1.5.2005 01:00:002000
	1.5.2005 01:15:000
	1.5.2005 01:30:0010
	Difference = count range end - 2000 + 10 = 2200 - 2000 + 10 = 21
	Insufficient number of values in the interval.
	Given the situation, for example, that only one value is entered in the measurement journal in each month. However, you nonetheles want to evaluate the data on a monthly basis. An additional func- tionality has been created as a workaround to the fact that you need at least two values to calculate a difference.
	<ol> <li>The query period (FROM - TO) contains exactly one value that corresponds with the FROM value with regard to its time stamp As the TO value is missing, the Meva function is canceled and the STER_LUECKE status is returned.</li> </ol>
	<ol> <li>The FROM value is missing. The query is now repeated with a new value, while the old TO value is retained. This situation is indicated in diagnostics mode by the following message in the error journal: "Delta = 0 &gt; second attempt from: 31.04.2005 23:45:00 to: 1.6.2005 00:00:00".</li> </ol>
	The new FROM value is calculated based on the following rule: starting at the FROM value, the function scans the previous 24 hours to find the last valid value. If the second attempt also returns only one value, the Meva function is canceled, the STER_LUECKE status is set, and the following message is written to the error journal: "2. attempt, delta again 0 > cancel".
	Diagnostics:
	You can set a value greater than 0 for "DB_ZAEHLER_DEBUG" in B.Data Options to enter additional diagnostics messages in the error journal.
	The function name is frequently displayed with a three-digit suffix i parenthesis, e.g.: pr_check_counter(001). This number is used as additive for sorting the messages. Under the aspect that the smallest resolution of the incoming time stamp in the error journal is based on full seconds, it frequently happens that several message are assigned the same incoming time stamp.
	Caution: These messages are very extensive so that it is advisable to disable this option as soon as the analysis has been completed.

Count value difference with	Filtering.
overflow, counter change (con- tinued)	Filtering serves primarily to ignore outliers. You can enable or disable this function by setting the "DB_ZAEHLER_CHECK" option in B.Data Options (1/0).
	The counter values are usually incremented continuously, which means that the current count value is higher than the previous. If the current counter value is now suddenly less than the previous value, the function rates this status as counter overflow or reset. However, it is possible in this scenario that corrupted source values generate outliers. This means that the current value is less than the previous, while the next value is, once again, greater than the pre- vious.
	Example:
	1.5.2005 01:00:002000
	1.5.2005 01:15:000
	1.5.2005 01:30:002010
	The value for the time stamp of '1.5.2005 01:15:00' is apparently an outlier. With activated filter option, such outliers will be ignored.
	1.5.2005 01:00:002000
	1.5.2005 01:15:000
	1.5.2005 01:30:0010
	This situation is not rated as outlier, but rather as overflow.
Count value difference with overflow, counter change (con- tinued)	The filter function provides a second option, namely "DB_ZAEHLER_FILTER". This option only has an effect if "DB_ZAEHLER_CHECK" is enabled (= 1).
	With active "DB_ZAEHLER_CHECK" option, identical values that were generated in immediate succession are ignored under certain circumstances, whereby the number of values selected for the query may not be less than two. In Debug mode, such entries are consequently generated in the error journal: 'Skip date: 1.5.2005 1:15:00 value: 2000'
	Example:
	1.5.2005 01:00:002000
	1.5.2005 01:15:002000
	1.5.2005 01:30:002010
	If "DB_ZAEHLER_CHECK" is enabled and the "DB_ZAEHLER_FILTER" entry exists, all values less than the value in "DB_ZAEHLER_FILTER" are ignored.
	Example: DB_ZAEHLER_CHECK = 1 and DB_ZAEHLER_FILTER = 9
	01.05.2005 01:00:008
	01.05.2005 01:15:009
	01.05.2005 01:30:0010
	The entry with time stamp '01.05.2005 01:00:00' and value 8 will be ignored.
	Bericht Bericht_Modul Bricht_Modul Bricht_Modul Bricht_Modul Bricht_Modul Bricht_Modul Bricht_Modul Bricht_Modul Bricht_Modul Bricht_Modul Bricht_Modul Bricht_Modul Bricht_Modul Bricht_Modul Bricht_Modul Bricht_Modul Bricht_Modul Bricht_Modul Bricht_Modul Bricht_Modul

Correcting the time window	Moves the specified calculation time period by the number of peri- ods specified into the future or past.
	Inputs:
	1 datapoint (d_, e_, a_) or measuring variable (m_)
	t_Direction parameter with direction ("-": future; "+": past) and num- ber of periods, for example, "-1" to shift the data by one period into the future
Oil supply (incl. corr.)	Oil supply (incl. corr.) (DF_ZUFUHR_OEL)
	Temperature compensated calculation of the oil supply.
	Inputs:
	t_Bezugsdichteparameter [t/m³]
	t_Bezugstemperaturparameter [°C]
	t_Korrekturfaktorparameter [1/°C]
	d_Temperaturoperating datapoint [°C]
	d_Durchflussoperating datapoint [m³/h]
	The function returns:
	Supply[t] = SUM( d_Durchfluss * period of validity *
	( t_Bezugsdichte + (( t_Bezugstemperatur - d_Temperatur ) * t_Korrekturfaktor ))) / 3600
	Bericht     B

13.12 "Trends" editor

# 13.12 "Trends" editor

# 13.12.1 Trender menu bar

The Trender is operated using the mouse buttons and the menu bar or toolbar. The basic functions of Plant Explorer are briefly explained based on the example of the menu bar:

Menu	Menu commands
File	"Print"
This menu provides you with options for opening trends (*.plo files) and to close the graphic evaluation. The various functions of this menu trigger the actions you al- ready know from Windows applica- tions.	Prints the trend. The "Print Preview" function allows you to preview and make changes to the pages before printing.
	"Save" / "Save As"
	If you select a target directory during calculation, the trend is saved to the file management system and archived.
	Select "Save" to save the trend to the file system on the local workstation. The graphic evaluation is then saved under the specified name with extension *.PLO.
Edit	Using the "Cut", or "Copy" and "Paste" commands, you can transfer trend lines from B.Data to Microsoft Office. This functionality applies particularly to individually selected trend lines of the graphic view. Data transfer to the Mi- crosoft Office environment. This functionality allows you to visualize process and measurement data in real-time mode. The data can then be processed and recorded as usual in the Microsoft Office environment in a flexible man- ner.
	"Move"
	Moves a trend line in the graphic view both along the x and y coordinates, relative to other trend lines. You can enter the value by which the trend line is to be moved in an input dialog. It is also possible to pick up the line at a handle and then drag it to a different position. The "Reset" button can be used to undo your changes and also allows you to simulate profiles by means of targeted time shift operations in a graphic evaluation.
	"Select all"
	Selects all trend lines.
	"Select nothing"
	Resets the selection of trend lines.

Table 13-8 Overview of the Trender functions

Menu	Menu commands				
B.Data	"Insert trend"				
	Adds a data point to the active Trender.				
	Trend				
	Data Source       MESS_ID:     2258745       Hostname:     acquisition_server				
	R: 255 G: 0 B: 0				
	Leaved Demonstrat				
	Legend: temperature				
	OK Cancel				
	1. Enter the "MESS ID" and the "Hostname".				
	<ul> <li>"MESS_ID": Internal ID of the data point. The ID is unique for this data</li> </ul>				
	point.				
	<ul> <li>"Host name": Name of the acquisition computer from which the value is fetched.</li> </ul>				
	2. You may define the graph coloring in RGB format (range of values: 0 to 255)				
	3. You may also enter a name that is used to indicate the data point in the legend.				
	Time Zone Server				
	If the online data source (acquisition computer) and Trender visualization are available in different time zones, specify a time zone server to set up the correct time for visualization of the online data. The time zone server applica- tion usually runs on the acquisition computer.				
View	"Zoom in X" and "Zoom Out X"				
Only the functions	Changes the scaling of the X axis.				
that are currently	"Zoom in Y" and "Zoom Out Y"				
available will be ac-	Changes the scaling of the Y axis.				
tive.	"Zoom Mode"				
	In this mode, you can use the mouse to mark an area that you want to zoom with a square frame.				
	"Reset"				
	Resets the view to 100 %.				
	"Snapshot"				
	Displays the x and y value of the point selected with mouse click in the status bar. As an alternative, double-click the selected point.				

13.12 "Trends" editor

Menu	Menu commands			
Options	"Properties"			
The "Options" menu	Opens the trend configuration dialog.			
provides several	"Grid"			
visualization tools. Active formats are	Hides and shows the grid in the plot window.			
check marked.	"Legend"			
	Hides and shows the legend in the plot window.			
	"Legend Space"			
	Provides space below the X axis for the legend.			
	"Points only"			
	Displays the data only by points.			
	"Trender frozen"			
	Stops trend scrolling.			
	"Allow Horizontal Shift"			
	Allows you to shift the trend to the left or right on the horizontal axis while keeping the left mouse button pressed.			
	"Allow Vertical Shift"			
	Allows you to shift the trend along the vertical axis while keeping the left mouse button pressed. You can also combine these shift functions.			
	"Toolbar"			
	Shows or hides the toolbar.			
	"Status bar"			
	Shows or hides the status bar.			
	"Redraw"			
	Redraws all trends in the Trender. Alternative: Press the space bar.			
Window	Displays a list of all active plot windows. You can use the "Cascade", "Tile", and "Arrange icons" commands to arrange the plot windows automatically.			
Help	The Help menu provides a reference to the manufacturer of the software package and the current version number.			

# 13.12.2 Trender toolbar

The Trender toolbar enables fast access to essential menu commands. A tooltip is provided for each toolbar icon.



13.12 "Trends" editor

### 13.12.3 Trender status bar

The figure below shows the Trender status bar. The information provided in the left area of the status bar includes the tooltip and details with regard to the menu bar or toolbar items.

Click to the curve you want to shoot Shoot mode

F(04.04 20:00:00) = 12.300 Erf = STER\_OK Kor = valid with hand manipulation

The right area of the status bar provides closer details of the values selected in the graph. This includes the display of the date (dd.mm hh:mm:ss), acquisition status (Acq). and correction status (Cor) of the respective measured value.

The display of values in the legend is color coded, depending on the acquisition or correction status.

Color	Acquisition status	Correction status	
Red	<> valid	Not relevant	
Orange	valid	<> valid	

## 13.12.4 Trender legend

Right-click on the legend entry opens the legend configuration dialog directly.

L	egend Properties				
	Function d_A_E_V_116a d_A_E_V_117a		Status Visible Visible	<u>S</u> tatus <u>U</u> p <u>D</u> own	Show Minimum Maximum Average Rightmost Marker
		ОК	Cancel		

Select "Status" to change the display of the data point status: "Visible", "Hidden", or "Disable". The graph is displayed if "Visible" is set.

Visible	The graph of the data point is visible.		
Hidden	The data point is grayed out in the legend. The graph is hidden.		
Off	The data point is not available in the legend or visible as graph.		

The respective value can be shown in the display area.

Minimum	Calculated and displayed across the time range shown in the Trender.
Maximum	Calculated and displayed across the time range shown in the Trender.
Average	Calculated and displayed across the time range shown in the Trender.
Current	Displays the actual value (last value in Trender).
Marker	Displays the value marked with the cursor.

The status is taken into account for the values displayed in the legend.

- d_A_E_V_116a	Minimum	Maximum	Average	Rightmost	Marker
	03:30:00 11.600	12:30:00 25.300	12.318	00:00:00 12.300	01:00:00 1.000
<ul> <li>d_A_E_V_117a</li> </ul>	01:00:00 1.000	01:00:00 1.000	1.000	01:00:00 1.000	01:00:00 1.000

The order of data points becomes relevant if you select an object (e.g. a histogram) in the Trender that fills the area below the trend. You can select the order of data points using the "Up" and "Down" buttons in the legend properties dialog. Click "OK" to save your settings.

13.12 "Trends" editor

### 13.12.5 The configuration dialog

The shortcut menu of the Trender object contains the "Configure" command. The Trender object is opened and the configuration dialog is displayed. If the Trender is already active, select the "Tools > Properties" menu command or use the toolbar to open the configuration dialog.

The tabs of the configuration dialog are arranged in two horizontal levels. The following sections specify the configuration options that are available in the various tabs.

### "General" tab

Plot Properties 🛛 🔀
Plot Method Ranges & Limits Pen Legend Markers Bands General Scales Plot Area Grid Highlight Pen Printing
Caption text: Soll-1st-Vergleich
Plot Mode <ul> <li>Normal</li> <li>Additive</li> <li>Binary Offset</li> <li>Offset:</li> <li>Normal + Summary Function</li> </ul>
Gaps Plot
Show gaps plot <u>All off</u>
Status Symbols
Snap range: 📕 🕩 50%
OK Abbrechen Obernehmen

Use the "General" tab to configure the settings for all data points.

Caption text	Specifies the name of the Trender object.		
Plot mode	Specifies the position of the trends in the grid with relative relation.		
	Normal		
	<ul><li>Sets the standard view of plots in the X - Y coordinate system.</li><li>Additive</li></ul>		
	Sets the additive superimposed arrangement of plots . Specify the order in the "Function" area of the Plot Method" tab.		
	Binary offset		
	Shifts the trend vertically by a constant portion.		
	<ul> <li>The offset always affects the distance between the trends and the X axis, with the exception of the first trend. This means that trend 4 is shifted up by a distance equivalent to four times the value.</li> <li>Normal + Sum function Displays a separate summation trend for all configured trends.</li> </ul>		
Show gaps plot	Displays a horizontal plot of gaps.		
	This function can be used to quickly determine missing values in a set of measurements. Set "All on" in the Plot Method tab to obtain gap-sensitive measurement results with an interval setting of 900 milliseconds. This setting has the effect that the trend is interrupted in periods without existing values.		
	The "All off" setting outputs a continuous trend.		
Status symbols	Sets an icon that marks measured values with status unequal to "valid". The status bar displays details of the status.		
Snap range	Specifies the value as of which the cursor is snapped to the next value. This is a value between 0 $\%$ and 50 $\%$ , with reference to the distance between two points.		

13.12 "Trends" editor

### "Scales" tab

The "Scales" tab is used to select the scaling and labeling of the coordinate axes.

Plot Properties		
Plot Method General	Ranges & Limits Scales Plot Area	Pen Legend Markers Bands Grid Highlight Pen Printing
	Туре:	Inscription:
Bottom $ imes$ axis:	Date 💌	X1
Top⊠axis:	Standard 💌	]
Left Y axis:	Standard 💌	Y1
Right1 Y axis:	Standard 💌	]
Right2 Y axis:	Standard 💌	]
		OK Abbrechen Obernehmen

Туре	Specifies the scaling type. The following types are available in this area:		
	Standard		
	• Integer		
	Logarithmic		
	• Date		
	• Time		
Labeling:	Specifies the labeling of the axes.		

## "Plot Area" tab

Use this tab to define two independent areas above the X axis. You can use these areas, for example, for the direct comparison of the amplitude of two trends.

Plot Properties							
Plot Method General	Ranges Scales	& Limits   Pe Plot Area	en Lege Grid	end Markers Highlight Pen	Bands Printing		
	Calculate fi	rom Set man	ually: Mi	nimum: Max	simum:		
Bottom X axis:	V		0	1			
Trending	Shift: 0.	25					
Top⊠axis:	$\overline{\mathbf{M}}$	V	-1	1			
Trending	Shift: 0.	25					
Left Y axis:		M	-1	1			
Right1 Y axis:	$\overline{\mathbf{V}}$	V	-1	1			
Right2 Y axis:	$\overline{\mathbf{M}}$	V	-1	1			
			ОК	Abbrechen	Übernehmen		

Calculate from functions:	Specifies that the Trender automatically calculates the range of values of the axes according to the trend to display. Calculation in the Trender is oriented on the maximum values generated.
Trending shift	Specifies the percentage of the X axis to update in online mode. The range of values is therefore from 0 to 1 $(1 = 100 \%)$
Set manually	Specifies the Min and Max range of values for the axes.

13.12 "Trends" editor

## "Grid" tab

Use the "Grid" tab to configure the color and style of the grid lines.

Plot Properties				
Plot Method Ra General Scale	I	Pen   Grid	- T	ands   hting
Bottom X axis type:	Dot	•	Color	
Top X axis type:		-	Color	
Left Y axis type:	Dot	•	Color	
Right1 Y axis type:		Ŧ	Color	
Right2 Y axis type:		-	Color	
		OK	Abbrechen <u>Ob</u> ern	nehmen

Axis identification	Specifies the grid line style for the respective axis.
	Continuous
	Dashed
	Dotted
	Dash dot
	Dash-dot-dot
	Null
Color	Specifies the color of an axis by means of color selection dialog.
	Color   Basic colors:   Basic colors:

13.12 "Trends" editor

### "Selected Plot" tab

Use the "Selected Plot" tab to configure the method to visualize trend markers.

Plot Properties	
Plot Properties Plot Method Ranges & L General Scales Solid Dash Dot Dash-Dot Null	Limits Pen Legend Markers Bands Plot Area Grid Highlight Pen Printing Line width: 0 x 0.1 mm Color Real selection color is XOR of the selected color with background
	OK Abbrechen Ü <u>b</u> ernehmen

Line style	Specifies the line style.
Line width	Specifies the with of the selected plot line.
Line width Color	Specifies the with of the selected plot line. Specifies the color of the selected plot by means of color selection dialog.
	Define Custom Colors >>       OK       Cancel

### "Print" tab

Use the "Print" tab to specify the header content of the plot to print.

The "Header" is aligned to center. The "Date" is displayed on the right side, while the "File name" is displayed on the left.

<b>Plot Properties</b>	
Plot Method General	Ranges & Limits Pen Legend Markers Bands Scales Plot Area Grid Highlight Pen Printing
Header:	02.04.2007 00:00:00 - 09.04.2007 00:00:00
Date:	
Filename:	
	OK Abbrechen Ü <u>b</u> ernehmen

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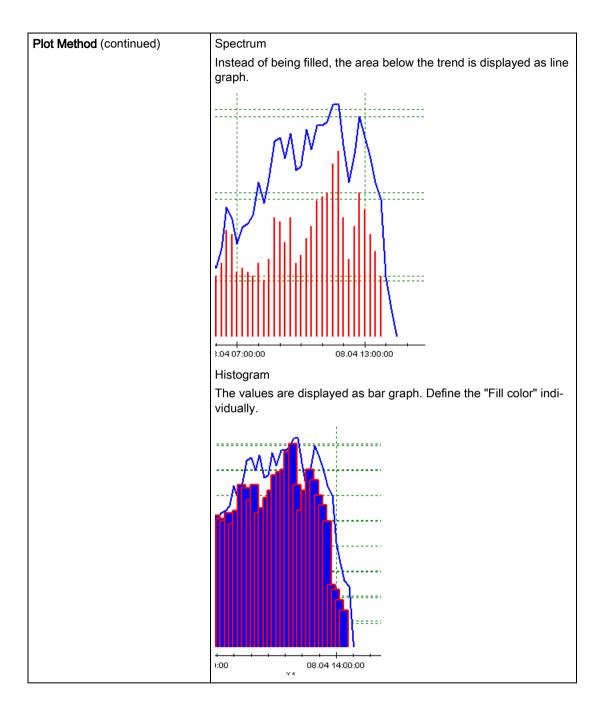
### "Plot Method" tab

The "Plot Method" reflects the fundamental method of plot visualization.

Plot Properties	
General Scales Plot Area Grid Highlig Plot Method Ranges & Limits Pen Legend Function d_EL_Consumption_Incomer_2 d_EL_Consumption_Incomer_2	ht Pen   Printing   Markers   Bands
Add Rename Remove	Sequence
Polyline	
C Polygon Filling Color	
C Polygon with X axis border	
C Spectrum	
C Histogram Base Y value: 0	
C Contiguous histogram	
Points (radius = Pen->Line width, should be > 5)	Set Default
Gap Sensitive Interval: 900	Restore Default
ОК С	ancel Apply

Function	Specifies the data point to configure.
	• Add
	Adds a graph.
	Rename
	Renames operating data points in the Trender.
	Remove
	Deletes selected operating data points from the Trender.
	Sequence
	Opens the "Legend" dialog for changing the order of graphs.
	The order of data points becomes relevant if you select an object (e.g. a histogram) in the Trender that fills the area below the trend.
Plot Method	Specifies the trend visualization mode.
	"Polyline"
	The measuring points will be interconnected.
	"Polygon" The area above or below the limit will be filled. The limit used is
	always the actual (last) value. Define the "Fill color" individually.
	Polygon with X axis border
	The area above or below the limit will be filled. The X axis represents the border.
	M

13.12 "Trends" editor



Plot Method (continued)	Contiguous histogram
	The values are displayed as bar graph. The bar width is adjusted automatically. Define the "Fill color" individually.
	Dots
	The values are only visualized as dot graph.
Set Default	Saves the current settings made in this tab to the active PC. These setting are used as default values for new trends.
Restore Default	Reset to factory settings for new trends: dot graph, gap sensitive, Interval 900.
Gap sensitive	Specifies interruption of the polyline graph if gaps are detected. In addition, specify the "Interval".
Interval	Specifies a value in "milliseconds" as of which a missing value is recognized as gap.

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# "Ranges & Limits" tab

Plot Properties
General Scales Plot Area Grid Highlight Pen Printing Plot Method Ranges & Limits Pen Legend Markers Bands
Function d_A_E_V_116a
Add Rename Remove Sequence
X Axis
Allow trend (dynamic adding of points)
Bottom Minimum value:
C Top 🗖 Maximum value: -1
Y Axis
C Left Minimum value:
C Right 1
C Right 2
OK Abbrechen Ü <u>b</u> ernehmen

Use the "Ranges & Limits" tab to define the necessary axes.

Function	Specifies the data point to configure. See the "Plot Method" tab.	
X axis	Specifies the axis view.	
	You may also specify the axis scaling. The axis is scaled automati- cally if no entry is made.	
Y axis	Assigns one of three possible Y axes to the data point.	
	You may also specify the axis scaling. The axis is scaled automati- cally if no entry is made.	

### "Pen" tab

Configure the pen function of the respective trend in the "Pen" dialog.

Plot Properties
General Scales Plot Area Grid Highlight Pen Printing Plot Method Ranges & Limits Pen Legend Markers Bands Function
Add Rename Remove Sequence
<ul> <li>Solid</li> <li>Line width: 5</li> <li>x 0.1 mm</li> <li>Dash</li> <li>Dot</li> <li>Dash-Dot</li> <li>Color</li> </ul>
C Dash-Dot-Dot C Null Set Default Restore Default
OK Abbrechen Ü <u>b</u> ernehmen

Function	Specifies the data point to configure. See the "Plot Method" tab.
Line style	Specifies the line style.
Line width	Specifies the line width.
Set Default	Saves the current settings made in this tab to the active PC. These setting are used as default values for new trends.
Restore Default	Reset to factory settings for new trends: continuous, line width 5.

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# "Legend" tab

Specify the legend color and text in the "Legend" tab.

Plot Properties
General Scales Plot Area Grid Highlight Pen Printing Plot Method Ranges & Limits Pen Legend Markers Bands
Function d_A_E_V_116a
Add Rename Remove Sequence
Text: d_A_E_V_116a
Color
OK Abbrechen Ü <u>b</u> ernehmen

Function	Specifies the data point to configure. See the "Plot Method" tab.					
Text	Specifies the text that is displayed in the data point legend.					
	Note:					
	The online functionality is only available if the data is acquired via					
	the kernel.					

### "Marker" tab

Use the "Marker" tab to specify an additional icon that you can use to improve the view of a data set. The icon is set periodically and is also displayed in the legend. The icon improves legibility, for example, for monochrome printing.

Plot Properties
General Scales Plot Area Grid Highlight Pen Printing Plot Method Ranges & Limits Pen Legend Markers Bands Function d A_E_V_116a
Add Rename Remove Sequence
None     Color     Color
C Rectangle C Circle C Letter Letter:
OK Abbrechen Ü <u>b</u> ernehmen

Function	Specifies the data point to configure. See the "Plot Method" tab.				
Identifier	Defines the identifier for the plot.				
Color	Specifies the color by means of color selection dialog.				
Letter	Specifies the letter to display in the icon.				

13.12 "Trends" editor

### "Bands" tab

**Plot Properties** × General Scales | Plot Area | Grid Highlight Pen Printing Bands Plot Method Ranges & Limits Pen Legend Markers Function d\_A\_E\_V\_116a • Add... Rename... Remove Sequence... Parent band function: Exclude outer area 📃 Along X axis Along Y axis  $\times$  Min: 0 Y Min: X Max σ Y Max: Exclude inner area 🔲 Along Yaxis 🗌 Along X axis  $\times$  Min: Y Min: 0 X Max Y Max 0 ΟK Abbrechen 0<u>b</u>ernehmen

Use the "Bands" to define the the bands to highlight.

Function	Specifies the data point to configure. See the "Plot Method" tab.
Exclude outer area	Specifies the definition of bands along the Y or X axis. Enter the
Exclude inner area	relevant value.

The following section specifies the database jobs that are avai	able.
---	-------

Database job	Description						
Filing folder dele- tion period defaults	For each report storage folder, you can specify a time period that has to expire before the "Job for deleting analyses" is permitted to delete all evaluations from this folder. The "storage folder deletion defaults" job resets these deletion periods to definable values.						
	You may only reset storage folders to defaults that have been assigned the following query types: "Year", "Month", "Day", "Month variable", "AdHoc". The corresponding defaults are saved to B.Data Options.						
	Query types Entry in B.Data Options						
	Year REPA_LOES_JAHR_DEF						
	Month	REPA_LOES_MONAT_DEF					
	Day	REPA_LOES_TAG_DEF					
	Month variable	REPA_LOES_MONATVAR_DEF					
	AdHoc	REPA_LOES_ADHOC_DEF					
	If one of these rows is missing in the B.Data Options, the deletion period for this query type is not modified. Enter the deletion period in the BDTS_NUMBER column of the B.Data Options and specify the "Day" unit for all entries.						
Archiving MV er- rors	This job deletes only the entries from the error journal that originate from the measurements editor and that have exceeded a defined age.						
	The following entries are necessary	in B.Data Options:					
	FEJO_EXPORT_MESS_UNTIL	Specifies the number of days until entries can be deleted					
	FEJO_EXPORT_MESS_FLAG	If set to 1, the entries will be exported to a file before they are deleted.					
	FEJO_EXPORT_MESS_PATH Specifies the export directory to be used. The file name "FEJO_MESSWERTE_EXPORT_" plus the date (DD-MM- YYYY) are set permanently.						
	The job is canceled without error me	essage if one of these entries is missing.					
	<b>Note</b> : The user running the Oracle application needs write permissions for the specified directory.						
auto.Report f.curr.	Starts only automatic reports of the "Day curr." query type. Whether or not the "keep flag" is set for the evaluation generated in this way depends on the "DEFAULT_CAHE_BEHALTEN" entry in B.Data Options. The flag is set if the value 1 is set or if the entry is messing. The flag is not set if the value is <b>0</b> .						
day							
auto.evaluation	Starts only automatic reports of the	query types "Next day", "Next week" or "Next month".					
f.next day/week/month	Whether or not the "keep flag" is set for the evaluation generated in this way depends on the " <b>DEFAULT_CAHE_BEHALTEN</b> " entry in B.Data Options. The flag is set if the value <b>1</b> is set or if t entry is messing. The flag is not set if the value is <b>0</b> .						
Delete old IT secu- rity Data	This job deletes only the security entries from the error journal that have exceeded a defined age. The term security denotes information such as the login/logoff times of a specific user, incorrect password input, etc.						
	The following entries are necessary	in B.Data Options:					
	ITSEC_EXPORT_UNTIL Specifies the number of days until entries can be deleted.						
	ITSEC_EXPORT_FLAG	If set to <b>1</b> , the entries will be exported to a file before they are deleted.					

Database job	Description					
	FEJO_EXPORT_PATH		Specifies the export directory to be used. The file name "FEJO_ITSEC_EXPORT_" plus the date (DD-MM-YYYY) are s permanently.			
	The job is canceled with	out error me	nessage if one of these entries is missing.			
	Note: The user running the	ne Oracle a	pplication needs write permissions for the specified directory.			
Export job SAP R/3 PM historical PD 6h	Exports the counter value history of the <b>PREVIOUS DAY</b> to a file at intervals of 6 hours and in "SAP R/3 PM" format. The data points concerned must be assigned to the "SAP PM VT historical 6h" export function. Assign these to the export function in the data point configuration of the Export dialog. The file name is also specified in this dialog. A time stamp with "yyyymmddhh24mi" format is added to the file name.					
	Format	Meaning				
	уууу	Year				
	mm	Month				
	dd	Day				
	hh24	24 hours mode				
	mi	Minutes				
		Specify the export directory at the "BDATA_EXPORT_PATH" entry in B.Data Options. An error mes- sage is output and "C:\Data\Import" is returned as default directory if this entry is missing.				
	Note: The user running the	ne Oracle a	pplication needs write permissions for the specified directory.			
Export job SAP R/3 PM historical PPD 6h	and in "SAP R/3 PM" forr ical 6h" export function. A	mat. The da Assign these is also spe	the <b>DAY BEFORE YESTERDAY</b> to a file at intervals of 6 hours at points concerned must be assigned to the "SAP PM VT histor- e to the export function in the data point configuration of the Ex- ecified in this dialog. A time stamp with "yyyymmddhh24mi"			
	Format	Meaning				
	уууу	Year				
	mm	Month				
	dd	Day				
	hh24	24 hours mode				
	mi	Minutes				
	Specify the export directory at the "BDATA_EXPORT_PATH" entry in B.Data Options. An error mes- sage is output and "C:\Data\Import" is returned as default directory if this entry is missing.					
	Note: The user running the Oracle application needs write permissions for the specified directory.					

Database job	Description						
Recalculate de- rived measure- ments job	Derived measurements are calculated as a function of a measuring variable. A large calculation tree and many data points may be connected to this measuring variable. and whenever a data point has changed, the derived measurement has to recalculated for this time period. This is exactly what this job is doing. Whenever a data point has changed, the system determines whether or not this DP is relevant to the calculation of a derived measurement. If yes, the information for the necessary recal- culation is saved to an interim table. Our job reads this table and calculates the corresponding de- rived measurements. <b>Configuration:</b>						
	😡 Derived Meas	urement =	x x				
	From:	2.07.2012, 00:00:00 🖃					
	To:	02.07.2012, 00:00:00 💌					
	Calculated until:	02.07.2012, 00:00:00 💌					
	Categorization:	realvalue					
	Priority:	P1					
		Auto Calculation					
		Actual Model					
	Comp Level:	Entry values					
	OK © Cancel						
	The " <b>Auto Calculation</b> " check box must be set to enable recalculation of a derived measurement. For the purpose of classification, it is necessary to distinguish between the "actual value" and "forecast"						
	value. In contras	st to the forecast value, the	actual value is not recalculated if a time stamp with future				
	date is set for a value change at an assigned data point. The "Priority" field is currently not evaluated. "Actual model" means the following: The derived measurement is always calculated based on the						
			ation tree that existed at a specific time in the past.				
	Entries in B.Data		must be set to 1.				
	ABGL_CHANGE		This and the next entry belong to each other. Recalcula-				
			tion may only be interrupted if this value = <b>1</b> .				
	ABGL_CHANGE_IMPORT		Import functions may set this value to indicate the num- ber of values most recently imported. Recalculation is stopped if the value overshoots a limit of <b>50000</b> and re- sumes after the value has dropped below this limit again. Wait with your recalculation when handling large import volumes.				
		E_KLASSIFIZIERUNG	You may always disable the distinction between actual and forecast values when using this classification func- tion.				
	ABGL_DEBUG		All recalculations are logged to the error journal if the value is $\geq 2$ .				

Database job	Description				
DP rollout job	This job can be used for the cyclic allocation (rollout) of values to defined measurements. This action is only permitted for data points or derived measurements. These measurements are saved to a specific folder. The node ID (top right) of this folder is stored in B.Data Options. As a matter of principle, existing values will not be overwritten. The roll-out is based on the cycle time and replacement value for the respective measurement. Switch the measurement type to "Constant" if you want to calculate a replacement value and then define a value for this constant in the Detail tab. On completion, restore the original measurement type setting, i.e. data point or derived. The default value 0 is set for the constant (replacement value). Entries in B.Data Options				
	AUSROLL_ROOT_ORDN	ER	Specifies the node ID of the folder node that contains the de- rived measurements or data points to roll out. The job is can- celed and a corresponding error message is generated if this entry is missing.		
	AUSROLL_ANZAHL_MON	NATE		the number of months to be rolled out, beginning with start. The default value is <b>36</b> , i.e. three years.	
	AUSROLL_INIT_FLAG		If = 1: The entire time frame that has been defined for the rollout will be processed. Existing gaps will be padded in this way. If $0$ = Rollout only up to the first available value. The default is $0$ .		
	AUSROLL_STATISTIK		Information about the number of data points already rolled out by the active job.		
Job for ASCII export to B.Data standard	Exports all data point values measured on the <b>PREVIOUS DAY</b> in CSV format to an ASCII file. The data points concerned must be assigned to the "B.Data Standard" export function. Assign these to the export function in the data point configuration of the Export dialog. The file name is also specified in this dialog. A optional time stamp with "yyyymmddhh24mi" format can be added to the file name. The file name has the extension ".TXT". The data is saved to the file successively for each data point.				
	Format	Meaning			
	уууу	Year			
	mm	Month			
	dd	Day			
	hh24	24 hours	mode		
	mi	Minutes			
	Entries in B.Data Options				
	BDATA_EXPORT_PATH			Export directory. An error message is output and "C:\Data\Import" is returned as default directory if this entry is missing.	
	BDATA_EXPORT_FILENAME_MODUS			If = 0: File name with date and time.	
				If = 1: File name <b>without</b> date and time	
	The following example shows an extract from an exported file: "COMP_LEVEL";"MSJO_DATE";"TIME_ID";"MEAS_ID";"MSJO_VALUE";"MSJO_INTERVAL";"MSJO _DVALID";"STER_FLAG";"STKO_FLAG"				
	"2100";"07.04.2008 00:15:00";"1002";"127795";"100";"900";"900";"0";"0" "2100";"07.04.2008 00:30:00";"1002";"127795";"99";"900";"900";"0";"0"				
	"2100";"07.04.2008 00:45:	00";"1002	2";"127795";"98";"900";"900";"0";"0"		
	"2100";"07.04.2008 01:00:00";"1002";"127795";"97";"900";"900";"00";"0";"0"				
"2100";"07.04.2008 01:15:00";"1002";"127795";"96";"900";"900"				5";"96";"900";"900";"0";"0"	
	Note: The user running the Oracle application needs write permissions for the specified directory.				

Database job	Description								
Job for ASCII export prognosis EDM	Exports all measured values of a data point in CSV format to an ASCII file, starting on the current day (00:15:00 h), including available forecast values. The data points concerned must be assigned to the "EDM prognosis" export function. Assign these to the export function in the data point configuration of the Export dialog. The file name is also specified in this dialog. A optional time stamp with "yyyymmddhh24mi" format can be added to the file name. The file name has the extension ".TXT". The data is saved to the file successively for each data point.								
	Format	Meaning							
	уууу	Year							
	mm	Month							
	dd	Day							
	hh24	24 hours mode							
	mi	Minutes							
	Entries in B.Data Options								
	BDATA_EXPORT_PATH			ory. An error message ort" is returned as defa ng.					
	BDATA_EXPORT_FILENA	ME_MODUS	If = 0: File na	me <b>with</b> date and time					
			If = 1: File na	me <b>without</b> date and ti	ime				
	The following example shows an extract from an exported file that contains the following data: Date, time, measured value, and status. Local date and time <b>without</b> daylight saving time.								
	08.04.2008;23:15:00;100;0								
	08.04.2008;23:30:00;99;0								
	08.04.2008;23:45:00;98;0								
	09.04.2008;00:00:00;97;0								
	09.04.2008;00:15:00;96;0								
	Note: The user running the Oracle application needs write permissions for the specified directory.								
Job for auto. Do- main assignment	The job processes all configured folders and inherits the domains contained in the node level folder all nested objects.								
	Visualization	5 File Measuring Va	riable 🍵 Prototype	🖼 Profile 😽 Tarif	Production				
	Folder Report	Se Parameter		🏀 Day	Consumption				
	Folder Reporting	Input Objects	Preprocessin		Production				
	AVZ     Domainfolder		1	Children	Description 541566				
	🚞 Domain_01			Domain_02	541567				
	🛅 Domain_02 🛅 Domain_03			Domain_03	541568 541569				
	En Construction								
	This means that if "domain_01" is assigned to the gas domain node, the job assigns this gas domain to all nested objects. The job only adds domains without deleting additional ones that may exist.								
	Seeing that the job does not have a GUI interface, you will have to modify the source roots to be inherited in the B.Data tree directly in the body of the BDATA_JOBS package. This means that "list_of_nodes" must be initialized with the list of node IDs of the source roots of the domain.								
	nodes list_of_nodes := list_	_of_nodes(541556,54	1557,541558)	•					
	You can handle this task using tools such as PL/SQL Developer, Oracle Enterprise Manager sole, or similar.								

Database job	Description		
Job for automatic evaluations	Starts the calculation of automatic reports. Query types for which separate jobs are available will be excluded, e.g.: "Day curr.".(job: "auto. evaluation f.curr. day"), "next day", "next week", "next month" (job: "auto.evaluation f.next day, week, month". You cannot generate automatic evaluations for the "Ad-Hoc" query type. Whether or not the "keep flag" is set for the evaluation generated in this way depends on the "DEFAULT_CAHE_BEHALTEN" entry in B.Data Options. The flag is set if the value <b>1</b> is set or if the entry is messing. The flag is not set if the value is <b>0</b> .		
Generate job for batch data	Generates batch data in the following for         Image: Batchlist         From 26.04.2012 01:00:00 To         Material (all)         Equipment         Paper Maschlin         BatchID         Starttime         Endtime         Source         12458         26.04.2012 05         132600         26.04.2012 13         16125         26.04.2012 20         26.04.2012 20         26.04.2012 20         26.04.2012 20         26.04.2012 20         26.04.2012 20         26.04.2012 20         26.04.2012 20         26.04.2012 20         26.04.2012 20         26.04.2012 20         26.04.2012 20         26.04.2012 20         26.04.2012 20	:16:18 • Refresh	
Job for correction of the measure- ment journal	The corrective replacement value function is used to defragment measured value sets or to write a permanent replacement value to an operating data point. The following four replacement value strategies are available:		
	None	No data point correction.	
	LRU (Least Recently Used)	The data set is corrected using the last value found before the gap.	
	FIS	The data set is corrected using the values of a different data point. This data point must be connected to the data point node to be corrected.	
	Substitute value	A replacement value is used for correction. Input of the value as constant type.	

Database job	Description		
	Set a "corr. until" date in the corresponding data point configuration before you launch the job.		
	Weasurement - d_EL_Consumption_Incomer_1		
	Name:     d_EL_Consumption_incomer_1       Description:     EL Consumption 1		
	Inventory N#: NO_KKS	Ident. Token:	
	Process: a_erf_ASCII_FTP	Creation Date: 12/23/2011 8:40:11 AM	
	Unit: KWh	Log to DB Valid at: 12/23/2011 8:40:11 AM ▼	
	Input Unit: 🔲 📶	Valid until: 1/1/2500 12:00:00 AM	
	Function: Measurement	Priority High	
	Versionizing: No	placement NO V Replace Invalids	
		Iculation Window.	
	Co	nrrected until: I/1/2009 12:00:00 AM	
		ne period between the "corr. until" date and the start time of the job. , the "corr. until" date will be updated accordingly.	
Job for deleting the		from the error journal that have exceeded a defined age and do not	
error journal	originate from the measuremen		
	The following entries are neces	sary in B.Data Options:	
	FEJO_EXPORT_UNTIL	Specifies the number of days until entries can be deleted	
	FEJO_EXPORT_FLAG	If set to 1, the entries will be exported to a file before they are delet- ed.	
	FEJO_EXPORT_PATH	Specifies the export directory to be used. The file name "ERRJO_EXPORT" plus the date (DD-MM-YYYY) is set permanent-	
		ly.	
	The job is canceled without error message if one of these entries is missing.		
	Note: The user running the Oracle application needs write permissions for the specified directory.		
Job for deleting the search folder	Deletes all entries from the "Search results" folder		
Job for route syn- chronization	Authorized users may define or extend the reading routes for the various data acquisition devices in the "Route Planning" directory of the B.Data user system.		
	After having created the route, this user must enter the route synchronization job in the job queue. This job prepares the route for use in the synchronization process.		
	It is not necessary to repeat the	job if no changes were made to the route.	
	-	ed with the mobile data acquisition device in each sync cycle. Initiali- when the device is inserted into the charging station.	

Database job	Description	
Job for compress- ing the measure- ment journal	Job for compressing or deleting measurement values. It is not necessary to parameterize the relevant data points, as this is done in the compression dialog of the data point configuration.	
ment journal	Compression	
	Type: Compress to avg	
	From: Entry values	
	To: Daily values	
	Activity: no activities after compression	
	Comp. until: 01.01.2007 00:00:00 V	
	Active	
	OK X Cancel	
	Set the "Active" check box to activate the compression.	
	The following options are available for handling the measured value sets:	
	Compress to maximum	
	Compress to minimum	
	Compress to mean value	
	Expand	
	Expand divide amount of values	
	Interpolation	
	Delete measured values	
	Sum	
	Sum Real	
	<ul> <li>Counter diff.(overfl,change) without range</li> <li>Counter Difference incl. overflow and change handling</li> </ul>	
	<ul> <li>Counter Difference incl. overflow and change handling</li> <li>15-minute values</li> </ul>	
	2-hour values	
	<ul> <li>1/2-day values</li> </ul>	
	Hourly values	
	Daily values	
	Weekly values	
	Monthly values	
	Annual values	

Database job	Description		
Job for compress- ing the measure- ment journal (continued)	It is only possible to compress shorter intervals into a longer interval and to expand a longer interval to shorter intervals. Note that expansion to weekly intervals is not permitted. The term "entry values" denotes the measured values that were originally imported into the B.Data system. The input data can be deleted after compression. Based on the "compressed until" date and provided corresponding data is available, the intervals are always compressed, expanded, or deleted until the time of job start. The "compressed until" date is compressed accordingly on completion and may be edited manually by users.		
	If "no action after compression" was activated, the entry and compressed values will be available in the same data point. The values to be displayed or processed depend on the compression status.		
	Expansion encompasses the source values that are available as "entry values" and saved in accord- ance with the corresponding acquisition level. Example: A cycle time of "1 hour" is defined for a data point. Assuming that daily values are input for this data point (acquisition level = entry values) and expanded to these hourly values, the daily values are copied to acquisition level "daily values", which means that the expanded values are now stored as "entry values". This solution lets you work with expanded values in the "Entry values" dialog and access the output data in the "Daily values" dialog.		
	The "Interpolation" type is only available for the compression of entry values and also serves to pad missing time stamps based on the acquisition pattern of the data point (non-cyclic counter readings).		
	Whether or not to display a done message in the "Logging Editor" can be specified by means of an entry in the PRINT_VOLLZUGS_MELDUNG row of the B.Data Options. A message is only output if this setting equals 1.		
MSQL import job	The job imports data from a table in a Microsoft SQL Server database into the B.Data system. This table must be named "tblEmsExport". A data point to be imported must be active and assigned to the process with ID 572 (usually the "a_acq_DB" process). The data point address must correspond to the "tta_id" in the SQL Server table. It is assumed that the time stamps in the SQL Server table are available in local time format <b>without</b> daylight saving time. If a value greater than 0 is set in the IMPORT_DEBUG row in B.Data Options, a corresponding entry is written to the "Logging Editor" at the start and end of the job. At the end as statistics. This function is not included in the standard software package.		
Job for general recalculation	Reads the data from the B.Data Job Queue and completes the compressions, expansions and cor- rections pending, as well as the recalculation of derived measurements.		
	During import, it is not always possible to generate all parameterized compressions. This applies particularly to individual measured values that were imported in an unexpected order (subsequent input). These values are queued in a data structure and processed by the "Job for general recalculation".		
	B.Data Job Queue = X		
	Active jobs: Job Function Tot. Interval B Error Next		
	300       Partadoli       100.       Interval       B       Endi       Next         3888       Job Nachbere       891       SYSDATE +10       N       0       12/11/2012 1:3         Image: Start new job       Image: St		

Database job	Description				
PDR import job	Import from the data network (PDR). The data network represents a public domain resource that can be used by different systems to import and export data. The following specification is restricted to B.Data. The time stamps of the measurement values are available on the data network in UTC format. The values are converted to local time format during the import. The data are imported directly into the measurement journal without being routed via TB_MESZJOURNAL4. Each import may include up to 100,000 data records. A data point to be imported must be active and assigned to the process with ID 572 (usually the "a_acq_DB" process). The assignment to the PDR data records is based on the data point address.				
	Entries in B.Data Options:				
	IMPORT_DEBUG	If the value = 1, statistics information with regard to the ported is written to the "Logging Editor".	ie data im-		
		If the value = <b>3</b> , the exclusion of non-cyclic time stam is included in the log entry.	ps by filtering		
	AZYKLISCH_BLASTER	Data records containing a acyclic time stamp that doe the parameterized cycle time are excluded by filtering to a file. This file is named "ACYCL_" plus the date in "YYYY_MM_DD" format and ".TXT" extension.	and logged		
	BDATA_LOG_PATH	Path for the file with non-cyclic time stamps.			
	ABGL_CHANGE	If = 1: Imported data records are checked for the pres calculated derived measurements. Refer to "Recalcul measurements job".			
	ABGL_CHANGE_IMPORT	Logs the number of data records that were successful This information is needed during recalculation of der urements.			
	The status is converted during im	The status is converted during import.			
	B.Data	PDR			
	STER_INVALID	NULL			
	STER_OK	0, 16, 64, 128, 256, 512, 1024, 2048, 4096, 8192, 16	384		
	STER_INVALID	1, 2, 4, 32768			
	STER_ERSATZWERT	8, 32			
	STER_CONFUSE	Remainder			
	Note: The user running the Oracle application needs write permissions for the specified directory.				
PDR export job	<b>export job</b> Exports B.Data to the data network (PDR). The data points concerned must be assigned export function. Assign these to the export function in the data point configuration of the log. The data point ID for PDR is stored in the Identification Token field. The times are concerned time format (B.Data) to UTC format (PDR). Entries in B.Data Options:		Export dia-		
	IMPORT_DEBUG	If the value = $1$ , statistics information with regard to the	e data ex-		
		ported is written to the "Logging Editor".			
	The status is converted during the export, too.				
	B.Data		PDR		
	·	Correction status	PDR		
	B.Data	Correction status 0, 64	PDR 0		
	B.Data Acquisition status				
	B.Data Acquisition status STER_OK	0, 64	0		

Database job	Description		
	STER_INVALID	Not relevant	1
	STER_ERSATZWERT	Not relevant	8
	Remainder	Not relevant	1
Job PDR config matching	Synchronizes the configuration in B.Data for PDR data points. This job is launched for data points that import data from the PDR and for DPs to export data to the PDR. The PDR and B.Data are linked by means of the technological address (PDR) and data point name (B.Data). No new data points are created in the B.Data system, i.e. only their address (import) or the identification token (export) will be adapted. A data point to be imported must be active and assigned to the process with ID 572 (usually the "a_acq_DB" process). The data point to be exported must be assigned to the "SAT250 EDM" export function. All addresses of the data points to be imported from the PDR are set to "???" by default. The same applies to the identification token field for data points to be exported. Synchronization also encompasses specific properties that were assigned to the data point by means of import from the PDR to B.Data and vice versa (by export).		
Job PDR config matching with signal PDR	Configurations are only synchronized if a specific flag was set in the PDR.		
RSI import job	Import from the SCALA SAT250 control system. The time stamps of the measurement values in SCALA are available in UTC. The values are converted to local time format during the import. The import is executed by means of TB_MEASJOURNAL4. Each import may include up to 100,000 data records. A data point to be imported must be active and assigned to the process with ID 572 (usually the "a_acq_DB" process). SCALA data records are assigned based on the data point address. It is also possible to transfer the imported data to the B.Data kernel. The "Kernel" check box must be set accordingly for the selected data points. The distinction is made between counters and data points as different values will be imported. The distinction is made in the SCALA system and evaluated in B.Data.		
	Entries in B.Data Options: IMPORT_DEBUG	If the value = 1, statistics information with rega imported is written to the "Logging Editor".	rd to the data
	The status is converted during imp		
	If this concerns a counter		
	B.Data	PDR	
	STER_INVALID	NULL	
	STER_OK	65536, 65568	
	STER_INVALID	Remainder	
	Standard data point		
	B.Data	PDR	
	STER_INVALID	NULL	
	STER_OK	0, 16, 64, 128, 256, 512, 1024, 2048, 4096, 81	92, 16384
	STER_INVALID	1, 2, 4, 32768, 131072	
	STER_ERSATZWERT	8, 32	
	STER_CONFUSE	Remainder	
Delete job (inter- nal)	Internal job that is called automati terize this job.	cally by the system. It is neither possible nor necess	ary to parame-

Database job	Description			
Job for deleting analyses	Serves to delete evaluations that have exceeded a specific age. The end of the period as of which the data may be deleted can be defined separately for each storage folder in the deletion period and unit field. One year is set as the default deletion period. It is only possible to delete evaluations for which the Keep check mark is not set. Whether or not this check mark is set automatically depends on an entry in B.Data Options. You may set this check mark manually for any evaluation. Entries in B.Data Options:			
	DEFAULT_CAHE		If the entry = 1 or missing the	ne keep check box is set for new
			evaluations.	
			If the entry = 0, the check m	
	DELETE_CALCS_	_UNTIL	Obsolete and no longer use	d.
	Report Query T	ype - Month		x
	Query Type:	Month		
	Description:			▲
				<b>T</b>
	Compression Level:	Entry values		•
	Persistence Time:	1 U	nit. Y	
		Start Automatically		
		Print Automatically		
		Mail Automatically		
		• Excel O PDF		
		Save Automatically to	o Directory	
		• Excel O PDF		
		<b>√</b> 0К	🖉 Cancel	
Job for purging acquisition data	Deletes measurement values that have been assigned data points and exceeded a definable age. You can define the expiry period for deletion separately for different cycle times in the B.Data Op- tions.			
	DELETE_MSJO_I	MIN	Cycle time of 1 minute	
	DELETE_MSJO_	5MIN	Cycle time of 5 minutes	
	DELETE_MSJO_	15MIN	Cycle time of 15 minutes	
	DELETE_MSJO_H	HOUR	Cycle time of 1 hour	
	DELETE_MSJO_I	DAY	Cycle time of 1 day	
	DELETE_MSJO_I	MON	Cycle time of 1 month	
	DELETE_MSJO_(	COMMIT	Specifies the number of data COMMIT is set. Default: <b>10</b>	a records to be deleted before 00
	message if an ent	ry is missing in B.Da	ta Options, with the exception	. The job is canceled without error of DELETE_MSJO_COMMIT . assigned one of the listed cycle

Database job	Description		
Delete measure-	Serves to delete measurement values that have exceeded a definable age.		
ment journal job	Entries in B.Data Options:		
	DELETE_MSJO_UNTIL	Age in days as of which deletion is permitted. The job is can- celed and a corresponding error message is generated if this entry is missing.	
	DELETE_MSJO_COMMIT	Specifies the number of data records to be deleted before COMMIT is set. Default: <b>1000</b>	
Report (internal)	Internal job that is called automatically by the system. It is neither possible nor necessary to parameterize this job.		
Sort job (internal)	Internal job that is called automatically by the system. It is neither possible nor necessary to parameterize this job.		

13.14 Functions for Task Management

# 13.14 Functions for Task Management

### Overview

The following section specifies the tasks that are available.

Task	Function		
ODBC_Import_Task	The Task Manager "ODBC_Import_Task" provides two tasks for data trans-		
ODBC_IMPORT.cmd	fer via ODBC Connector.		
ODBC_IMPORT_ALLE. cmd	ODBC_Import_Task     Import_selected_ODBC_sources     Import_selected_ODBC_sources     Import_all_ODBC_sources		
	ODBC_IMPORT.cmd: Imports all active data channels that are assigned to		
	the task.		
	ODBC_IMPORT_ALLE.cmd: Imports all active data channels.		
	📕 Task-import_selected_ODBC_sources 📃 🗖 🗙		
	Name: import_selected_ODBC_sources		
	Description:		
	Command Line: ODBC Connector ODBC_IMPORT.cmd  Manage		
	Schedule:		
	Schedule		
	Start		
	Run only if logged on  Enabled (Scheduled Taskruns at specified time.)		
	Cancel		
	Select the file to be executed in the command line.		
	Define a "Schedule", if applicable.		
	Click "Start" to launch a single run of the task.		

Task	Function	
Archiving_Data	Configuration	
archive.cmd	TaskManagement Data_Archiving Archiving TaskManagement Archive.cmd" entry from the command line list box when you define the task.	
	Task - Archiving –	
	Name: Archiving Description:	
	Command Line: Data Export archive.cmd  Manage Schedule:	
	Schedule Start	
	Run only if logged on     Enabled (Scheduled Task runs at specified time.)	
	OK X Cancel	
Archiving_Data (con- tinued)	Create an interval definition to configure the time window to export. The following example shows the export of data that is older than three years. "Remove after export" deletes the data from the database within the specified time range. The exported data is written to a file.	
	Interval definition - Database_Export_Task     _	
	Description: Database Export Task Intervall Definition	
	Interval back: buration: offset Hours Minutes Seconds Start Month • One file only Remove after export Target Filename: export Compression Level: Entry values Start	
	You may also export all data points manually or export only selected data	
	points.	

#### Reference

13.14 Functions for Task Management

Task	Function
B.Data Service Task	Configuration
Restart_ERS.cmd KillExcel.cmd sink.cmd	<ul> <li>B.Data_Service_Task</li> <li>B.Data_ERS_monitoring</li> <li>B.Data_Excel_monitoring</li> </ul>
test.cmd	This task serves to support system administrators.
	The "B.Data ERS monitoring" task stops and starts the service that is re- sponsible for loading the reports. The task also stops and restarts the Auto- print service.
	Try this task as initial solution if the following actions will not work:
	Loading reports
	Automatic printing and mailing
	The "B.Data Excel monitoring" task starts an application that deletes the Excel application running in the background.
Task for derived meas- urements	The "Derived measurements" Task Manager provides various tasks for calculation of derived measurements.
TaskDerivedMeas.cmd TaskDerived- Meas_all.cmd TaskDerived-	TaskManagement
Meas_vis.cmd	<ul> <li>Interval_PP</li> <li>Interval_Prediction</li> <li>Interval_Prediction</li> </ul>
	"TaskDerivedMeas.cmd": Calculates all data points that are connected to the interval definition node.
	"TaskDerivedMeas_all.cmd": Calculates all active derived data points in the system.
	"TaskDerivedMeas_vis.cmd": Calculates all active derived data points that are assigned to a visualization.
	Rule for all tasks is that only the time window that is specified in the interval definition is calculated. The calculation cycle is defined in the derived data point.
Task for ASCII import	Configuration
TskFtpTransfer.cmd	iar Content C
	The task serves to initiate "FTPTransfer.exe" that transfers the files to the application server via FTP. These files are then parsed (e.g. B.Data format, Dalog format, CSV format) and the corresponding measurement sets will be entered in the measurement journal.

Task	Function		
Task for starting re- ports TskCalcReport.cmd RestartReport.cmd TskRestCalcRep.cmd	This task starts selected reports that are connected to the tasks node.  TaskManagement  TaskManagement  Task_Reports  Task_Reports  Calculate_Reports  Calculate_Reports  Calculate_Report  Create_new_report		
	The "TskCalcReport.cmd" command file works similar to automatic report- ing. A result is only calculated if not yet available for the relevant period.		
	The task that contains the "RestartReport.cmd" command file restarts the report. This task is used primarily in combination with query types such as the current month. This means that an evaluation is generated on the first day of the month and recalculated on a daily basis.		
	The task that contains the "TskRestCalcRep.cmd" command file generates a new report at each start.		
Compression TskVerd.cmd	This task can be used to compress data point values such as acquisition values to daily values.		
TskVerdAlle.cmd			
	The task that contains the "TskVerd.cmd" command file compresses the connected data points within the period that is specified in the interval definition.		
	The task that contains the "TskVerdAlle.cmd" command file compresses all data points in the system within the period that is specified in the interval definition.		
	An appropriate data point configuration is prerequisite for both tasks.		

#### Reference

13.14 Functions for Task Management

Task	Function	
Task For starting data- base jobs	B.Data and which are also used in the job queue.	
TskJob.cmd	Configuration	
	Calculate_Batchdata Calculate_Batchdata Calculate_Batchdata 	
	Connect the object of the database job that is to be executed to the task node. The jobs available in the system are listed in the plant tree at "Configuration > Constants and definitions" / Functions / Jobs.	
	Configuration  Constant and definitions  Functions  Calculations  Calculations  Datapoints  Jobs  Model Job for batchdata producing	
Task for importing production plansThis task initiates xlprdplanimpLauncher.exe. The function importing tion plans (available in Excel file format) into the B.Data system		
prdplanimp.cmd	Enter the directory from which the production plans are imported in the "prdplanimp.cmd" file. For the log files, enter the B.Data directory that is used by default for storage of B.Data log files.	
	TaskManagement     Section_Plan_Import     For the section_Plan_Import     For the section_Plan_Import	

Homepa

### 13.15.1 ASCII FTP import interface

Using the ASCII FTP import interface, you can import the content of ASCII files of diverse formats to B.Data.

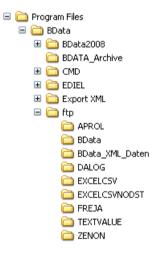
File import can be initiated by the kernel, or via FTP transfer from an FTP directory. FTP brings you the advantage that missing data or updated values can always be transferred at a later time. The kernel rejects non-incremental data, as proper processing is not ensured due to the loop concept.

#### Note

In B.Data, always use FTP transfer for the import via the ASCII FTP interface. Activating the kernel selection box may lead to faulty data acquisition.

You should therefore preferably use FTP transfer for data import.

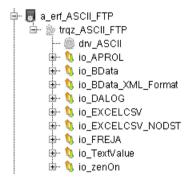
Setup installs a sample file for each supported format in the %Installations-DIR%\ftp folder on the acquisition computer.



Parser DLL	Sample file
fp_Aprol.dll	ChronoLogDataExport_pfil_H_15_03_2010.txt
fp_bdata.dll	20100627_000000_FribaDP01.txt
XMLParser.dll	d_EL_E_7D_outside_temperature_20100101000000_20100102000000.xml
fp_dalog.dll	Dalog_File.txt
fp_excelcsv.dll	Excel_CSV.csv
fp_excelcsvNODST.dll	Excel_CSV_NODST.csv
fp_freja.dll	AVV_000112200_20100328000000_20100329000000.txt
TextValueParser.dll	TextValues.txt
fp_Zenon.dll	zenOn.txt

An IO buffer with data point is generated for each format by means of database setup. Enable the data point if you want to apply data from the example files.

Enter the address parameter of the file at the "Address" data point so that the parser is able to assign the data to the correct data point.



The following chapters contain more information on the various parsers and supplied sample files.

### 13.15.2 APROL

Name of the DLL Format identifier Time base fp\_Aprol.dll fp\_Aprol Local time

🐧 IO Buffer - io_APROL 📃 🗖 🗙		
Name:	io_APROL	
Description:	Aprol io-buffer	
	<b>~</b>	
State:	ACTIVE	
Cycle Time:	1 h	
	C Kernel	
FTP-Config	uration	
Path:	ftp://localhost/APROL	
Username:	siemens	
Password:	*****	
Format:	fp_Aprol	
	V OK X Cancel	

### Data point address

Datapoint				- =
Name:	d_W15_ZIt_ABBMSU8	3_10_J1Ab		
Description:	W15:ZIVABBMSU8_10	)_J1Ab		
Address:	W15:ZIVABBMSU8_10	)_J1Ab		Browse OPC Server
Driver Source:	trqz_ASCII_FTP	■ IO Buffer:	io_APROL	
Cycletime:	1 h	Datatype:	dty_float	
Comment				

### Sample file

ChronoLogDataExport\_pfil\_H\_15\_03\_2010.txt

<b>x</b>	ChronoLogDataExport_pfil_H_15_03_2010.txt
1	0,,,,,,,,,,50,,,,,,,60,,,,,,,,,,,30,,,,,,,40,,,,,,50,,,,,,,60,,,,,,,70,,,
3 4	
6	
7 8 9	
10	
13	
14 15 16	
	<record date="2010-03-15" id="W15:Zlt/ABBMSU8_10_J1Ab" time="03:00:00"></record>
19 20	<field name="mode">O</field> 

# 13.15.3 BDATA

Name of the DLL Format identifier: Time base: fp\_bdata.dll fp\_bdata Local time

🐧 IO Buffer -	io_BDATA _ = ×
Name:	io_BDATA
Description	BDATA IO-Bereich
State:	ACTIVE
Cycle Time:	1 h 💌
	C Kernel
FTP-Config	uration
Path:	ftp://localhost/BData
Username:	siemens
Password:	******
Format:	fp_bdata
9	V OK X Cancel

### Data point addresses

00058



🔂 Datapoint 📃 📼 🗙		
Name:	d_00058	
Description:	measurement "00058"	
Address:	00058 Browse OPC Server	
Driver Source:	trqz_ASCII_FTP IO Buffer: io_BData	
Cycletime:	1 h Datatype: dty_float	
Comment		
	· · · ·	
	V OK X Cancel	

# Sample file

### 20100627\_000000\_FribaDP01.txt

<b>x</b>	20100627_000000_FribaDP01.txt
	0
1	"COMP LEVEL"; "MSJO DATUM"; "ZEIT ID"; "MESS ID"; "MSJO WERT"; "MSJO INTERVALL"; "MSJO DGUELTIG"; "STER FLAG"; "STKO FLAG"
2	"2100";"26.06.2010 01:00:00";"1002";"00059";"244.89";"3600";"3600";"0";"0";"0"
з	"2100";"26.06.2010 02:00:00";"1002";"00059";"243.39";"3600";"3600";"0";"0"
4	"2100";"26.06.2010 03:00:00";"1002";"00059";"244.61";"3600";"3600";"0";"0"
5	"2100";"26.06.2010 04:00:00";"1002";"00059";"243.53";"3600";"3600";"0";"0"
6	"2100";"26.06.2010 05:00:00";"1002";"00059";"244.48";"3600";"3600";"0";"0"
7	"2100";"26.06.2010 06:00:00";"1002";"00059";"243.48";"3600";"3600";"0";"0"
8	"2100";"26.06.2010 07:00:00";"1002";"00059";"244.24";"3600";"3600";"0";"0"
9	"2100";"26.06.2010 08:00:00";"1002";"00059";"243.59";"3600";"3600";"0";"0"
	"2100";"26.06.2010 09:00:00";"1002";"00059";"244.43";"3600";"3600";"0";"0"
	"2100";"26.06.2010 10:00:00";"1002";"00059";"243.52";"3600";"3600";"0";"0"
	"2100";"26.06.2010 11:00:00";"1002";"00059";"244.45";"3600";"3600";"0";"0"
	"2100";"26.06.2010 12:00:00";"1002";"00059";"243.64";"3600";"3600";"0";"0"
	"2100";"26.06.2010 13:00:00";"1002";"00059";"244.65";"3600";"3600";"0";"0"
	"2100";"26.06.2010 14:00:00";"1002";"00059";"243.58";"3600";"3600";"0";"0";"0";"0"
	"2100";"26.06.2010 15:00:00";"1002";"00059";"245.16";"3600";"3600";"0";"0"
	"2100";"26.06.2010 16:00:00";"1002";"00059";"243.44";"3600";"3600";"0";"0"
	"2100";"26.06.2010 17:00:00";"1002";"00059";"245.26";"3600";"3600";"0";"0";"0"
	"2100";"26.06.2010 18:00:00";"1002";"00059";"243.95";"3600";"3600";"0";"0"
	"2100";"26.06.2010 19:00:00";"1002";"00059";"245.08";"3600";"3600";"0";"0";"0";"0";
	"2100";"26.06.2010 20:00;00";"1002";"00059";"243.14";"3600";"3600";"0";"0";"0";"0"
	"2100";"26.06.2010 21:00:00";"1002";"00059";"243.49";"3600";"3600";"0";"0"
	"2100";"26.06.2010 22:00:00";"1002";"00059";"244.48";"3600";"3600";"0";"0";"0";"0"
	"2100";"26.06.2010 23:00:00";"1002";"00055";"243.35";"3600";"3600";"0";"0"
	22100"; 27.06.2010 00:00:00"; "1002"; "00059"; "243.19"; "3600"; "3600"; "0"; "0"
	"2100"; "26.06.2010 01:00:00"; "1002"; "00058"; "144.89"; "3600"; "3600"; "0"; "0"
	"2100"; "26.06.2010 02:00:00"; "1002"; "00058"; "143.39"; "3600"; "3'600"; "0"; "0"
28	"2100";"26.06.2010 03:00:00";"1002";"00058";"144.61";"3600";"3600";"0";"0"

Reference

13.15 ASCII FTP formats

# 13.15.4 BDATA\_XML\_Format

Name of the DLL XMLParser.dll Format identifier: XMLParser Time base: Local time

🕽 IO Buffer - io_BData_XML_Format 📃 🗖 🗙		
Name:	io_BData_XML_Format	
Description:		
State:	ACTIVE	
Cycle Time:	15 min 🔹	
	C Kernel	
FTP-Config	uration	
Path:	ftp://localhost/BData_XML_Daten	
Username:	siemens	
Password:	*****	
Format:	XMLParser	
OK X Cancel		

### Data point address

110357 io\_BData\_XML\_Format i\_\_\_\_\_\_ d\_EL\_E\_7D\_outside\_temperature

al	🗟 Datapoint 📃 📼 🗙				
	Name:	d_EL_E_7D_outside_temper	rature		
	Description:	EL_E-7D outside temperature	re		
	Address:	110357			Browse OPC Server
	Driver Source:	trqz_ASCII_FTP	<ul> <li>IO Buffer:</li> </ul>	io_BData_XML_Format	
	Cycletime:	15 min	<ul> <li>Datatype:</li> </ul>	dty_float	•
	Comment				-
					-
		<b>∼</b> 0k		🗙 Cancel	

#### Sample file

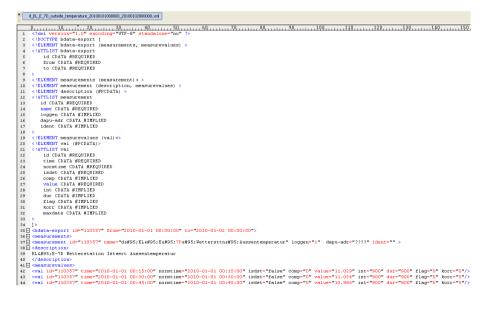
#### Note

#### Importing XML files with or without line breaks

If you wish to import an XML file with more than 65533 bytes, the XML file must be formatted with line breaks.

If the XML file does not contain any line breaks, a maximum of 65533 bytes of data is imported.

d\_EL\_E\_7D\_outside\_temperature\_20100101000000\_20100102000000.xml



# 13.15.5 DALOG

Name of the DLL Format identifier: Time base: fp\_dalog.dll fp\_dalog Local time

🐧 IO Buffer - i	io_DALOG _ = ×
Name:	io_DALOG
Description:	IO-buffer DALOG
State:	ACTIVE
Cycle Time:	1 month
	C Kernel
FTP-Config	uration
Path:	ftp://localhost/DALOG
Username:	siemens
Password:	*****
Format:	fp_dalog
	V OK X Cancel

### Data point addresses

DE00722531628HSA0000000WKLAF01000\_1-81:1.9.1

datapoint\_address\_2

datapoint\_address\_3

÷	🐧 io_DALOG
	🤜 d_DALOG_01
	🗆 🦾 🌄 d_DALOG_03

🔂 Datapoint 💦 👘 🗾			
Name:	d_DALOG_01		
Description:	measurement DE00722531628HSA0000000WKLAF01000_1-81:1.9.1		
Address:	DE00722531628HSA0000000WKLAF01000_1-81:1.9.1 Browse OPC Server		
Driver Source:	trqz_ASCII_FTP IO Buffer: io_DALOG		
Cycletime:	1 month Datatype: dty_float		
Comment	^		
	V OK X Cancel		

### Sample file

Dalog\_File.txt

×	Dalog_File.txt
Ш	
	<u> </u>
	1 DE00722531628HSA0000000WKLAF01000_1-81:1.9.1@datapoint_address_2@datapoint_address_3@datapoint_address_4
	2 1010101
	3 2010.02.01 00:00:0006540054.20
	4 2010.03.01 00:000:000123.4560523.6042062.5
	5 2010.03.31 23:00:0008630052.3041
	6 2010.04.30 23:00:00052046.80084.7

# 13.15.6 EXCELCSV

Name of the DLL Format identifier: Time base: fp\_excelcsv.dll fp\_excelcsv Local time

🐧 IO Buffer - i	io_EXCELCSV _ = ×
Name:	io_EXCELCSV
Description:	×
State:	ACTIVE
Cycle Time:	15 min 🔹
	C Kernel
FTP-Config	uration
Path:	ftp://localhost/EXCELCSV
Username:	siemens
Password:	*****
Format:	fp_excelcsv
	✓ OK X Cancel

# Data point address

EXCELCSV 01	
🖨 🐧 io_EXCELCSV	
🦾 🔜 🖬 d_HQC_GAS_GTGM_FRB_FLW_sumRe	eal

5	🚡 Datapoint	_ = ×
	Name:	d_HQC_GAS_GTGM_FRB_FLW_sumReal
	Description:	
	Address:	EXCELCSV_01 Browse OPC Server
	Driver Source:	trqz_ASCII_FTP IO Buffer: Io_EXCELCSV
	Cycletime:	15 min Datatype: dty_float
	Comment	^
		· · · · · · · · · · · · · · · · · · ·
		✓ OK X Cancel

### Sample file

Excel\_CSV.csv

<b>X</b>	Microsoft Excel - Ex	cel_CSV.csv
:2	<u>D</u> atei <u>B</u> earbeiten	<u>A</u> nsicht <u>E</u> infüge
10	I 💕 🖬 🖪 🔒 🗃 🛛	i 🛕 💞 📖
1	) 🔁 💂	
	E14 👻	fx
	A	В
1	Zeitstempel	EXCELCSV_01
2	28.03.2010 00:15	25
3	28.03.2010 00:30	26
4	28.03.2010 00:45	27
5	28.03.2010 01:00	28
6	28.03.2010 01:15	29
7	28.03.2010 01:30	30
8	28.03.2010 01:45	31
9	28.03.2010 03:00	32
10	28.03.2010 03:15	33

# 13.15.7 EXCELCSVNODST

Name of the DLL Format identifier: Time base: fp\_excelcsvNODST.dll fp\_excelcsvNODST UTC+1

🔍 IO Buffer - i	io_EXCELCSV_NODST _ = >
Name:	io_EXCELCSV_NODST
Description:	io-buffer for Excel CSV - Parser NODST=no Daylight Savingtime supported timestamps must be in UTC+1
State:	ACTIVE
Cycle Time:	15 min 🔹
	C Kernel
FTP-Config	uration
Path:	ftp://localhost/EXCELCSVNODST
Username:	siemens
Password:	****
Format:	fp_excelcsvNODST
	🖌 OK 📉 🗙 Cancel

#### Data point address

identifier 02
🖨 🐧 io_EXCELCSV_NODST
🦾 🌄 d_HQC_GAS_GTGM_FRB_FLW_sumReal_NODST

🗔 Datapoint	- = ×
Name:	d_HQC_GAS_GTGM_FRB_FLW_sumReal_NODST
Description:	
Address:	identifier_02 Browse OPC Server
Driver Source:	trqz_ASCII_FTP IO Buffer: io_EXCELCSV
Cycletime:	15 min   Datatype: dty_float
Comment	
	· ·
	V OK X Cancel

#### Sample file

Excel\_CSV\_NODST.csv

	Microsoft Excel - Exc	cel_CSV_NODST.						
:2	<u>D</u> atei <u>B</u> earbeiten	<u>A</u> nsicht <u>E</u> infügen						
10	E 🖬 🚰 🔒 🔒 🚭 🔍 💞 🖏 I 👌							
: 🔁	1 🔁 🛣 🖕							
_	E22 -	fx						
	A	В						
1	timestamp	identifier_02						
2	28.03.2010 00:15	1						
3	28.03.2010 00:30	2						
4	28.03.2010 00:45	3						
5	28.03.2010 01:00	4						
6	28.03.2010 01:15	5						
7	28.03.2010 01:30	6						
8	28.03.2010 01:45	7						
9	28.03.2010 02:00	8						
10	28.03.2010 02:15	9						
11	28.03.2010 02:30	10						
12	28.03.2010 02:45	11						
13	28.03.2010 03:00	12						
14	28.03.2010 03:15	13						

In contrast to files with local time base (summer or winter time), the times stamps must always be available in this case in UTC+1 format (winter time). The parser automatically calculates the time stamps for daylight saving time, sets the daylight savings flag correctly, and adds one hour to the time stamps that represent the daylight saving time.

# 13.15.8 FREJA

fp_freja.dll
fp_freja
Local time

🔍 IO Buffer - i	io_FREJA _ = ×
Name:	io_FREJA
Description:	
State:	ACTIVE
Cycle Time:	1 h 🗨
	C Kernel
FTP-Config	uration
Path:	ftp://localhost/FREJA
Username:	siemens
Password:	******
Format:	fp_freja
	V OK X Cancel

### Data point address

HOK FIV ATOF LEV EGI 1M	
🖕 🐧 io_FREJA	
🦾 🔜 d_HQK_FJV_ATOF_LEV_EGI_1	M

5	🚡 Datapoint	_ = ×
	Name:	d_HQK_FJV_ATOF_LEV_EGI_1M
	Description:	
	Address:	HQK_FJV_ATOF_LEV_EGI_1M Browse OPC Server
	Driver Source:	trqz_ASCII_FTP IO Buffer: io_FREJA
	Cycletime:	15 min Datatype: dty_float
	Comment	<b>^</b>
		✓ OK X Cancel

### Sample file

AVV\_000112200\_20100328000000\_20100329000000.txt

×	AVV_00	01122	00_20	100328	300000	0_20100329000000.txt
	Q		1,0, ,			40 <sup>7</sup>
1	Year	Mon	th D	ay H	lour	Minute TAGname Unit Value Quality Remark
2	2010	03	28	00	15	HQK_FJV_ATOF_LEV_EGI_1M_MWh_200
3	2010	03	28	00	30	HQK FJV ATOF LEV EGI 1M MWh 200
4	2010	03	28	00	45	HQK FJV ATOF LEV EGI 1M MWh 200
5	2010	03	28	01	00	HQK_FJV_ATOF_LEV_EGI_1M MWh 200
6	2010	03	28	01	15	HQK_FJV_ATOF_LEV_EGI_1M MWh 200

# 13.15.9 TextValue

Name of the DLL Format identifier: Time base: TextValueParser.dll TextValueParser Local time

🐧 IO Buffer - i	io_TextValue _ = ×
Name:	io_TextValue
Description:	
State:	ACTIVE
Cycle Time:	15 min 🗨
	C Kernel
FTP-Config	uration
Path:	ftp://localhost/TEXTVALUE
Username:	siemens
Password:	*****
Format:	TextValueParser
	✓ OK X Cancel

### Data point addresses

• d_Engine_	1
🖶 🐧 io_TextVal	jine_1
🗔 Datapoint	_ = X
Name:	d_Engine_1
Description:	
Address:	engine_1 Browse OPC Server
Driver Source:	trqz_ASCII_FTP IO Buffer: io_TextValue
Cycletime:	15 min Datatype: dty_float
Comment	A
	✓ OK X Cancel

### Sample file

TextValues.txt

TextValues.txt
0,
1 01.02.2010 00:15;ENG2;engine 2 failure
2 03.02.2010;ENG2;hotwater failure
3 05.03.2010 01:00;engine_1;plant 2 OK again

### Result in the measurement journal

atapoint: d_Engine, terval: Interval from	n 01/01/2010 00	:00:00 to 01	/01/2011 00:	00:00						Count:	2
Time	Timezone	Value [.]	Interval	Duration		MinMaxTime	Text	A.Status	Corr.Status	Comp.Level	Up
01/02/2010 00:15:00	wintertime	0	1		1	12/08/2010 22:55:12	engine 2 failure	STER_OK	valid	Entry values	
3/02/2010 00:00:00	wintertime	0	1		1	12/08/2010 22:55:12	hotwater failure	STER_0K	valid	Entry values	
•				11						► F	Dw

#### Note

"Text" values can only be entered in the measurement journal by means of FTPTransfer and parameter /d setting (FTPTransfer /d 123).

# 13.15.10 ZenOn

fp_Zenon.dll
fp_Zenon
Local time

🐧 IO Buffer - i	io_ZenOn _ = 🛪
Name:	io_ZenOn
Description:	
State:	ACTIVE
Cycle Time:	1 h 🔹
	C Kernel
FTP-Configu	Iration
Path:	ftp://localhost/zenon
Username:	siemens
Password:	*****
Format:	fp_zenon
	VK X Cancel

# Data point address

HQK FJV ATOF LEV EGI 1M
🖃 🐧 io_ZenOn
🦾 🌄 d_H2_UYC01_CT001_YQ01

🎧 Datapoint	- = ×
Name:	d_H2_UYC01_CT001_YQ01
Description:	H2_UYC01_CT001_YQ01
Address:	H2_UYC01_CT001_YQ01 Browse OPC Server
Driver Source:	trqz_ASCII_FTP IO Buffer: io_ZenOn
Cycletime:	1 h Datatype: dty_float
Comment	A
	V OK X Cancel

### Sample file

zenOn.txt

	×	zenOn.txt		
[		Q	3,0, , , , , , , ,	
	1	H2_UYC01_CT001_YQ01;8.6;SPONT	WINTER	;27.01.10;01:00:00
	2	H2_UYCO1_CTOO1_YQO1;8.6;SPONT	WINTER	;27.01.10;02:00:00
	з	H2_UYC01_CT001_YQ01;8.5;SPONT	WINTER	;27.01.10;03:00:00
	4	H2_UYC01_CT001_YQ01;8.7;SPONT	WINTER	;27.01.10;04:00:00
	5	H2_UYC01_CT001_YQ01;8.5;SPONT	WINTER	;27.01.10;05:00:00
	6	H2_UYC01_CT001_YQ01;8.6;SPONT	WINTER	;27.01.10;06:00:00

13.16 XML stylesheets

# 13.16 XML stylesheets

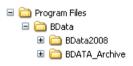
### 13.16.1 XML export interface

The XML export interface (DataExport.exe) is used for the export of data point information and measured values from B.Data to XML format files. The XML data is converted into the selected ASCII format by means of a style sheet.

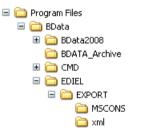
The entire process is controlled by means of Task Management. Setup installs six corresponding CMD files in the "%Installations-DIR%\CMD" folder on the acquisition computer.

C:\Program Files\BData\CMD		
	×	Name 🔺
🖃 🚞 Program Files	~	archive.cmd
🖃 🚞 BData		DELFOR_1.cmd
🗉 🚞 BData2008		DELFOR_8.cmd
🗉 🚞 BDATA_Archive		FREJA_hourly.cmd
CMD		FREJA_monthly.cmd
🗉 🚞 EDIEL		Kill_Excel.cmd
🗉 🚞 Export XML		Kill_Excel_complete.cmd
🗉 🛅 ftp		MSCONS.cmd

"Archive.cmd" uses the "%Installations-DIR%\BData\_Archives" output folder.



The remaining CMDs employ the "%Installations-DIR%\EDIEL" output folder. The other output folders such as MSCONS are automatically generated by the respective CMD.



It is possible to adapt the CMD files or style sheets to enable generation of all necessary ASCII formats.

Setup installs six style sheets in the "%Installations-DIR%\ftp" folder on the acquisition computer. The "Xalan.exe" version that is necessary for transformation is included in the "Transform" subfolder.



The next chapters provide a short overview of the various style sheets.

13.16 XML stylesheets

# 13.16.2 bdatadanmk\_1.xsl

Execution file: Output folder: "Delfor\_1.cmd" or "MSCONS.cmd" C:\BData\GUI\EDIEL\EXPORT

## XML file

🕘 C:\Program Files\BData\EDIEL\EXPORT\xml\000137125_e_VV_XAB_23b55_kWh_20100101000000_20100 🔳 🔲 🔯
File Edit View Favorites Tools Help
🕞 Back 👻 🕑 👻 🛃 🛃 🌈 Search 🧙 Favorites 🤣 😥 🍡 🔜 🛄 🎇 🦓
Address 🔮 C:\Program Files\BData\EDIEL\EXPORT\xml\000137125_e_VV_XAB_23b55_kWh_20100101000000_20100102000000.xr 👽 🎅 Go 🛛 Links
<pre><?xml version="1.0" encoding="ISO-8859-1" standalone="no" ?> <!DOCTYPE bdata-export (View Source for full doctype)>     &lt;   <cbdata-export export-id="283" export-version="2" from="2010-01-01 00:00:00" id="133638" to="2010-01-02 00:00:00">             <measurements>         - <measurement id="133638" ident="" loggen="0" name="e_VV_XAB_23b55_kWh" unit="kWh">           <measurements>           <measurement id="133638" ident="" loggen="0" name="e_VV_XAB_23b55_kWh" unit="kWh">           <measurements>           <measurement id="133638" ident="" loggen="0" name="e_VV_XAB_23b55_kWh" unit="kWh">           <measurements>           <measure< td=""></measure<></measurements></measurements></measurements></measurements></measurements></measurements></measurements></measurements></measurements></measurements></measurements></measurements></measurements></measurements></measurements></measurements></measurements></measurements></measurements></measurements></measurements></measurement></measurements></measurement></measurements></measurement></measurement></measurement></measurement></measurement></measurement></measurement></measurement></measurement></measurements></cbdata-export></pre>

<b>000137125_e_VV_XAB_23b55_kWh_20100101000000</b>
File Edit Format View Help
BData Version 1.0;1027 FROM;01.01.2010;00:15:00 T0;02.01.2010;00:00:00 e_VV_XAB_23b55_kWh 01.01.2010;00:15:00;5;0 01.01.2010;00:30:00;9.7;0 01.01.2010;00:45:00;9.7;0 01.01.2010;01:00:00;8;0

# 13.16.3 bdatadanmk\_8.xsl

Execution file: Output folder: Delfor\_8.cmd C:\BData\GUI\EDIEL\EXPORT

## XML file

🗿 C:\Program Files\BData\EDIEL\EXPORT\xml\000137126_e_VV_XAB_23b55_kWh_20100101000000_20100 🔳 🗖 🔀
File Edit View Favorites Tools Help  🧗
🕞 Back 👻 🕑 👻 📓 🏠 🔎 Search 👷 Favorites 🤣 😥 - 🌺 🚍 🛄 🎇 🦓
Address 🖭 C:\Program Files\BData\EDIEL\EXPORT\xml\000137126_e_VV_XAB_23b55_kWh_20100101000000_20100102000000.xr 💙 🄁 Go 🏻 Links 🎽
<pre><?xml version="1.0" encoding="ISO-8859-1" standalone="no" ?> <!DOCTYPE bdata-export (View Source for full doctype)>     &lt; <bdata-export export-id="284" export-version="3" from="2010-01-01 00:00:00" id="133638" to="2010-01-02 00:00:00">     <bdata-export id="133638" ident="" loggen="0" name="e_VV_XAB_23b55_kWh" unit="kWh">     <description>VV_XAB_23b55</description>         VV_XAB_23b55         <ul>             <li><measurement id="133638" ident="" loggen="0" name="e_VV_XAB_23b55_kWh" unit="kWh"></measurement></li></ul></bdata-export></bdata-export></pre>

D 000137126_e_VV_XAB_23b55_kWh_20100101000000_
File Edit Format View Help
BData Version 1.0;8027 FROM;01.01.2010;00:15:00 T0;02.01.2010;00:00:00 e_VV_XAB_23b55_kWh 01.01.2010;00:15:00;5;0 01.01.2010;00:30:00;9.7;0 01.01.2010;00:45:00;9.7;0 01.01.2010;01:00:00;8;0

13.16 XML stylesheets

# 13.16.4 bdatastd.xsl

Execution file: Output folder: archive.cmd C:\BData\GUI\BDATA\_Archive

## XML file

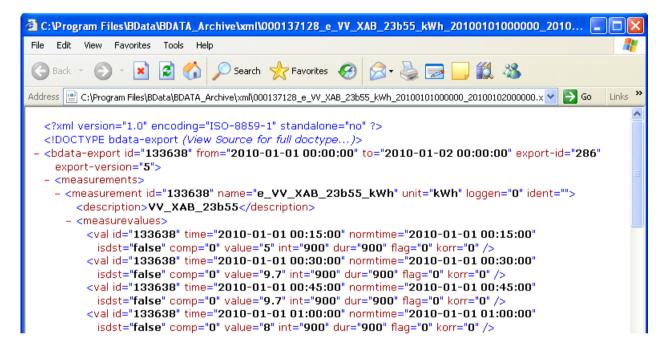
🚰 C: \Program Files\BData\BDATA_Archive\xml\000137127_e_VV_XAB_23b55_kWh_20100101000000_2010 🔚 🗖	×
File Edit View Favorites Tools Help	ľ
🕞 Back - 🕑 - 🖹 🛃 🏠 🔎 Search 👷 Favorites 🧭 🔗 - 🌺 🚍 🛄 🎇 🦓	
Address 🖭 C:\Program Files\BData\BDATA_Archive\xml\000137127_e_VV_XAB_23b55_kWh_20100101000000_20100102000000.x 👽 🎅 Go 🛛 Links	»
<pre><?xml version="1.0" encoding="ISO-8859-1" standalone="no" ?> <!DOCTYPE bdata-export (View Source for full doctype)>     - <bdata-export export-id="285" export-version="4" from="2010-01-01 00:00:00" id="133638" to="2010-01-02 00:00:00"> - <bdata-export id="133638" ident="" loggen="0" name="e_VV_XAB_23b55_kWh" unit="kWh"> &lt; cmeasurements&gt; - <measurement id="133638" ident="" loggen="0" name="e_VV_XAB_23b55_kWh" unit="kWh"> &lt; cmeasurements&gt; - <measurement id="133638" ident="" loggen="0" name="e_VV_XAB_23b55_kWh" unit="kWh"> &lt; cdescription&gt;VV_XAB_23b55 - <measurewalues> &lt; <val comp="0" dur="900" flag="0" id="133638" int="900" isdst="false" korr="0" normtime="2010-01-01 00:15:00" time="2010-01-01 00:15:00" value="5"></val> &lt; val id="133638" time="2010-01-01 00:30:00" normtime="2010-01-01 00:30:00" isdst="false" comp="0" value="9.7" int="900" dur="900" flag="0" korr="0" /&gt; &lt; val id="133638" time="2010-01-01 00:45:00" normtime="2010-01-01 00:45:00" isdst="false" comp="0" value="9.7" int="900" dur="900" flag="0" korr="0" /&gt; &lt; val id="133638" time="2010-01-01 00:45:00" normtime="2010-01-01 00:45:00" isdst="false" comp="0" value="9.7" int="900" dur="900" flag="0" korr="0" /&gt; </measurewalues></measurement></measurement></bdata-export></bdata-export></pre>	

000137127_e_VV_XAB_23b55_kWh_20100101000000_20100102000000.txt - Notepad
File Edit Format View Help
<pre>["COMP_LEVEL"; "MSJD_DATUM"; "ZEIT_ID"; "MESS_LD"; "MSJD_WERT"; "MSJD_INTERVALL"; "MSJD_DGUELTIG"; "STER_FLAG"; "STKO_FLAG" "2100"; "01.01.2010 00:15:00"; "1001"; "133638; "5"; "900"; "000"; "0"; "0" "2100"; "01.01.2010 00:30:00"; "1001"; "133638; "5", "900"; "900"; "0"; "0" "2100"; "01.01.2010 00:45:00"; "1001"; "133638; "5", "7"; "900"; "000"; "0"; "0" "2100"; "01.01.2010 00:45:000"; "1001"; "133638; "6", "900"; "900"; "0"; "0"</pre>

### 13.16.5 bdatastdu.xsl

Execution file:Not assignedOutput folder:C:\BData\GUI\BDATA\_ArchiveB.Data format is the output format that has been extended with the unit.

#### XML file



D 000137128_e_VV_XAB_23b55_kWh_20100101000000_20100102000000.txt - Notepad
File Edit Format View Help
"COMP_LEVEL";"MSJO_DATUM";"ZEIT_ID";"MESS_ID";"MSJO_WERT";"EINH_KTEXT";"MSJO_INTERVALL";"MSJO_DGUELTIG";"STER_FLAG";"STKO_FLAG" "2100";"01.01.2010 00:15:00";"1001";"133638";"5";"kwh";"900";"00";"0";"0" "2100";"01.01.2010 00:30:00";"1001";"133638";"9.7";"kwh";"900";"00";"0" "2100";"01.01.2010 00:45:00";"1001";"133638";"9.7";"kwh";"900";"900";"0" "2100";"01.01.2010 00:45:00";"1001";"133638";"9.7";"kwh";"900";"900";"0" "2100";"01.01.2010 01:00:00";"1001";"133638";"9.7";"kwh";"900";"900";"0"

13.16 XML stylesheets

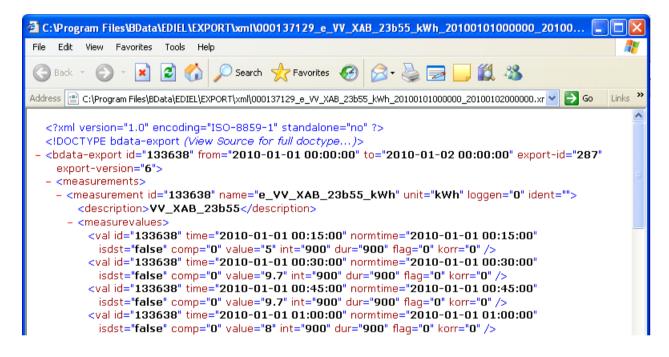
## 13.16.6 Freja.xsl

Execution file:"Freja\_hourly.cmd" or "FREJA\_monthly.cmd"Output folder:C:\BData\GUI\EDIEL\EXPORT

Difference between "hourly" and "monthly":

- Different subfolder for output
- · Moving the generated ASCII file to a different subfolder

#### XML file



🐻 000137129_e_VV_XAB_23b55_kWh_20100101000000_20100102000000.txt - Notepad										
File Edit Format View Help										
јуеаг 2010 2010 2010 2010 2010	Month 01 01 01 01 01	Day 01 01 01 01 01	Hour 00 00 00 01	Minute 15 30 45 00	TAGname Unit e_VV_XAB_23b55 e_VV_XAB_23b55 e_VV_XAB_23b55 e_VV_XAB_23b55	_kwh _kwh	Quality kwh kwh kwh kwh	Remark 5 9,7 9,7 8	0 0 0 0	1001 1001 1001 1001

# 13.16.7 LOKE\_IDAP.xsl

Execution file: Output folder: Not assigned C:\BData\GUI\EDIEL\EXPORT

## XML file

🚰 C:\Program Files\BData\EDIEL\EXPORT\xml\000137132_e_VV_XAB_23b55_kWh_20100101000000_20100 🔳 🗖 🔀
File Edit View Favorites Tools Help 🥂
🔾 Back 🔹 🕥 🔹 📓 🏠 🔎 Search 👷 Favorites 🤣 🔗 - 嫨 🚍 🛄 🎇 🦓
Address 🖭 C:\Program Files\BData\EDIEL\EXPORT\xml\000137132_e_VV_XAB_23b55_kWh_20100101000000_20100102000000.xr 💙 🄁 Go 🛛 Links 🎽
<pre><?xml version="1.0" encoding="ISO-8859-1" standalone="no" ?> <!DOCTYPE bdata-export (View Source for full doctype)>     - <bdata-export export-id="290" export-version="9" from="2010-01-01 00:00:00" id="133638" to="2010-01-02 00:00:00"> - <bdata-export export-id="290" export-version="9" from="2010-01-01 00:00:00" id="133638" to="2010-01-02 00:00:00"> - <bdata-export export-id="290" export-version="9" from="2010-01-01 00:00:00" id="133638" to="2010-01-02 00:00:00"> - <bdata-export export-id="290" export-version="9" from="2010-01-01 00:00:00" id="133638" to="2010-01-02 00:00:00"> -    </bdata-export></bdata-export></bdata-export></bdata-export></pre> - <

000137132_e_VV_XAB_23b55_kWh_20	0100101000000_20100102000000.txt - Notepad
File Edit Format View Help	
"2100"; "01.01.2010 00:15:00"; "100: "2100"; "01.01.2010 00:30:00"; "100: "2100"; "01.01.2010 00:45:00"; "100:	D': "MESS_ID":"MSJO_WERT";"MSJO_INTERVALL";"MSJO_DGUELTIG':"STER_FLAG";"STKO_FLAG";"VAL_NAME";"UNIT";"KKS_NO" 1";"133638";"5;"'900";"900";"0";"0";"2","VX8_23b55_kwh";"kwh";"" 1";"133638";"9,7";"900";"900";"0";"2","VX8_23b55_kwh";"kwh";"" 1";"133638";"80;"900";"900";"0";"2","VX8_23b55_kwh";"kwh";""

13.17 SAP interface

# 13.17 SAP interface

## 13.17.1 DTD for the ERP interface

#### **DTD structure**

The following table shows the DTD structure from which the XML file is created. Using this DTD you can map the attributes in the ERP system.

DTD	Comment				
xml version="1.0" encoding="ISO-8859-1" standalone="no" ?					
bdata-export [</td <td></td>					
ELEMENT bdata-export (measurements, measurevalues)					
ATTLIST bdata-export</td <td>Definition of time range to be exported.</td>	Definition of time range to be exported.				
id CDATA #REQUIRED	ID of interval definition				
from CDATA #REQUIRED	Interval start (local time)				
to CDATA #REQUIRED	Interval end (local time)				
export-id CDATA #REQUIRED	Unique export ID				
export-version CDATA #REQUIRED	Export version of time range				
>					
>					
ELEMENT costcentre-relations (costcentre-relation)+	Definition of cost center relation				
ELEMENT costcentre-relation (description,properties)					
ELEMENT description (#PCDATA)					
ATTLIST costcentre-relation</td <td></td>					
id CDATA #REQUIRED	ID of B.Data cost center relation				
name CDATA #REQUIRED	Name of B.Data cost center relation				
source-costcentre CDATA #REQUIRED	Name of B.Data source cost center				
dest-costcentre CDATA #REQUIRED	Name of B.Data destination cost center				
business-unit CDATA #REQUIRED	Name of business unit in ERP system				
costcentre-relation-extern-label CDATA #REQUIRED	Name of cost center relation in ERP system				
source-costcentre-extern-label CDATA #REQUIRED	Name of source cost center in ERP system				
dest-costcentre-extern-label CDATA #REQUIRED	Name of destination cost center in ERP system				
business-unit-extern-label CDATA #REQUIRED	Name of business unit in ERP system				
cost-element-extern-label CDATA #REQUIRED	Name of service type in ERP system				
personnel-number CDATA #REQUIRED	Personnel number				
accounting-day CDATA #IMPLIED	Entry date, e.g. "14" (optional)				
>					
ELEMENT properties (property)+					
ELEMENT property (#PCDATA)					
ATTLIST property</td <td>Properties of the data point</td>	Properties of the data point				

DTD	Comment
id CDATA #REQUIRED	ID of B.Data property
name CDATA #REQUIRED	Name of B.Data property
value-type CDATA #REQUIRED	Data type of B.Data property
	Value range from 1 to 5:
	• 1: String;
	• 2: Float;
	• 3: Date/Time;
	• 4: Integer;
	• 5: String
value CDATA #REQUIRED	Value of B.Data property
>	
ELEMENT measurements (measurement)+	
ELEMENT measurement (description, measurevalues)	
ELEMENT description (#PCDATA)	
ATTLIST measurement</td <td>Definition of data point</td>	Definition of data point
id CDATA #REQUIRED	ID of data point
name CDATA #REQUIRED	Name of the data point
unit CDATA #REQUIRED	Unit of data point
loggen CDATA #IMPLIED	Logging in database (optional)
dapu-adr CDATA #IMPLIED	Name of data point in the B.Data database (optional)
ident CDATA #IMPLIED	Additional ID of data point (optional)
>	
ELEMENT measurevalues (val)+	
ELEMENT val (#PCDATA)	
ATTLIST val</td <td>Definition of data point measured values</td>	Definition of data point measured values
id CDATA #REQUIRED	ID of data point
time CDATA #REQUIRED	Timestamp in local time
normtime CDATA #REQUIRED	Timestamp in normal time
isdst CDATA #REQUIRED	Summer/Winter time (TRUE = summer time)
comp CDATA #IMPLIED	Compression level
value CDATA #REQUIRED	Value
int CDATA #IMPLIED	Interval between the values in seconds (optional)
dur CDATA #IMPLIED	Validity between the intervals (optional)
flag CDATA #IMPLIED	Recording quality in B.Data (optional)
korr CDATA #IMPLIED	Correction quality in B.Data (optional)
maxdate CDATA #IMPLIED	Date/Time of value generation; only partially available (optional)
>	
]>	

### Example of an exported XML file

The following figure shows an XML file exported from B.Data via the SAP interface. The file name is made up of the following components as standard:

13.17 SAP interface

```
<Definition in the interval definition>_<ID of interval definition>_<FROM>_<TO>.xml
<?xml version="1.0" encoding="ISO-8859-1" standalone="no" ?>
<!DOCTYPE bdata-export (View Source for full doctype...
<br/>

    <measurements />
- <costcentre-relations>
    - <costcentre-relation id="130990" name="CC 1239099 - CC 1239100" costcentre-relation-extern-label="CC 1239099 - CC 1239100"</pre>
              source-costcentre-extern-label="CC 1239099" dest-costcentre-extern-label="CC 1239100" business-unit-extern-label="Siemens
             SoliceCostentereterniabel="OHI" source-costentere"CC1239000" dosinessimiteterniabel="Semens
001" cost-element=veterniabel="OHI" source-costentre="CC1239000" dosinessimiteterniabel="Semens
001" cost-element="PH1" personnel-number="666" accounting-day="30">
              <description />
         - <properties>
                  <property id="131122" name="Order_Nr" value-type="1" value="B1234A23" />
                  <property id="131123" name="Order_Dos" value-type="4" value="10" />
<property id="131121" name="Order_Value-type="4" value="10" />
<property id="131121" name="Order" value-type="1" value="A2343DE" />
                   <property id="131124" name="Accounting_Type" value-type="4" value="1" />
              </properties>
         - <measurements>
              - <measurement id="146711" name="a KST0190_Auftrag123_GAS_add" unit="kWh" loggen="0" ident="">
                       <description />
                   - <measurevalues
                            <val id="146711" time="2011-02-01 00:00:00" normtime="2011-02-01 00:00:00" isdst="false" comp="0"
                           value="214" int="2678400" dur="2678400" flag="0" korr="0" />
<val id="146711" time="2011-03-01 00:00:00" normtime="2011-03-01 00:00:00" isdst="false" comp="0"
                           <valid= 140/11 time= 2011-03-01 00:00:00 normtime= 2011-03-01 00:00:00 isdst= faise comp= 0
value="123" int="2419200" dur="2419200" flag="0" korr="0" />
<valid="146711" time="2011-04-01 00:00:00" normtime="2011-03-31 23:00:00" isdst="true" comp="0"
value="1744" int="2678400" dur="2678400" flag="0" korr="0" />
<valid="146711" time="2011-05-01 00:00:00" normtime="2011-04-30 23:00:00" isdst="true" comp="0"
<valid="146711" time="2011-05-01 00:00:00" normtime="2011-04-30 23:00:00" isdst="true" comp="0"</pre>
                           value="200" int="2592000" dur="2592000" flag="0" korr="0" />
<val id="146711" time="2011-06-01 00:00:00" normtime="2011-05-31 23:00:00" isdst="true" comp="0"
                                value="588" int="2678400" dur="2678400" flag="0" korr="0"
                           <valid="146711" time="2011-07-10 00:00" normtime="2011-06-30 23:00:00" isdst="true" comp="0"
value="123" int="2592000" dur="2592000" flag="0" korr="0" />
<val id="146711" time="2011-08-01 00:00:00" normtime="2011-07-31 23:00:00" isdst="true" comp="0"</pre>
                                  value="600" int="2678400" dur="2678400" flag="0" korr="0" /
                        </measurevalues>
                   </measurement>
              </measurements>
         </costcentre-relation>
      </costcentre-relations>
</bdata-export>
```

# 13.17.2 Structure of the "Archive.CMD" file

### Function

The XML file and an archive file are generated with the "Archive.CMD" file.

### Structure and call function

The following figure shows the call function and the structure of the "Archive.CMD" file:

Name:	Data	base_Export						Name: Data Export	
Descrip	tion: Data	abase Export					÷	Description: Database Export Command Line: archive.cmd	Edit
Comma	and Line:	Data Export	arc	hive.cmd		Manage		Active	
📕 Exo	ecutable 7	asks .						VOK @ Cancel	
Id	Name	*	De	Execution File	Active	<b>^</b>	N	low low	
27	Compr	ession all measurements	all M	TskVerdAlle.cmd	<b>V</b>		/ E	Edit	
26	Compr	ession measurements	Mea	TskVerd.cmd	✓				
3	Data E			archive.cmd			XD	Delete	
38	Data In	əy	Data	TskRedelivervData cmd					
📕 Edit (	.md File								
Name:	archive.cr	nd							
		"D:\BData\GUI\Export XML\Tr							
		T="D:\BData\GUI\Export XML\k = "D:\BData\GUI\DataExport.e;		.xsl"					
pushd	"D:\BData\(	GUNBDATA_Archive"							
mkdir/	Archive_txt								
6 %EXP	ORTEXE%	%1 > "D:\BData\GUI\Logdateia							
	in (*.xml)	do ( %XALANEXE% -o "Archi	re_txt\%	%~nv.txt" %%v %STYLES	6HEET% && ci	ору %%v	xml &	&& del %%v)	
popd									
								<b>T</b>	
								•	

The program and XML stylesheet used to generate the XML file.
 ("SET <Program> = <Path>")

② Generates the folders to which the XML file and the archive file are saved ("mkdir <folder name>")

③ Command to generate the XML file and the archive file ("%EXPORTEXE% [...]") 13.18 Dashboard objects

# 13.18 Dashboard objects

## 13.18.1 Configuring the dashboard

You can configure the Dashboard as follows:

Y Diagram propertys
Document dimensions
Height 680 Width 900
Background
Image (none) 🔎 🥌
Image layout Tile
Style
Line
Style 1
Color
Grid
Horizontal 10 Vertical 10
Global document font
Microsoft Sans Serif; 10 🧪
Global Sankey object configuration
Refresh cycle 60 [sec] Timeshit 180 [sec]
OK Cancel

Settings	Description
Document size	Sets the Dashboard size in pixels.
Background	Sets the Dashboard background.
	You may use a background image of the "*.bmp", "*.jpg", "*.gif", or "*.png" format from your file system for the Dashboard.
Line	Sets the border style for the Dashboard.
Grid	Sets the Dashboard grid that is used to align the dashboard objects.
Global document font	Sets the font and font size for the Dashboard.
Global Sankey object configu- ration	Sets the update cycle for Sankey objects.

#### See also

Creating the dashboard layout (Page 245)

# 13.18.2 Configuring the time range

You can configure the time range for dashboard objects as follows:

1	Pie Chart
Datapoints Time	e Frame Parameter
Timeframe	
e dynamic dat	ite:
Querytype:	Month currrent
Offset:	0
Example: Da	ata selection from 01.03.2014 00:00:00 to 01.04.2014 00:00:00
🔵 fixed date (A	Ad hoc):
From:	01.03.2014 00:00:00 • To: 01.04.2014 00:00:00 •
from DateTil	ime-Picker.
	×.
Comp Level Filter	r: Entry values
Object refresh	
Refresh cycle	5 [sec]
	OK Cancel

Settings	Description
Dynamic time range	Sets a default query type, for example, "Curr. month".
	In this case, the dashboard object evaluates the values of the current month.
Fixed time range (ad hoc)	Sets a customizable time range.
	In this case, the dashboard object evaluates the values of the defined period.
From time selection object	Uses the period from the "Time selection" object with the specified number.
Display value for last cycle	Displays the value of the last cycle.
(only for "Gauge" dashboard object)	
Compression level filter	Sets the type of values to display in the dashboard object, for example, "Daily values".
	In this case, the dashboard object displays the daily values of a measured value series. Requirement: The daily values must be available in the system.
Object update	Defines the update interval for the dashboard object.

### See also

Configuring dashboard objects (Page 248)

Reference

13.18 Dashboard objects

# 13.18.3 Rounded rectangle

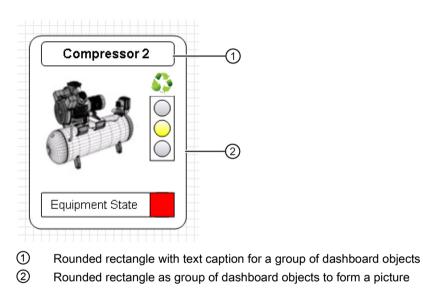
### Function

Inserts a rounded rectangle into the Dashboard.

#### Usage

Use the "Rounded rectangle" dashboard object for your Dashboard style.

## Example



## **Necessary settings**

None

t i i	Round	dRectangle		×
Size Height	30 V	Vidth	164	
Border Width	1 Radius	5 Color		
Fillstyle	/			
Label				
Text	Compressor			<b>^</b>
Fontcolorstyle		e .		
Fontsize	12 🗸 Bo	d Italic		
Alignment	O Top-Left	O Top-Center	⊖Top-Right	
	OLeft	Center	Right	
	O Bottom-Left	O Bottom-Cente	r 🔵 Bottom-Rig	ht
		ОК	Cancel	

- Set the size of the dashboard object.
- Set the border style.
- Set the fill color.
- Set the caption, the text style and the text alignment for the dashboard object.

#### Reference

13.18 Dashboard objects

# 13.18.4 Ellipsis

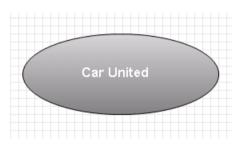
## Function

Inserts an ellipsis into the Dashboard.

### Usage

Use the "Ellipsis" dashboard object for your Dashboard style.

# Example



### **Necessary settings**

None

Ϋ́.		Ellipse		>
Size				
Height	115	Width	260	
Linestyle				
Width	1 Color	1		
Fillstyle	<i>•</i>			
Label				
Text	Ellipse			\$\lambda \lambda \l
Fontcolorstyle		1		
Fontsize	13 🗸	Bold 🗌 Italic		
		ОК	Cance	el

- Set the size of the dashboard object.
- Set the border style.
- Set the fill color.
- Set the caption and text style for the dashboard object.

#### Reference

13.18 Dashboard objects

# 13.18.5 Line

# Function

Inserts a line into the Dashboard.

## Usage

Use the "Line" dashboard object for your Dashboard style.

# Example

	-					-	-	-	-			_	_		

### **Necessary settings**

None

1	Line
Line Width	1 Color
Headdeco	prator
Size	Height 1 Width 1
Shape	Diamond
Linestyle	Width 1 Color
Taildecor	ator
Size	Height 1 Width 1
Shape	Diamond
Linestyle	Width 1 Color
	OK Cancel

- Set the line style.
- Set a separate arrow style for the start and end of the line.

# 13.18.6 Polyline

### Function

Inserts a polyline into the Dashboard.

#### Usage

Use the "Polyline" dashboard object for your Dashboard style.

# Example



### **Necessary settings**

none

¥	Polyline ×
Add point	Add
Line Width	1 Color
Headdec	orator
Size	Height 1 Width 1
Shape	None
Linestyle	Width 1 Color
Taildecor	ator
Size	Height 1 Width 1
Shape	None
Linestyle	Width 1 Color
	OK Cancel

- Add a new point if you want to add an extra line to the polyline.
- Set the line style.
- Set a separate arrow style for the start and end of the polyline.

#### Reference

13.18 Dashboard objects

## 13.18.7 Image

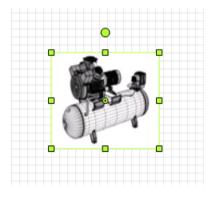
### Function

Inserts a graphic image into the Dashboard.

#### Application

Use the "Image" dashboard object to insert a graphic image from your file system into the Dashboard.

### Example



### **Necessary settings**

ť		Image		×
Linestyle Width	1 Color			
Size Height	120	Width	135	
Image (none) 🔎				
		ОK	Cancel	

• Go to "Image" to select a graphic object in "\*.bmp", "\*.jpg", "\*.gif", or "\*.png" format from your file system.

The selected graphic image is saved to the B.Data database.

- Set the border style.
- Set the size of the graphic image.

# 13.18.8 Traffic light

#### Function

Inserts a traffic light object into the Dashboard to visualize the status of data point values.

This dashboard object evaluates the limit configured in the data point and displays the status of the values with color code. The following states are possible:

- Green: The data point values do not exceed the range of the configured limit.
- Red: The configured data point limit is exceeded.

In the dashboard object configuration, you may define an additional warning limit that is indicated by the following state:

• Yellow: The data point values are still in the valid range but are approaching the configured limit.

#### Note

#### Configuring data points

Configure the plausibility settings of the data point to use this dashboard object in the Dashboard.

These plausibility settings are activated in the dashboard object configuration.

#### Usage

Use the "Traffic light" dashboard object, for example, to visualize the status of the values of a measured value series in the form of a traffic light.

### Example



The traffic light is red: The specified limit of a measured value series was exceeded.

### **Necessary settings**

• Go to the "Data acquisition" field to select the data point that contains the values to be evaluated using the traffic light.

1	Y			Tr	affic light			×
	Datanoint	Time Frame	Plausihilit	Lavout				
	Data acqui		r iddololling	Layour				
		d_Electricity_	Production					
						144353		
						ОК	Cancel	

- Go to "Plausibility" to activate the limit to which the dashboard object has to respond.
- Define a warning limit by entering the deviation in percent in the "Warning level" field and then activate the option.

Datapoint Time	Frame P	lausibility	Layout					
						Active		
Upper Limit:			1000			1		
Lower Limit:			10					
Max Change:			5					
Max diff to DP:						-		
	Oabsol	ute			0 [1]	]		
	• relativ	/e			10 [%	5]		
Max diff. to previous	Oabsol	ute			10 [1]	]		
month:	• relativ	/e			100 [%	5]		
Max diff. to previous year:	Oabsol	ute			10 [1]	]		
	• relativ	/e			100 [%	5]		
Warninglevel:			10	[%]		7		

#### Note

The dashboard object returns the "Red" status if only one of the limits you activated in the "Plausibility" setting is exceeded. The evaluation is not particularly helpful in this situation.

For this reason, evaluate only one limit per dashboard object. Create additional dashboard objects for further evaluations.

### **Optional settings**

Select the "Alignment" tab to set the size, border and background color for the dashboard object.

#### See also

# 13.18.9 Value

### Function

Displays the current data point value in the Dashboard.

This dashboard object is also capable of evaluating the limit configured in the data point and of visualizing the values with color code. The following states are possible:

- Configured background color: The data point values do not exceed the range of the configured limit.
- Red: The configured data point limit is exceeded.

In the dashboard object configuration, you may define an additional warning limit that is indicated by the following state:

• Yellow: The data point values are still in the valid range but are approaching the configured limit.

### Usage

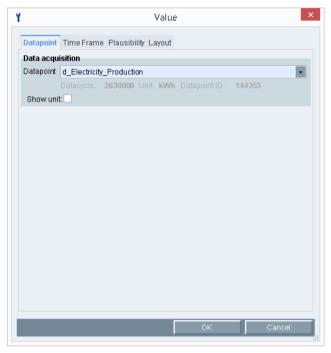
Use the "Value" dashboard object to display the actual value of the most recent period of a measured value series.

### Example

140.00 kWh

### **Necessary settings**

• Go to the "Data acquisition" field to select the data point that contains the value to be displayed.



### **Optional settings**

• Set the update cycle for the dashboard object.

The update cycle is set to five seconds by default.

#### Note

#### Specifying the update cycle

You cannot set an update cycle that is shorter than five seconds.

These plausibility settings are activated in the dashboard object configuration.

- Display the unit of the data point by activating the "Show unit" check box.
- Go to "Plausibility" to activate the limit to which the dashboard object has to respond and to visualize the values with color code.

• Define a warning limit by entering the deviation in percent in the "Warning level" field and then activate the option.

Frame Plausibility	Layout			
			Active	
	1000		4	
	10			
	5			
		•		
) absolute		0 [1]		
relative		10 [%]		
) absolute		10 [1]		
relative		100 [%]		
) absolute		10 [1]		
relative		100 [%]		
	10 [%]		3	
	absolute ab		1000           10           10           5           absolute           0           absolute           10           erelative           100           absolute           100           absolute           100           erelative           100           absolute           100           erelative           100	Active         1000       ✓         10       □         10       □         10       □         10       □         10       □         10       □         10       □         10       □         0       0         0       10         0       10         0       10         0       10         0       10         0       10         0       10         0       10         0       10         0       10         0       10         0       10         0       10         0       10         0       10         0       100         100       1%

#### Note

The dashboard object returns the "Red" status if only one of the limits you activated in the "Plausibility" setting is exceeded. The evaluation is not particularly helpful in this situation.

For this reason, evaluate only one limit per dashboard object. Create additional dashboard objects for further evaluations.

 Select the "Layout" tab to set the size, fill color, border style and text style for the dashboard object.

# 13.18.10 Value difference

#### Function

Compares the actual values of two data points and displays the value states in the Dashboard.

This dashboard object evaluates the plausibility setting "Max. Diff. to DP" configured in the data point and displays the status of the values with color code. The following states are possible:

- Configured background color: The data point values do not exceed the range of the configured limit.
- Red: The configured data point limit is exceeded.

In the dashboard object configuration, you may define an additional warning limit that is indicated by the following state:

• Yellow: The data point values are still in the valid range but are approaching the configured limit.

#### Note

#### Configuring data points

Configure the plausibility settings of the data point to use this dashboard object in the Dashboard.

These plausibility settings are activated in the dashboard object configuration.

#### Usage

Use the "Value difference" dashboard object to display the comparison of the actual values of two measured value series.

#### Example

772	kWh
890	kWh

### **Necessary settings**

• Go to the "Data acquisition" field to select the data point that contains the values to be visualized.

Datapoint       Time Frame Plausibility Layout         Datapoint       d_Electricity_Production         Datacycle:       2638000         Unit:       KWh         Datapoint       I         Show unit       Image: Show unit	¥.	Value Diff ×
Data acquisition         Datapoint       d_Electricity_Production         Datacycle:       2638000         Show unit:	Datanoint	Time Frame, Plausibility, Lavout
Datapoint d_Electricity_Production Datacycle: 2638000 Unit: kWh Datapoint ID : 144353 Show unit		
Show unit		
OK Cancel		
OK		
OK Cancel		
		OK Cancel

- In the "Plausibility" settings, activate the "Max. Diff. to DP".
- Define a warning limit by entering the deviation in percent in the "Warning level" field and then activate the option.

Datapoint Time	Frame Plausibility	Layout			
				Active	
Upper Limit:		1000		5	
Lower Limit:		10			
Max Change:		5			
Max diff to DP:			•		
	) absolute		0 [1]		
	relative		10 [%]		
Max diff. to previous	🔾 absolute 📃		10 [1]		
month:	relative		100 [%]		
Max diff. to previous year:	Oabsolute		10 [1]		
. ,	relative		100 [%]		
Warninglevel:		10 [%]		<b>y</b>	

## **Optional settings**

- Display the unit of the data point by activating the "Show unit" check box.
- Select the "Alignment" tab to set the size, fill color, border style and text style for the dashboard object.

### See also

### 13.18.11 Time selection

#### Function

Changes the time range for dashboard object assigned to the "Time selection" object.

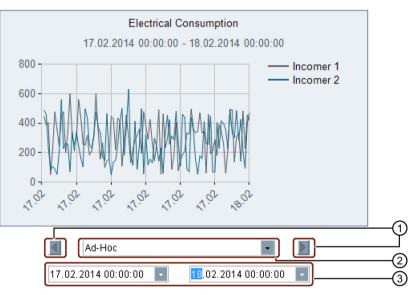
You can assign the "Time selection" dashboard object to several dashboard objects. But you can only assign a dashboard object to exactly one "Time selection" dashboard object.

#### Usage

Use the "Time selection" dashboard object if you want to adapt the time range for one or more dashboard objects during runtime of the dashboard.

#### Example

The figure below shows the "Line chart" dashboard object with the "Time selection" dashboard object positioned underneath.



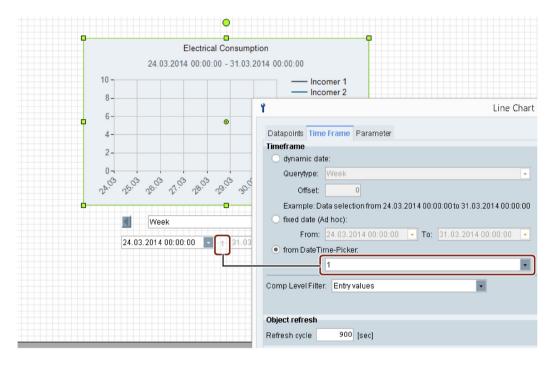
- ① Scrolls back or forth one period.
- ② Specifies the query type, e.g., "Ad hoc"
- ③ Defines the time range depending on the selected query type.

#### **Necessary settings**

Define the query type and time range in the "Time selection" dashboard object that are displayed in the assigned dashboard object when the dashboard is started:

Picker
te:
Week
0
ata selection from 24.03.2014 00:00:00 to 31.03.2014 00:00:00
d hoc):
24.03.2014 00:00:00 💌 To: 31.03.2014 00:00:00 💌

Assign the "Time selection" dashboard object to the dashboard object using its ID:



### 13.18.12 Status

#### Function

Displays the state of values of a data point in the Dashboard.

This dashboard object evaluates the limit configured in the data point and displays the status of the values with color code. The following states are possible:

- Green: The data point values do not exceed the range of the configured limit.
- Red: The configured data point limit is exceeded.

In the dashboard object configuration, you may define an additional warning limit that is indicated by the following state:

• Yellow: The data point values are still in the valid range but are approaching the configured limit.

#### Note

#### Configuring data points

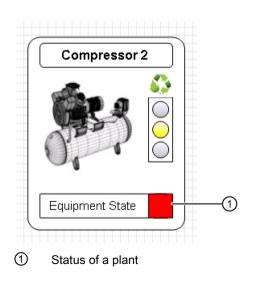
Configure the plausibility settings of the data point to use this dashboard object in the Dashboard.

These plausibility settings are activated in the dashboard object configuration.

#### Usage

You can use the "Status" dashboard object to visualize the value states of a measured value series in the Dashboard.

#### Example



### **Necessary settings**

• Go to the "Data acquisition" field to select the data point with the status to be visualized.

	State
Datapoint	TimeFrame Plausibility Layout
Data acqu	
Datapoint	d_Electricity_Production +
	Datacycle: 2638000 Unit: kWh Datapoint ID: 144353

- Go to "Plausibility" to activate the limit to which the dashboard object has to respond.
- Define a warning limit by entering the deviation in percent in the "Warning level" field and then activate the option.

Datapoint Time	Frame Plausibilit	y Layout		
			Activ	e
Upper Limit:		1000	4	
Lower Limit:		10		
Max Change:		5		
Max diff to DP:			<b>v</b>	
	🔾 absolute 📃		0 [1]	
	relative		10 [%]	
Max diff. to previous	🔾 absolute 📃		10 [1]	
month:	relative		100 [%]	
Max diff. to previous year:	Oabsolute		10 [1]	
	relative		100 [%]	
Warninglevel:		10	%]	]

#### Note

The dashboard object returns the "Red" status if only one of the limits you activated in the "Plausibility" setting is exceeded. The evaluation is not particularly helpful in this situation.

For this reason, evaluate only one limit per dashboard object. Create additional dashboard objects for further evaluations.

### **Optional settings**

Select the "Alignment" tab to set the size and border style for the dashboard object.

#### See also

# 13.18.13 Bar chart

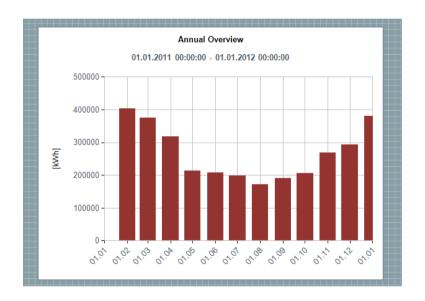
### Function

Inserts a bar chart into the Dashboard.

#### Usage

Use the "Bar chart" dashboard object to visualize the values of one or several measured value series in the form of a bar chart.

### Example



Reference

13.18 Dashboard objects

### **Necessary settings**

Datapoints       Time Frame Parameter         Series1       Data source information         Datapoint       d_Electricity_Production         Datacycle:       2638000         Legend Text       Use          Use        Consumption         Description       Name	Ϋ́.	Bar Chart	×
Datapoint     d_Electricity_Production       Datacycle:     2638000       Use     Consumption         Color	Datapoints Time Frame Parameter		
Datacycle: 2638000 Unit: kWh Datapoint ID: 144353 Legend Text Use  Consumption Name Color	Series1	Data source information	
Legend Text Use  Consumption Description Name Color		Datapoint d_Electricity_Production	•
Use  Consumption Description Name Color		Datacycle: 2638000 Unit: kWh Datapoint ID : 144353	
Color		Legend Text	
		Use  Consumption	ODescription OName
		Color	
New Delete	New Delete		
INRM Delete	Delete		
OK Cancel		OH	Cancel

- Select "New" to set the number of measured value series to display in the bar chart.
- Assign a data point to each measured value series in the "Data source information" field.
- Set the time range to display in the bar chart.

### **Optional settings**

- Activate the bar chart caption in the "Parameters" tab.
- Set the caption text for the bar chart in the "Datapoints" tab.
  - Activate "Use" and enter your caption text.
  - Activate "Description" if you want to use the description of the data point for the caption text.
  - Activate "Name" if you want to use the name of the data point for the caption text.
- Set the bar colors in the "Datapoints" tab.
- Set the diagram and text styles in the "Parameters" tab.

### See also

# 13.18.14 Pie chart

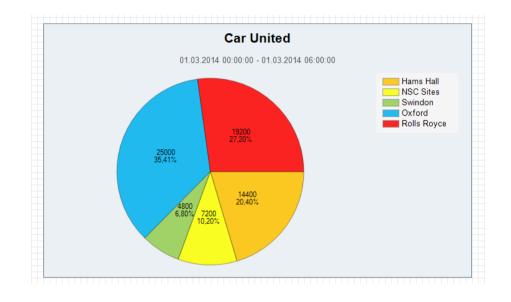
### Function

Inserts a pie chart into the Dashboard.

#### Usage

Use the "Pie Chart" dashboard object to visualize the values of one or several measured value series in the form of a pie chart.

### Example



```
Reference
```

## **Necessary settings**

Ť	Pie Chart ×
Datapoints Time Frame Parameter	
Point1 Point2 Point3 Point4	Data source information         Datapoint         d_consumption_plant_Hams_Hall         Datacycle:       900         Unit:       KWh         Datapoint ID :       167743
Point5	Legend Text Use  Hams Hall Description Name
	Layout Point color Show value 🗹 absolut 🔽 percentage
	Border color Border width
New Delete	
	OK Cancel

- Select "New" to set the number of measured value series to display in the pie chart.
- Assign a data point to each measured value series in the "Data source information" field.
- Set the unit for displaying data point values in the pie chart, for example, "percent".
- Specify the period that you want to evaluate in the pie chart.

### **Optional settings**

- Activate the pie chart caption in the "Parameters" tab.
- Set the caption text for the pie chart in the "Datapoints" tab.
  - Activate "Use" and enter your caption text.
  - Activate "Description" if you want to use the description of the data point for the caption text.
  - Activate "Name" if you want to use the name of the data point for the caption text.
- Set the bar colors in the "Datapoints" tab.
- Set the diagram and text styles in the "Parameters" tab.

#### See also

# 13.18.15 Line chart

### Function

Inserts a line chart into the Dashboard.

### Usage

Use the "Line Chart" dashboard object to visualize the values of one or several measured value series in the form of a line chart.

### Example



## Necessary settings

Datapoints Time Frame Paramete	r	
Series2	Data source information	
Series3	Datapoint d_Electricity_Production	•
	Datacycle: 2638000 Unit: kWh Datapoint ID : 144353	
	Legend Text	
	Use  Qxford Des	scription 🔘 Name
New Delete		

- Select "New" to set the number of measured value series to display in the line chart.
- Assign a data point to each measured value series in the "Data source information" field.
- Set the time range to display in the bar chart.

### **Optional settings**

- Activate the line chart caption in the "Parameters" tab.
- Set the caption text for the line chart in the "Datapoints" tab.
  - Activate "Use" and enter your caption text.
  - Activate "Description" if you want to use the description of the data point for the caption text.
  - Activate "Name" if you want to use the name of the data point for the caption text.
- Set the line colors and display width in the "Datapoints" tab.
- Set the diagram and text styles in the "Parameters" tab.

#### See also

# 13.18.16 Gauge

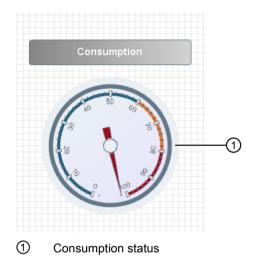
### Function

Inserts a display instrument into the Dashboard to visualize the status of data point values.

#### Usage

Use the "Gauge" dashboard object to visualize the sum of the measured value series for the defined time period. Alternatively, you can also visualize the value of the last cycle.

### Example



### Necessary settings

	Gauge
Datapoint Time Frame Gauge P	arameter Scale Sections Scale Parameter
Pointer1	Data source information
	Datapoint
	Datacycle: undefined Unit: undefined Datapoint ID : undefined
	Layout Barcolor
	Bar color
	OK Cancel
	OK Cancer

- Go to the "Data source information" field to select the data point that contains the values to be evaluated.
- Specify the period that you want to evaluate.

### **Optional settings**

- Set the pointer color.
- Set the fill color and border style in the "Parameters" tab.
- Set the scale for the display instrument in the "Scale Parameter" section.
- Set the scale range in the "Scale Sections" section.

#### See also

# 13.18.17 Panel switch

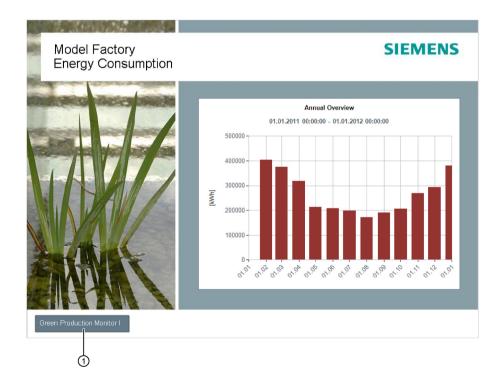
### Function

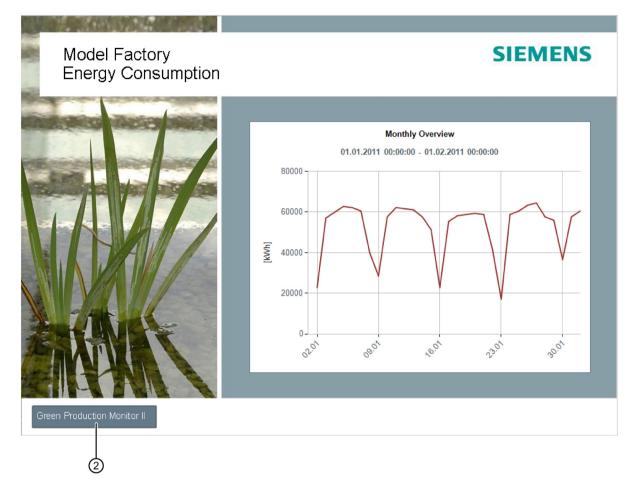
Inserts a button into the Dashboard that you can use to switch to another Dashboard .

#### Usage

Use the "Panel switch" dashboard object to distribute selected data to several dashboards. Use the new button to switch between these dashboards.

### Example





- ① Dashboard 1: Represents the annual consumption of a company in kWh. The "Green Production Monitor" button returns you to dashboard 2 to show the monthly consumption.
- 2 Dashboard 2: The "Green Production Monitor II" button returns you to dashboard 1.

### **Necessary settings**

¥	Panel Switch ×
Border Width	1 Radius 15 Color
Button Layout	
Text	Switch to panel XXX
Fontcolorstyle	
Fontsize	10 Bold Italic
Backcolor	
Switch to panel	···
Plant Oxford	•
	OK Cancel

- At "Switch to...", select the Dashboard to which you want to switch using this button.
- Enter a caption text for the button in the "Alignment" field.

# **Optional settings**

• Set the border and text styles.

# 13.18.18 Data table

### Function

Inserts a table object into the Dashboard to visualize the values of one or several data points.

#### Usage

Use the "Data Table" dashboard object to display the values and time stamp of a measured value series of a specific time period in the form of a table.

### Example

	TIMESTAMP	Water	Gas
•	06.11.2012 00:00:00	50	60
	07.11.2012 00:00:00	40	100
	08.11.2012 00:00:00	20	60
	09.11.2012 00:00:00	30	70

#### **Necessary settings**

Datapoints Time Frame Parameter	DataTable	×
Item1	Data source information           Datapoint         d_consumption_plant_Oxford           Datacycle:         2638000         Unit:         kWh         Datapoint ID :         144353	×
	Legend Text           Use O         d_consumption_plant_Oxford         O Description	Name
New Delete	Column color	

- Select "New" to set the number of data points to display in the table.
- Assign a data point to each entry in the "Data source information" field.
- Specify the period that you want to evaluate.

### **Optional settings**

- Create the "Legend name".
  - Enter a text for the table header if you activate "Description".
  - The data point name is used for the table header if you activate "Name".
- Set the column color.
- Set the table style in the "Parameters" tab.

#### See also

Reference

13.18 Dashboard objects

# 13.18.19 Line for Sankey chart

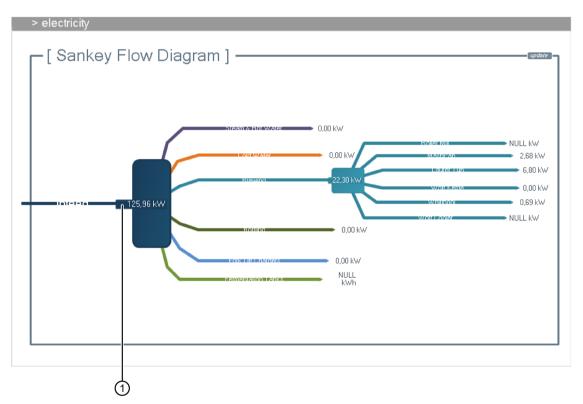
### Function

Inserts a line into the Sankey chart.

### Usage

Use the "Line" dashboard object to visualize a quantity flow in the Sankey chart. The line width is proportional to the quantity.

## Example



1 Power flow of a company

		Line		×		
Common						
Name Lir	ie					
Data acqu	isition					
Datapoint	d_Water1_Compressor			-		
	Datacycle: 900 Unit: kWh Datapoint ID: 129862					
	Refresh cycle 900	[sec] Timeshift	0 [sec]			
Flow Sele	tion					
Flow Type	Energy			-		
			ок	Cancel		

- Name the dashboard object.
- Go to the "Data acquisition" field to select the data point that contains the values to be visualized by the line.
- Select the flow type for the line in the "Flow selection" field, for example, "Electricity".

#### **Optional settings**

- You can create a new flow type in the "Flow selection" field and set the scaling.
- Specify the update cycle for the Sankey objects by entering the selected value in the Dashboard configuration. This value is activated for all Sankey objects.

The update cycle is set to five seconds by default.

#### Note

#### Specifying the update cycle

You cannot set an update cycle that is shorter than five seconds.

#### See also

Configuring the dashboard (Page 648)

#### Reference

13.18 Dashboard objects

### 13.18.20 Polyline for Sankey chart

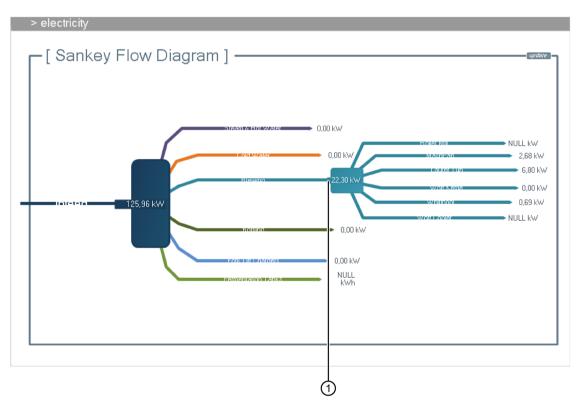
### Function

Inserts a polyline into the Sankey chart.

### Usage

Use the "Polyline" dashboard object to visualize a quantity flow in the Sankey chart. The line width is proportional to the quantity.

### Example



1 Power flow of a company

	Polyline
Comm	on
Name	Polyline
Add po	int
	Add
Data ar	cquisition
	int d_Water2_Compressor +
	Datacycle: 900 Unit: KWh Datapoint ID: 144348
	Refresh cycle 900 [sec] Timeshift 0 [sec]
Flow C	election
FIUW 3	
Flow Ty	ype Energy 🔹
_	
	OK Cancel

- Name the dashboard object.
- Go to the "Data acquisition" field to select the data point that contains the values to be visualized by the line.
- Select the flow type for the line in the "Flow selection" field.

#### **Optional settings**

- You can create a new flow type in the "Flow selection" field and set the scaling.
- Add a new point if you want to add an extra line to the polyline.
- Specify the update cycle for the Sankey objects by entering the selected value in the Dashboard configuration. This value is activated for all Sankey objects.

The update cycle is set to five seconds by default.

#### Note

#### Specifying the update cycle

You cannot set an update cycle that is shorter than five seconds.

### See also

Configuring the dashboard (Page 648)

#### Reference

13.18 Dashboard objects

## 13.18.21 Flow info

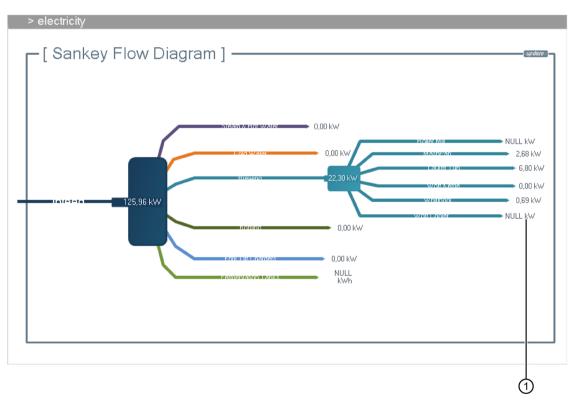
### Function

Inserts a line or polyline into the Sankey chart.

### Usage

You can use the "Flow info" dashboard object to display the name and value of a line or polyline in the Sankey chart.

### Example



① Flow quantity name

¥.	Flow descriptor
Common	
Name Flow	descriptor
Border	
Width	1 Color
Layout	
Fontcolorstyle	
Font size	10 Bold Italic
Flow connect	ion
Choose Flow	Line [-]
Fill flow color	<b>v</b>
Show value	
Show unit	
	OK Cancel

- Name the dashboard object.
- Go to "Flow connections" and select the line you want to describe using the "Flow info" dashboard object.

### **Optional settings**

- Set the border and text styles for the dashboard object.
- Activate the corresponding check box to display the value or unit in addition to the line name.

### See also

Configuring the dashboard (Page 648)

#### Reference

13.18 Dashboard objects

### 13.18.22 Process

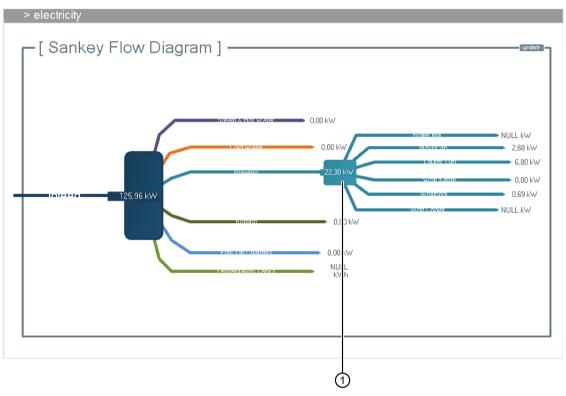
### Function

Inserts a process step into the Sankey chart.

### Usage

Use the "Process" dashboard object to visualize a process step for a quantity flow in the Sankey chart.

### Example



① Process step "Transformer 10 kV" for the power and gas supply

1	Process			
Common				
Name Proces	s			
Size				
Height	105 VVic	ith 105		
Border				
Width	1 Radius	15 Color	2	
Fillstyle				
	1			
Label				
	RoundProcess			^
Text				~
Fontcolorstyle		1		
Fontsize	_	Italic		
Alignment	O Top-Left	O Top-Center	○ Top-Right	
	OLeft	Center	◯ Right	
	O Bottom-Left	O Bottom-Center	O Bottom-Right	
		C 1110111 C CIIIICI	U I I I I I I I I I I I I I I I I I I I	
Ports				
Edit Portlist	1			
		40	Cancel	
		Ur	Cancer	

- Name the dashboard object.
- Enter a caption text for the dashboard object in the "Label" field.

## **Optional settings**

- Set the size of the dashboard object.
- Set the border and text styles for the dashboard object.
- Set the fill color for the dashboard object.
- Adapt the ports list to define additional points for the line.

13.18 Dashboard objects

### 13.18.23 Process overview

### Function

Calculates the difference between the inputs and outputs of a process step (delta calculation). The value "0" is the ideal result of this calculation. Other results indicate irregularities.

Example of two inputs and one output: Input 1 + Input 2 - Output = 0

#### Usage

Use the "Process overview" dashboard object to verify the result in the Sankey chart.

#### Necessary settings

Y	Process Summary ×
Common	
Name Proc	ess Summary
Border	
Width	1 Color
Layout	
Fontcolorstyl	e 🗾 📝
Font size	10 Bold Italic
Flow connec	tion
Choose process	Process
Choose Flow	×
Fill flow color	v 🗸
Show unit	
	OK Cancel
	a de la companya de l

- Name the dashboard object.
- Select the process step and the associated line at "Flow connection".

#### **Optional settings**

- Set the border and text styles for the dashboard object.
- Activate the corresponding check box to include the display of the unit or line color along with the process name.

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