



SmartView3
Version 1.9.0

SmartView3

Version 1.9.0
September 2012

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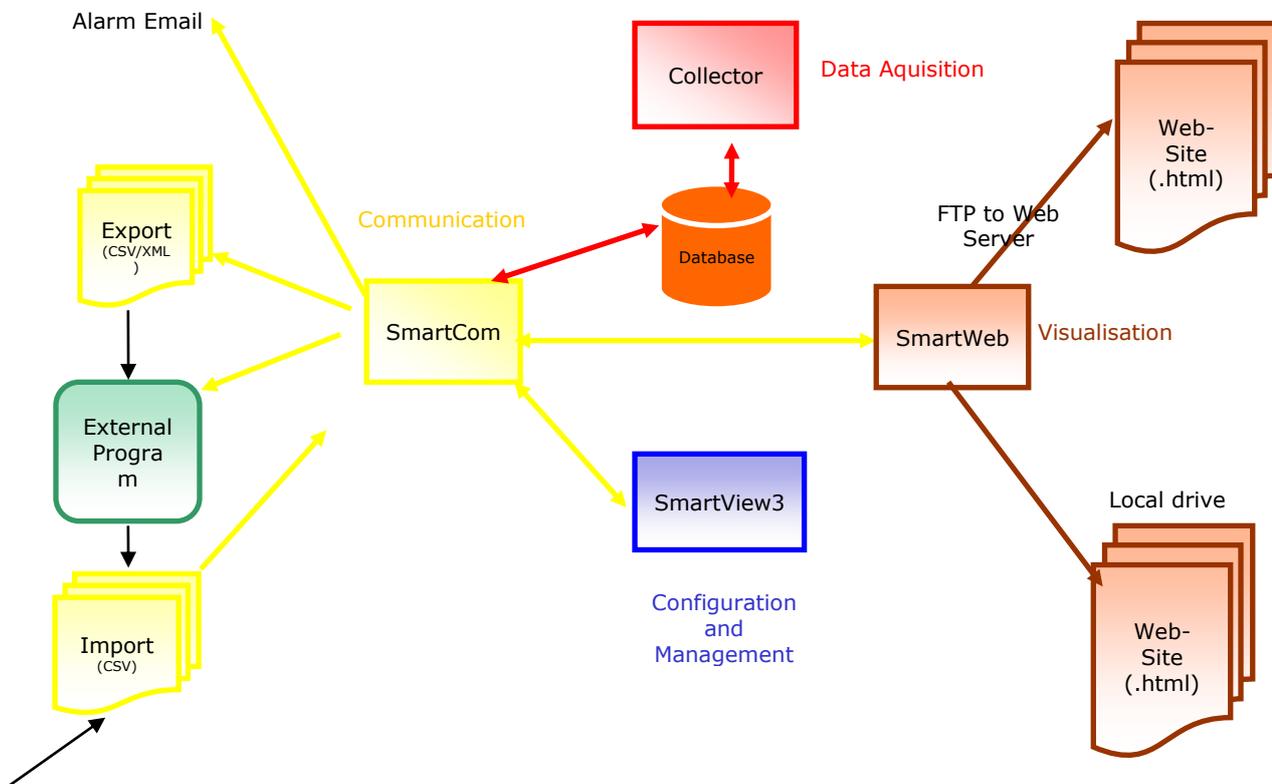


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1 Overview

SmartView3 consists of the following independent programs/modules:

- 1.) SmartView **Collector**: the Collector is used to poll measurement data from the stations and store the data in a MySQL Database.
- 2.) **SmartCom** is the communication module. This program is used by SmartView and SmartWeb to access the data in the database. It also contains a flexible export/import module, and an alarm module.
- 3.) **SmartView3** is a PC Client program used to configure all SmartView3 modules.
- 4.) The **SmartWeb** module generates a web site to visualize the measurement data. Data is displayed in tables and diagrams.



2 Installation

Requirements :

- PC with Windows 2000/XP/Vista/Windows 7 or equivalent
- Minimum 1 GB RAM recommended
- The required processing speed depends on number of stations/sensors to be polled, the number of (data) pages to be generated, and the poll/update interval.
- Minimum recommended (Collector only) is an Intel Pentium 4 (2 GHz) CPU or equivalent. For larger installations with many stations, short poll/update intervals and web visualization a fast Pentium 4 / HT / Dual Core / Extreme Edition processor may be needed.
- MySQL "Community Edition"
- A fast LAN connection to the web server (diagrams, tables, and CSV files can take up quite some space and need to be transferred to the web server)
- Disk Space for database:
 - configuration data: approx 120 Kbytes plus 1 Kbytes per Station
 - per sensor value: approx 120 Byte**NOTE:** for database maintenance (optimization, upgrades etc.) additional space is needed. Please ensure there is at least double the disk space available!
- Disk Space for Web-Sites. If you are using SmartWeb to produce web sites with you measurement data, disk space to hold the web pages is required. As a rule of thumb, the estimated amount of disc space required to show the data for a single station in day and week intervals for one year is about 110 MByte.

Note on Language Selection / Translation:

All text elements used by SmartView3 are stored in an Unicode text file. With the program files we provide one file with all text elements in English (SmartView3_en.uni), and German (SmartView3_de.uni). If you plan to use a different language, it is recommended to translate the text elements **before** installing SmartView3.

Please see [Language settings](#) below!

- **Step 1:** Install MySQL (see www.mysql.com for product license information and download).
NOTE: MySQL setup must be run with administrator privileges!
Please reboot the system after installing MySQL to complete the installation. The MySQL system service needs to be running in order to set up the collector database.
When selecting the "database usage" settings, a choice between "Multifunctional Database", "Transactional Database" and "Non-Transactional Database" is given.
Depending on this option, MySQL will utilize the appropriate database engine ("MyISAM" for "non-Transactional Database"; otherwise InnoDB);
One option that **has to be set** in the "MySQL Server Instance Configuration Wizard" is "**Include Bin Directory in Windows PATH**". If this option is not selected, the "libmysql.dll" file cannot be found when Collector or SmartCom are started (and an error message will appear).
The MySQL setup will ask for the MySQL Admin Password - this has to be entered in the "Setup Database" dialog (see below).
Note: SmartView Please adjust the settings in the my.ini MySQL configuration file to your needs- especially the "datadir" parameter - to your needs (see the MySQL manual for more information about parameters for the MySQL database).
Note: if you plan to store many measurement values, make sure that the MySQL data folder is placed on a NTFS partition, as FAT32 partitions only support files up to 4 GBytes.
NOTE on MySQL network access: if you want to run MySQL on a different computer than Collector and SmartCom (which both access the MySQL database), the database (collector) (not the tables in the database) needs to be created manually on the MySQL server, and network access from all computers or from the computer(s) on which Collector and SmartCom are running needs to be allowed for "root" AND for the MySQL user that you configure on the "database setup" dialog (see below). The default password for the MySQL user "collector" is "collector". MySQL does not allow setting the access privileges for the database via network,

so the access privileges for the MySQL user (collector) to the database (collector) need to be set on the server manually and the “MySQL user” must be created on the server manually as well. **THIS MUST BE DONE BEFORE YOU PROCEED WITH THE INSTALLATION!**

The database can be set up on the “MySQL Server” by installing SmartView3 and running this setup on the server as well – if the server is Windows based. Then you only need to ensure that the “root” user has network access privileges. The database will then be created and the MySQL user (collector) will be granted network access by the setup procedure described below, and the software can be installed on the “client” computer.

If you run firewall software on the MySQL server computer, please make sure the MySQL port (default 3306) is allowed in the firewall.

Note for 64-bit MySql: If you use a 64 bit operating system with the 64 bit version of MySQL, you will have to copy the 32-bit version of “libmysql.dll” to the SmartView3 program folder (from the 32-bit version of MySql).

- **Step 2:** Create a folder where you like to install the Collector program, e.g. “C:\Program Files\SmartView3”. Copy all program files to this folder.
Note: if you install SmartView on a Microsoft® Vista© /Windows 7 or later system, it is NOT recommended to use a folder in “\Program Files” to install SmartView, because Vista will place all files written by program files to a folder below “Program Files” in the user’s “VirtualStore” folder, which is a hidden folder. In this case the ini files for the SmartView program modules, and (if you do not specify a different path below) the log files will be placed in that hidden “VirtualStore” folder, and the ini and log files are hard to find. It is recommended to use a folder outside “Program Files” to install SmartView on a Microsoft Vista/Windows 7 system, e.g. create a folder “c:\SmartView3” and copy the program files to this folder. You need administrator access rights, or the administrator password to create that folder.
- **Step 3:** Start SmartView3.exe. SmartView3 will start SmartCom, and then prompt for installation/configuration information for the different modules of SmartView. For most of the configuration options (except the MySQL Administrator password), the default values can be used (just click “OK” on the various dialog boxes that are displayed). A complete description of the setup process is below.

2.1 Language settings

The first dialog that appears is to select the language for your SmartView3 installation.

All text elements used by SmartView3 are stored in an Unicode text file. With the program files we provide one file with all text elements in English (SmartView3_en.uni), and German (SmartView3_de.uni). If you plan to use a different language, it is recommended to translate the text elements **before** installing SmartView3.

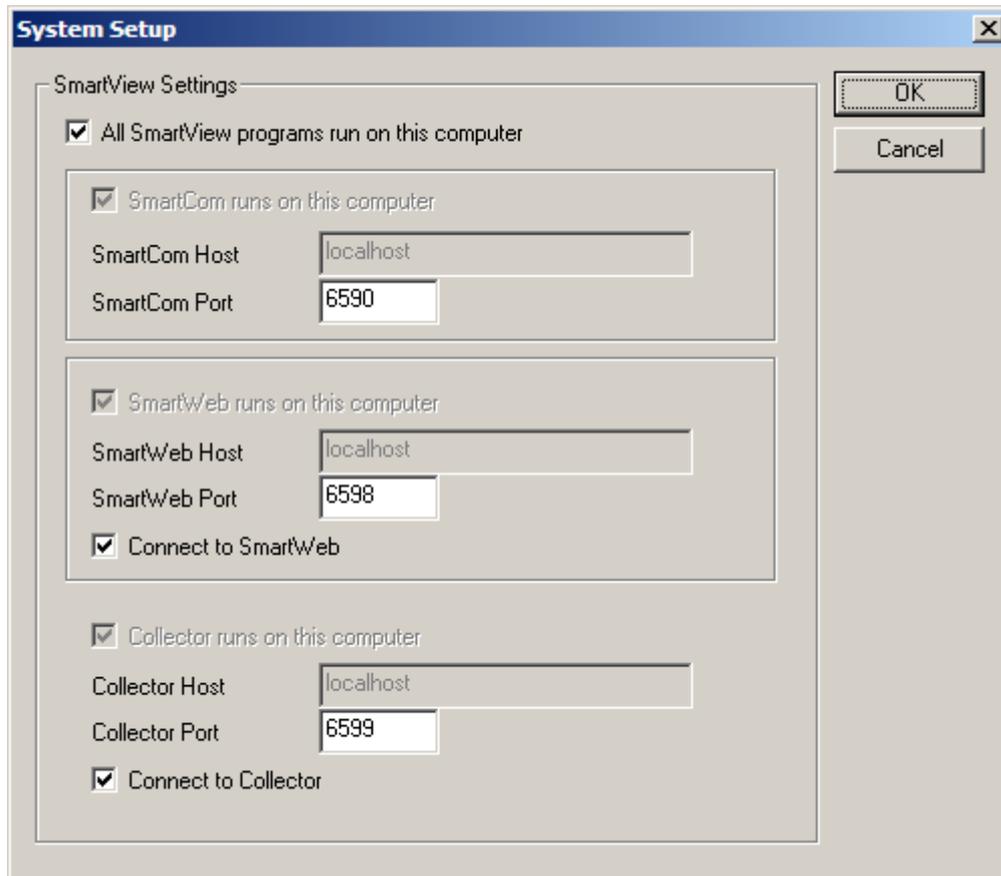
Please **do not modify** the text files provided with the program files, as they are updated with every new version of SmartView3. To create a new translation, please copy the SmartView3_en.uni file or the SmartView3_de.uni file to SmartView3_xx.uni (where xx is replaced by an abbreviation for your language, e.g. "hu" for Hungarian, or "es" for Spanish). Then translate the text elements in the new copy. The Text files are divided in 2 sections – the first part "Basic" contains the Text elements needed for the Website. The second part contains the text elements for the SmartView3 user interface. If you need the specific language for the website only, you only need to translate the first part. You can remove any entries that you don't translate from the new text file (see comments in the provided text files). All entries not found in the new text file will always be taken from the "master" file SmartView3_en.uni.

SmartView3 will prompt you to select the language to be used during setup (if there is a file other than SmartView3_en.uni available).

Note that some of the text elements are stored in the database during the setup process, so changing the language settings after installing the software will not result in a complete translation. You may need to translate some of the (configured) items using the appropriate setup dialogs. Some Text elements like sensor names are read from the specific device, and are not part of the text files. You may need to translate these items (like sensor names) using the appropriate setup dialogs.

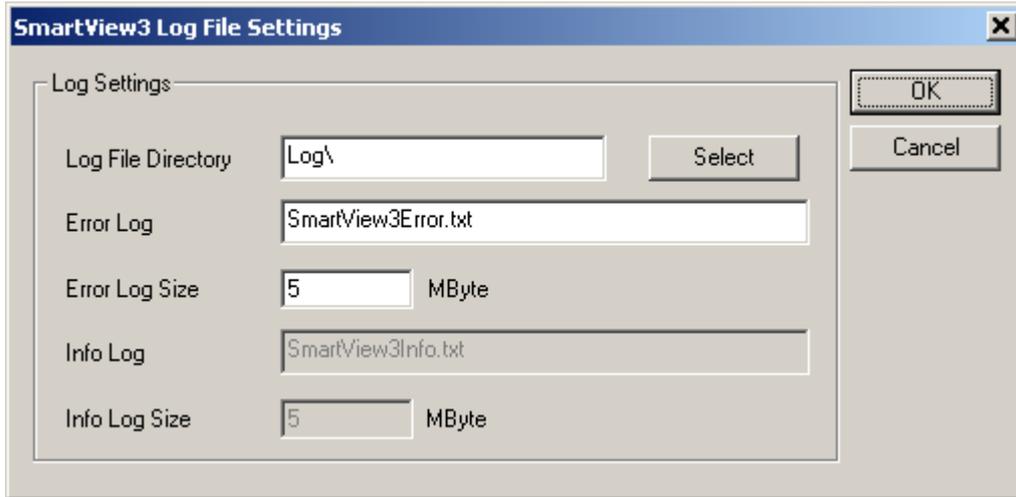


2.2 System Setup Dialog



Note: if you plan to run all programs only on the local machine, the default settings (host set to "localhost") are sufficient. If you plan to run SmartView3.exe from a different machine, and this way access SmartCom/Collector via Network (or run SmartCom/SmartWeb or Collector on a different computer), you need to uncheck the "All SmartView programs run on this computer" check-box. The host name is then changed to the local computer name instead of "localhost", and this way network access is enabled. If "All SmartView programs run on this computer" is checked, and host is set to "localhost", network access to the programs is not enabled !

Next, the log file settings for SmartView3 and SmartCom are configured:



SmartView3 Log File Settings

Log Settings

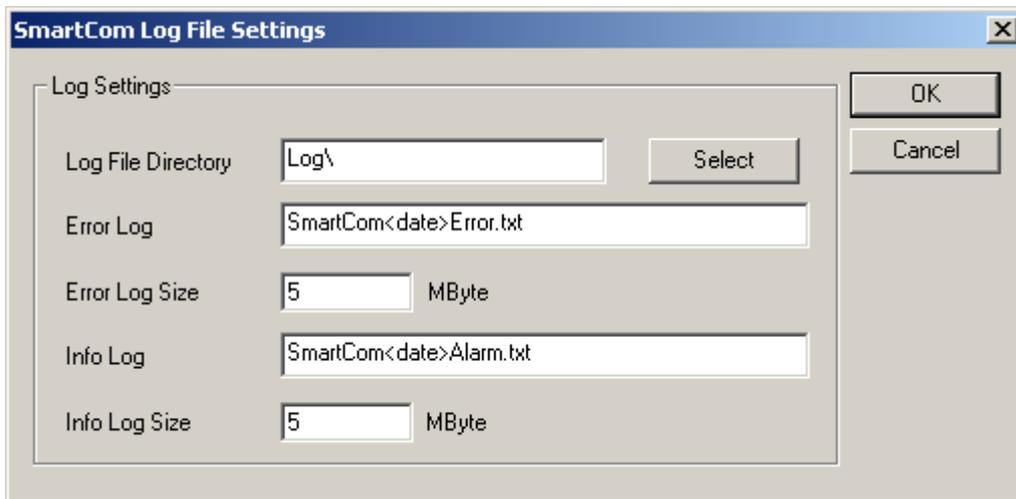
Log File Directory: Log\

Error Log: SmartView3Error.txt

Error Log Size: 5 MByte

Info Log: SmartView3Info.txt

Info Log Size: 5 MByte



SmartCom Log File Settings

Log Settings

Log File Directory: Log\

Error Log: SmartCom<date>Error.txt

Error Log Size: 5 MByte

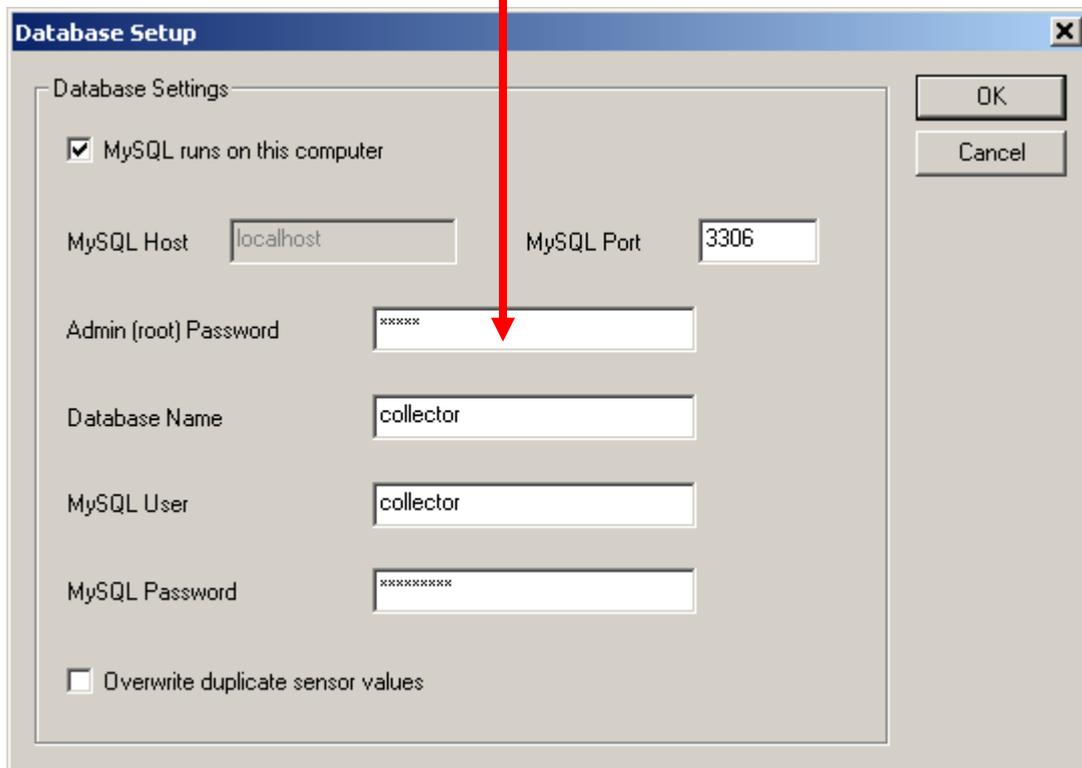
Info Log: SmartCom<date>Alarm.txt

Info Log Size: 5 MByte

The default filenames for error and info log file are “SmartComError.txt” and “SmartComAlarm.txt” respectively. If you want to keep log files on a daily basis, please add the <date> tag to the filenames as shown above.

2.3 Database Setup

- Then, the parameters for the MySQL database are set.
You need to enter the MySQL Administrator password you entered when installing MySQL



The screenshot shows the 'Database Setup' dialog box with the following fields and options:

- MySQL runs on this computer
- MySQL Host: localhost
- MySQL Port: 3306
- Admin (root) Password: ***** (indicated by a red arrow)
- Database Name: collector
- MySQL User: collector
- MySQL Password: *****
- Overwrite duplicate sensor values

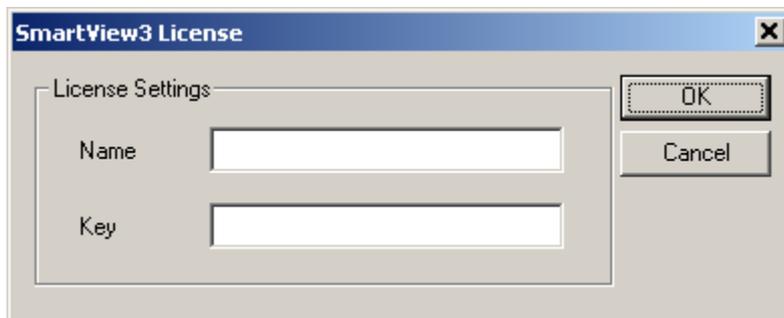
Buttons: OK, Cancel

SmartView3 will now start SmartCom to create or update the database

Note: updating the database may take a lot of time, depending on the amount of measurement data you have already stored in your database. Updating the database from an earlier version requires that there is at least the amount of free disc space on the volume where your MySQL database is located as the sensor_values table requires, because the table may be duplicated during the update process!

2.4 License

- After creating or updating the database, the license information is set up. The basic license allows you to run Collector for up to 5 stations – it does not support other features like export/import, alarms or SmartWeb to create web sites.

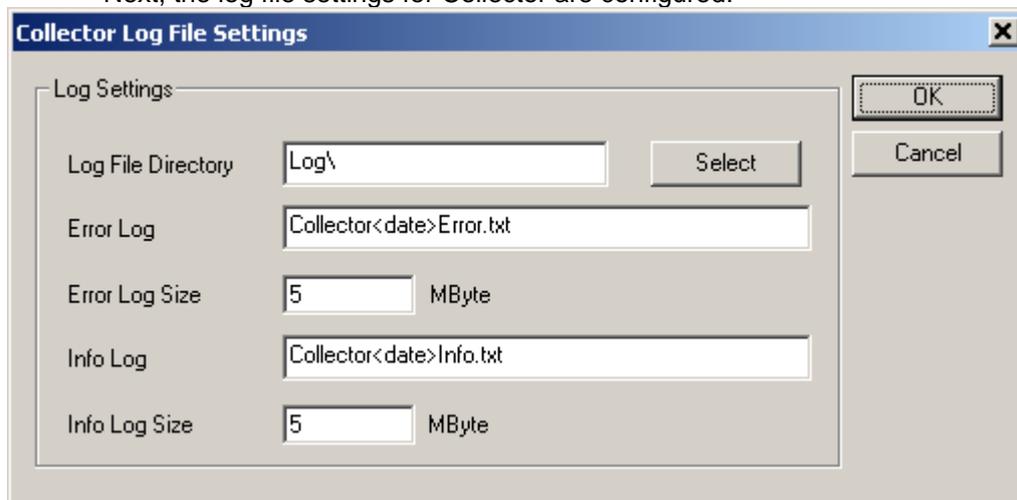


Even if you didn't purchase an "extended" License, you still need to enter a license name and a key. After you entered the license information, a dialog displays your license settings, e.g.:



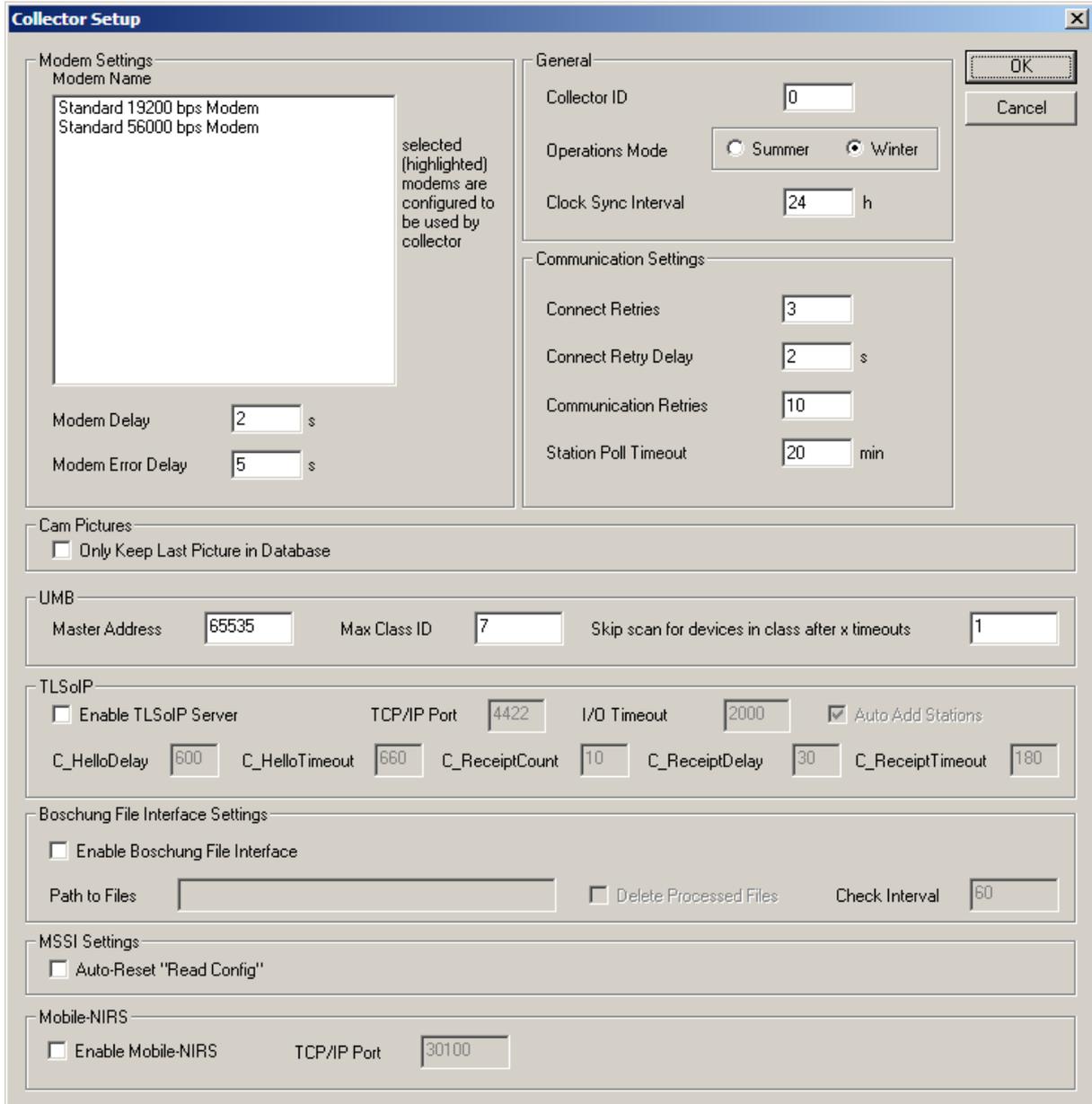
2.5 Collector Setup

- Next, the log file settings for Collector are configured:



The default filenames for error and info log file are “CollectorError.txt” and “CollectorInfo.txt” respectively. If you want to keep log files for Collector on a daily basis, please add the <date> tag to the filenames as shown above.

Then a dialog to configure other parameters for Collector is displayed:



Here you need to select the modem(s) you would like to use with Collector to connect to the stations (if you use dial up connections to your stations). You can assign the modems to different “modem pools”.

If you plan to use TLSoIP based stations, you need to enable “TLSoIP”, and set the TLSoIP parameters to your needs

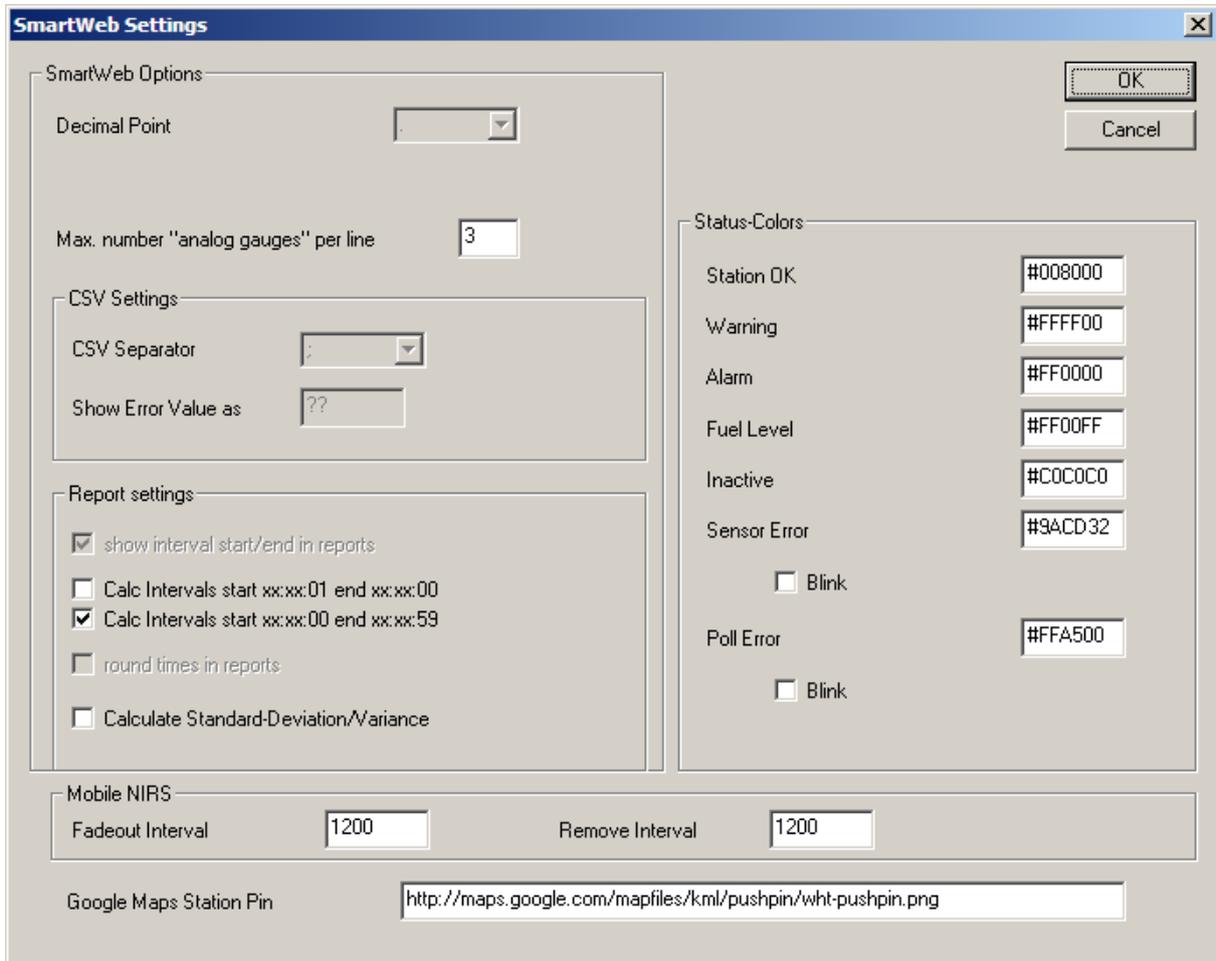
If you have “Boschung” stations that report the data using the specific Boschung file format (transferred via FTP to a folder on your server), you need to enable the “Boschung File Interface” and configure the path (folder) where these files are located.

The param “Auto Add Station” controls for TLSoIP and Boschung stations, whether a new station is created automatically when data from a station with an unknown OSI7-Address is received.

SmartView3 then prompts to start the Collector. If you did not upgrade from a previous version of Collector, there are no stations configured yet, so you may want to start the Collector later after you configured your stations

2.6 SmartWeb Setup

- If your license includes SmartWeb, the SmartWeb log file settings are configured next:



The image shows the 'SmartWeb Settings' dialog box. It is divided into several sections:

- SmartWeb Options:** Contains a 'Decimal Point' dropdown menu and a text box for 'Max. number "analog gauges" per line' with the value '3'.
- CSV Settings:** Contains a 'CSV Separator' dropdown menu (set to ';') and a text box for 'Show Error Value as' (set to '??').
- Report settings:** Contains several checkboxes:
 - show interval start/end in reports
 - Calc Intervals start xx:xx:01 end xx:xx:00
 - Calc Intervals start xx:xx:00 end xx:xx:59
 - round times in reports
 - Calculate Standard-Deviation/Variance
- Status-Colors:** A list of color codes for different states:
 - Station OK: #008000
 - Warning: #FFFF00
 - Alarm: #FF0000
 - Fuel Level: #FF00FF
 - Inactive: #C0C0C0
 - Sensor Error: #9ACD32
 - Poll Error: #FFA500
 There are also 'Blink' checkboxes for 'Sensor Error' and 'Poll Error', both of which are currently unchecked.
- Mobile NIRS:** Contains text boxes for 'Fadeout Interval' (1200) and 'Remove Interval' (1200).
- Google Maps Station Pin:** A text box containing the URL: `http://maps.google.com/mapfiles/kml/pushpin/wht-pushpin.png`

Buttons for 'OK' and 'Cancel' are located in the top right corner.

This dialog shows various settings for the web sites generated by SmartWeb.

- **Decimal Point:** the decimal point/separator.
- **Max. Number “analogue gauges” per line:** the maximum number of analogue gauges shown on one line on a “station” page.

CSV settings: parameters for the csv download file that can be part of a “data” page

The “**Report settings**” specify parameters for reports on station or data pages as well as for the station reports in the SmartView3 station configuration dialog.

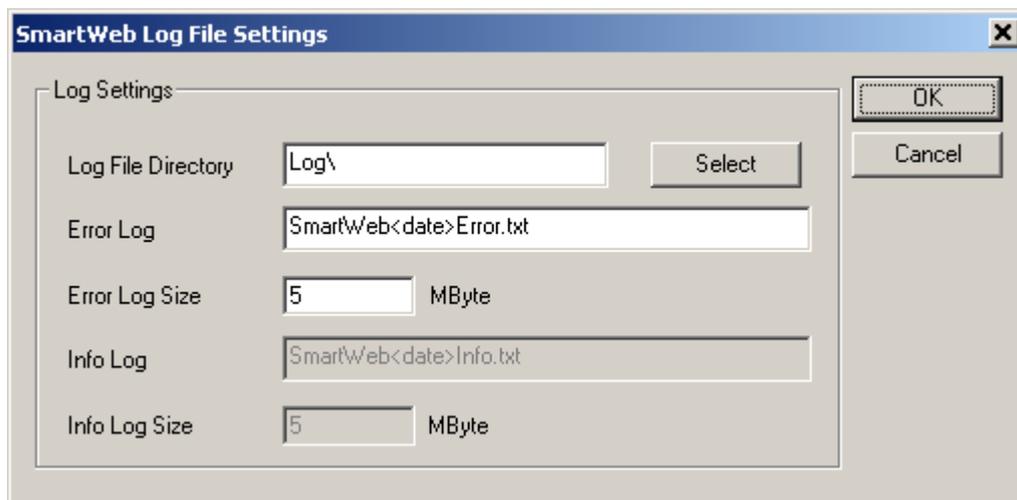
- **Show interval start/end in reports:** if this option is selected, the timestamp shown on the left hand side of each row in a report shows the report start and end times (instead of only the report end times)
- The option “**Calc Intervals start xx:xx:01 end xx:xx:00**” (or start xx:xx:00 end xx:xx:59) control, how interval start/end times are determined in calculations like reports or calc channels that base on interval calculations.
- The option “**round times in reports**” controls whether the calculated timestamps (if intervals end with xx:xx:59) will be rounded to the next full minute in SmartWeb pages or not

- **Calculate Standard-Deviation/Variance:** if activated, the standard deviation and variance will be shown in the footer lines of reports (in addition to min/max or sum values). **Note: this calculation increases (computing) time when calculating reports!**

The “**Status Color**” settings allow configuration of the colors used to indicate the different station stati on the station page and overview table, and the station icons on the map page(s).

The “**Mobile NIRS**” parameters control the display of mobile data on Google maps. Fadeout Interval is the interval over which the color for the status trail is “faded out”. Remove Interval controls the maximum time interval for which data is displayed on the map.

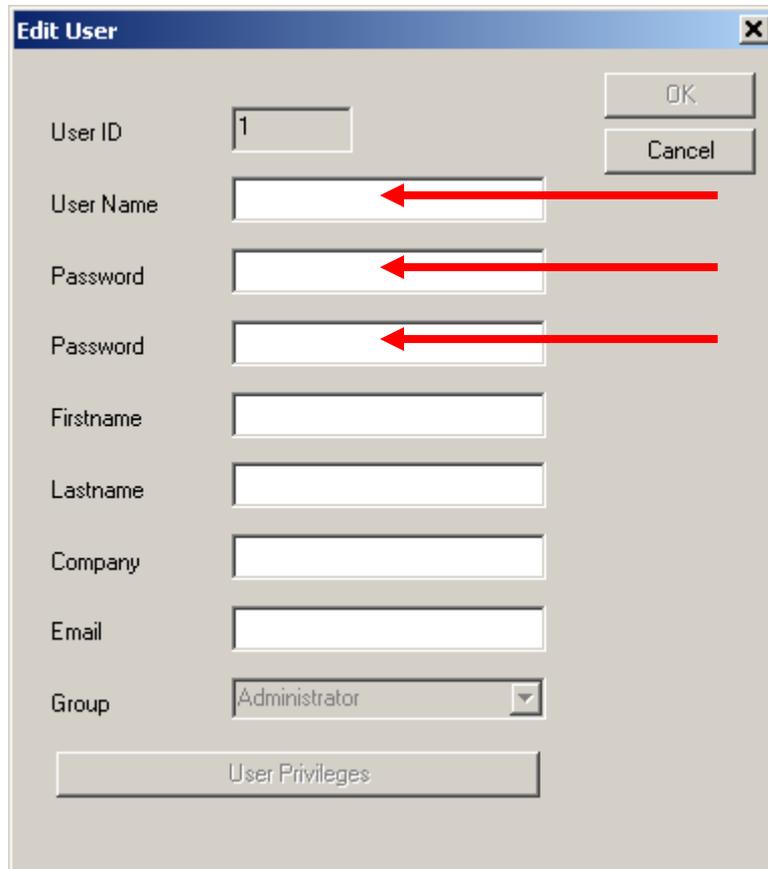
Google Maps Station Pin: configures the pin icon that is used to mark the stations position on Google maps. Note that this icon should be white (or black and white), as the color for the station status (see above) is mapped above the icon, and is merged with the icon color.



The default filename for error and info log file are “SmartWebError.txt” and “SmartWebInfo.txt” respectively. If you want to keep log files for SmartWeb on a daily basis, please add the <date> tag to the filenames as shown above.

2.7 Administrator User

- Now, the administrator user for SmartView3 is set up. You need to set up at least one administrator user by entering a user name and the password (all other information may be left blank).



The screenshot shows the 'Edit User' dialog box. The 'User ID' field contains the number '1'. The 'User Name' field is empty. The 'Password' field is empty. The second 'Password' field is empty. The 'Firstname', 'Lastname', 'Company', and 'Email' fields are empty. The 'Group' dropdown menu is set to 'Administrator'. There are 'OK' and 'Cancel' buttons on the right side. A 'User Privileges' button is located at the bottom. Three red arrows point to the 'User Name', 'Password', and 'Password' fields, indicating that these fields must be filled out.

After you entered the user information, SmartView3 is started, and you can configure your stations and web site(s).

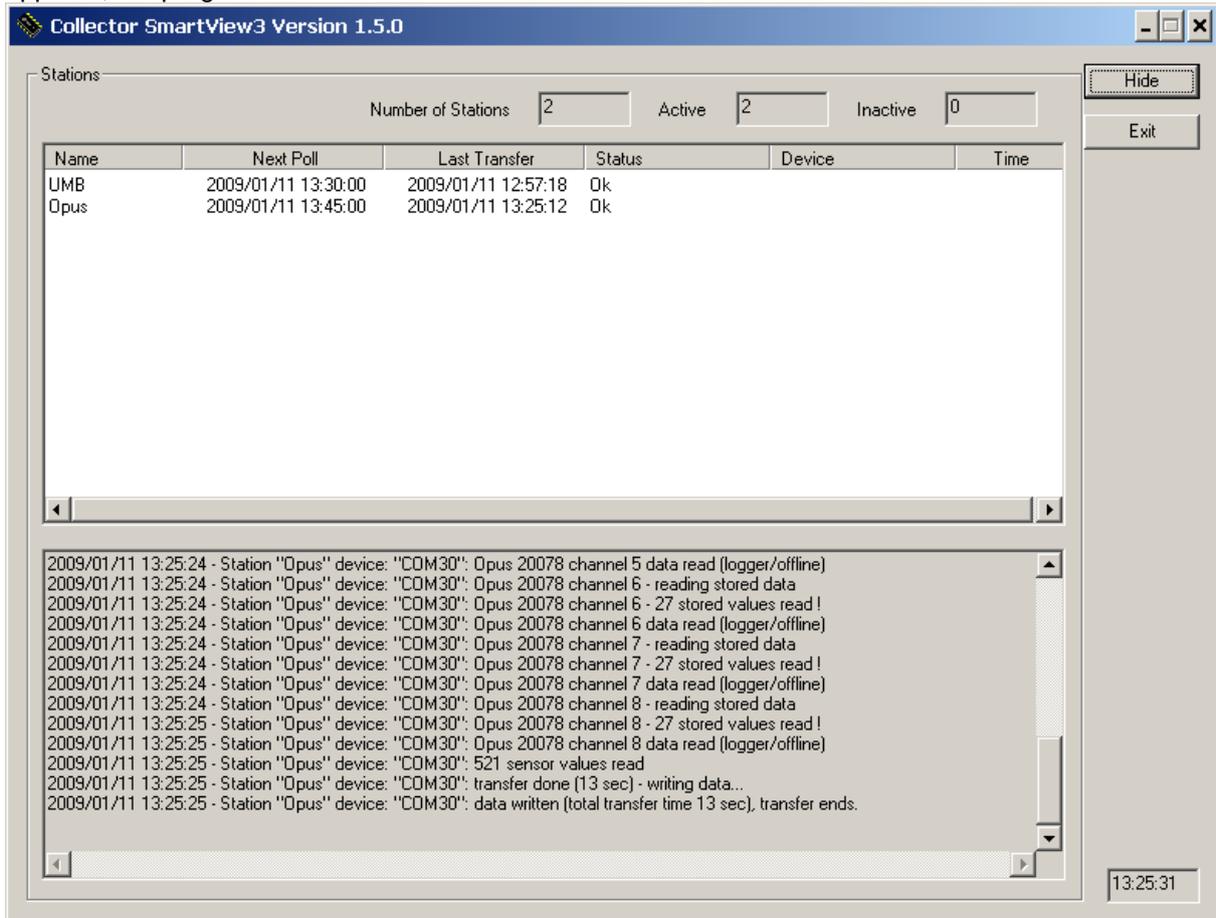
3 The Modules

3.1 Collector SmartView3

Collector runs as a background program. When started, it is minimized, and shows as an icon in the system tray bar:



If you double click this icon, or if you right click the icon and select “show” from the pop-up menu that appears, the program is shown:



The configured stations are shown in the upper part of the window, showing the next station due to be polled first.

In the lower part of the window status/information messages are displayed

Configuration information for Collector is (if not stored in the database) held in the Collector.ini file.

3.2 SmartCom

The SmartCom module provides access to the database for SmartView3 and SmartWeb, and contains the “export/import” and “alarm” functions.

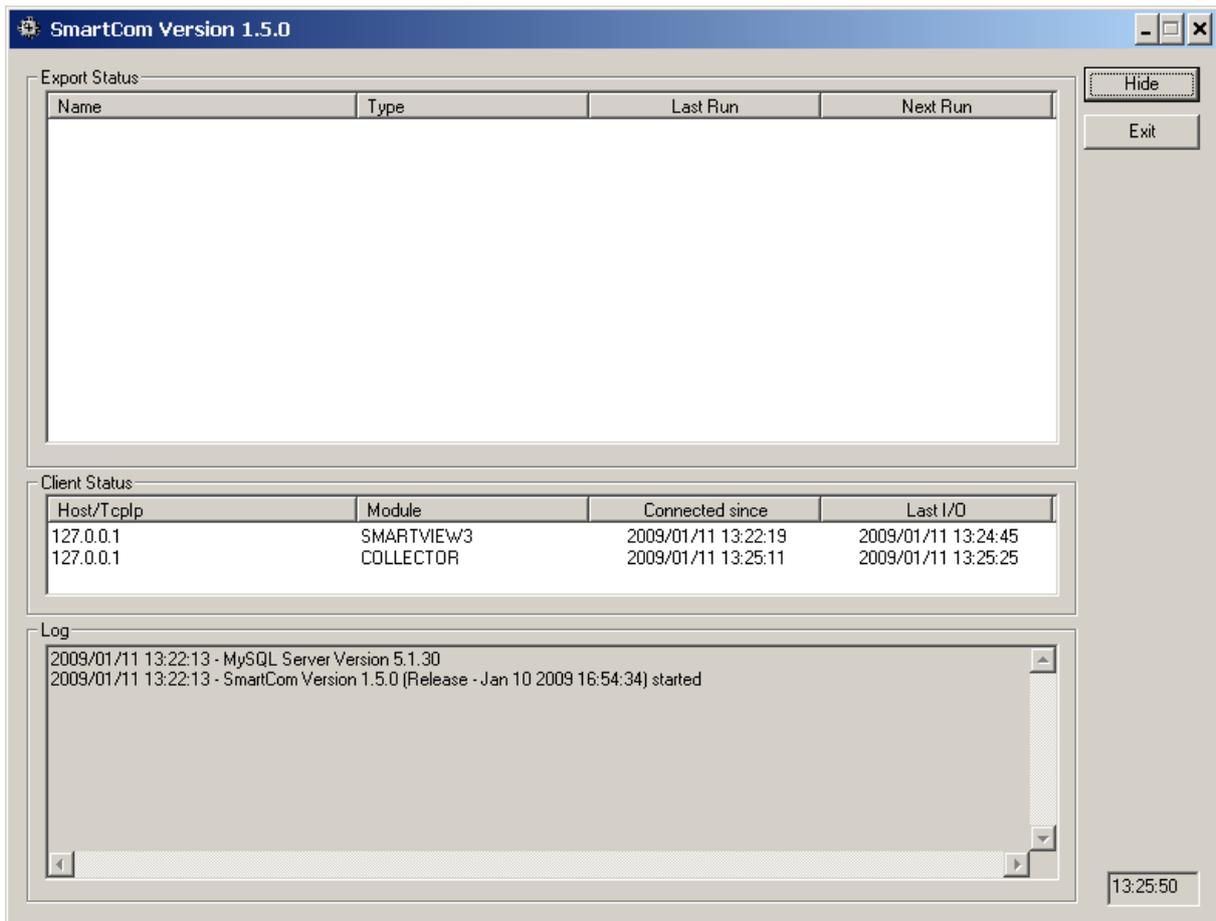
Like Collector, SmartCom accesses the MySQL database via the `libmysql.dll` library provided by MySQL. This library must be accessible by the program, i.e. it must be installed on the computer so that it can be found by the operating system (either in an appropriate system directory, or in the directory where the SmartCom program is located).

It is recommended to run SmartCom and Collector on the same computer where the database is located, to minimize network traffic when accessing the database.

Like Collector, SmartCom is run as a background program, and is minimized to the system tray when started.



If you double-click the icon in the system tray, or right click the icon and select “show” from the pop-up menu, the SmartCom window is displayed:



In the upper part of the window, any configured automatic export jobs are displayed. Below that, the SmartView3 modules that are connected to SmartCom are shown. In the lower part, error and information messages are displayed.

Configuration information for SmartCom is held in the SmartCom.ini file.

3.3 SmartWeb

SmartWeb is the module that creates the web pages and uploads these pages to a web server (if ftp upload is configured for a site)

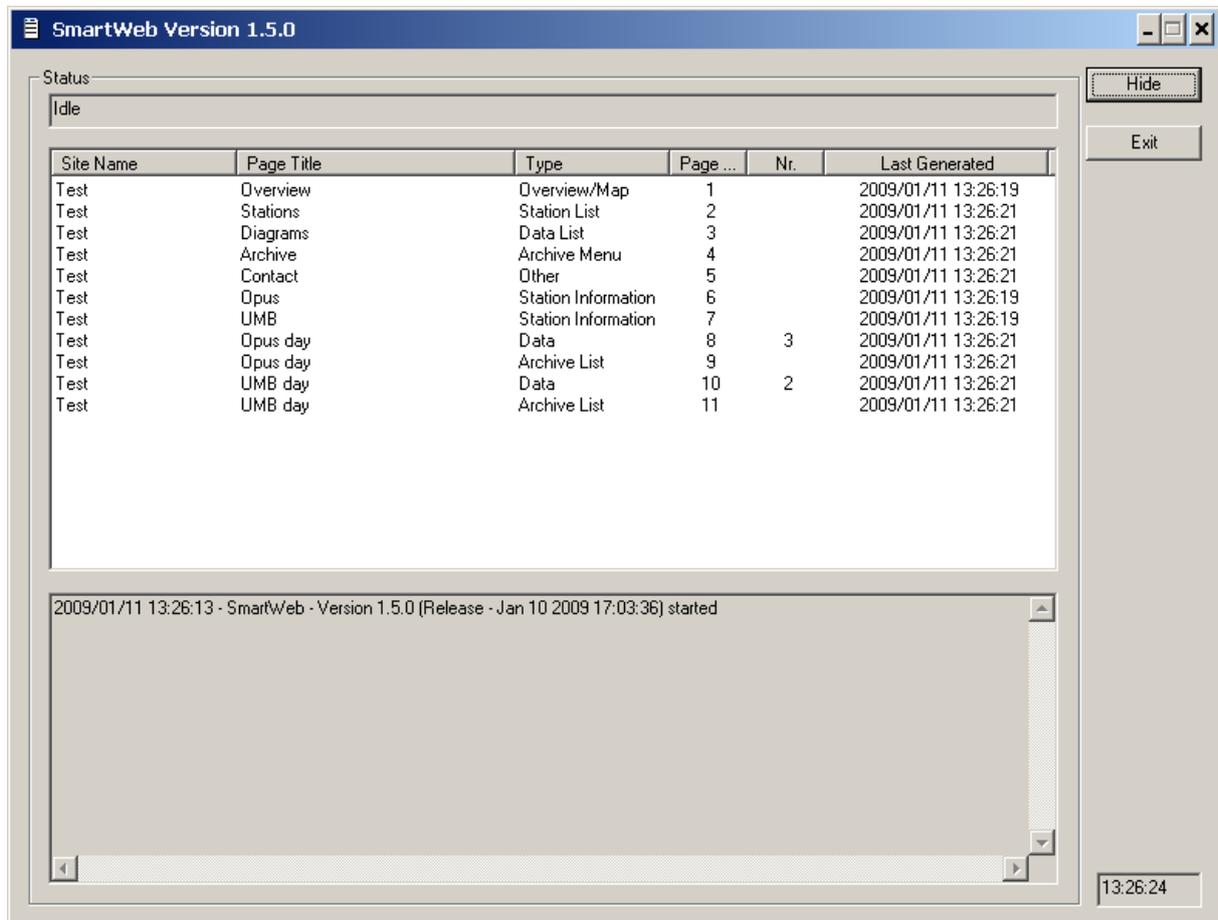
SmartWeb communicates with SmartCom to access the data in the database indirectly.

The program is designed to be run constantly (after the site has been configured initially using SmartView3). You may want to place a link to the SmartWeb program in the “Autostart” folder of your system. Note that SmartCom must be running in order for SmartWeb to start - if you run SmartWeb and SmartCom on the same PC make sure to start SmartCom before starting SmartWeb.

Like Collector or SmartCom, SmartWeb runs as a background program and is minimized to the system tray after startup:



If you double click the system tray icon, or right click the icon and select “show” from the pop-up menu, the program window is displayed:



In the upper part of the window, all pages of all configured web sites are displayed, with information about when the pages were updated last.

In the lower part of the window, error and status messages are displayed.

Configuration information for SmartWeb is held in the SmartWeb.ini file.

3.4 SmartView3

SmartView3 is the configuration program for all functions/modules of the software package.

In future releases, SmartView3 may also provide functions to view and analyze the measurement data in diagrams and tables.

SmartView3 communicates with SmartCom to access data - it does not access the database directly.

4 SmartView3 Menus

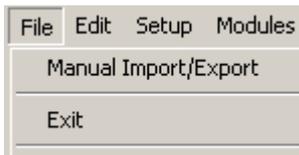
4.1 Main Menu

The main menu contains the following menu items:



File Edit Setup Modules Help

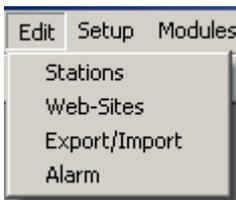
4.1.1 File



- Manual Import/Export : configure/run a manual import/export job
- Exit : exit SmartView3

4.1.2 Edit

Configure Stations, Web-Sites, Export/Import and Alarm settings



- Stations: view Collector status and configure stations
- Web-Sites: configure web sites
- Export/Import: configure automatic export/import jobs
- Alarm: configure alarm settings for stations and sensors

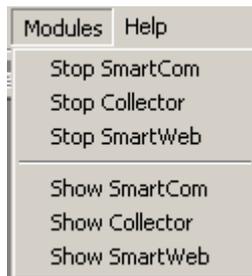
4.1.3 Setup

Setup options for SmartView3

Setup	Modules	Help
Database		
System		
License		
Device Sensor Types		
Units		
Logical Sensor Types		
Value Mapping		
Status Mapping		
Deleted Stations		
Backup/Archive Data		
Delete Sensor Values		
Find Data-Gaps		
Collector		
SmartWeb		
SmartView		
Users and Groups		
Logoff		

- Database : the database settings
- System: SmartView3 system setup (hosts and IP ports for the SmartView3 modules)
- License: setup SmartView3 License
- Device Sensor Types: edit device sensor types
- Units: edit units
- Logical Sensor Types: edit logical sensor types (Sensor Type Templates)
- Value Mapping: edit value mapping templates
- Status Mapping: edit status mapping templates
- Deleted Stations: manage deleted stations, i.e. either “undelete” a deleted station, or remove the station and all related data completely.
- Backup/Archive data: setup automatic backup and/or compression of data
- Delete Sensor Values: delete values for selected sensors from database. The additional option “delete obsolete sensor values” detects and removes sensor values from the database that are not associated with a station sensor. Note that this might take a lot of time.
- Find Data-Gaps: analyze measure values for one or all stations to identify data gaps / outage times for station(s)
- Collector: edit Collector options
- SmartWeb: edit SmartWeb options
- SmartView: edit SmartView3 options
- Users and Groups: edit users and groups
- Logoff: logoff current user

4.1.4 Modules



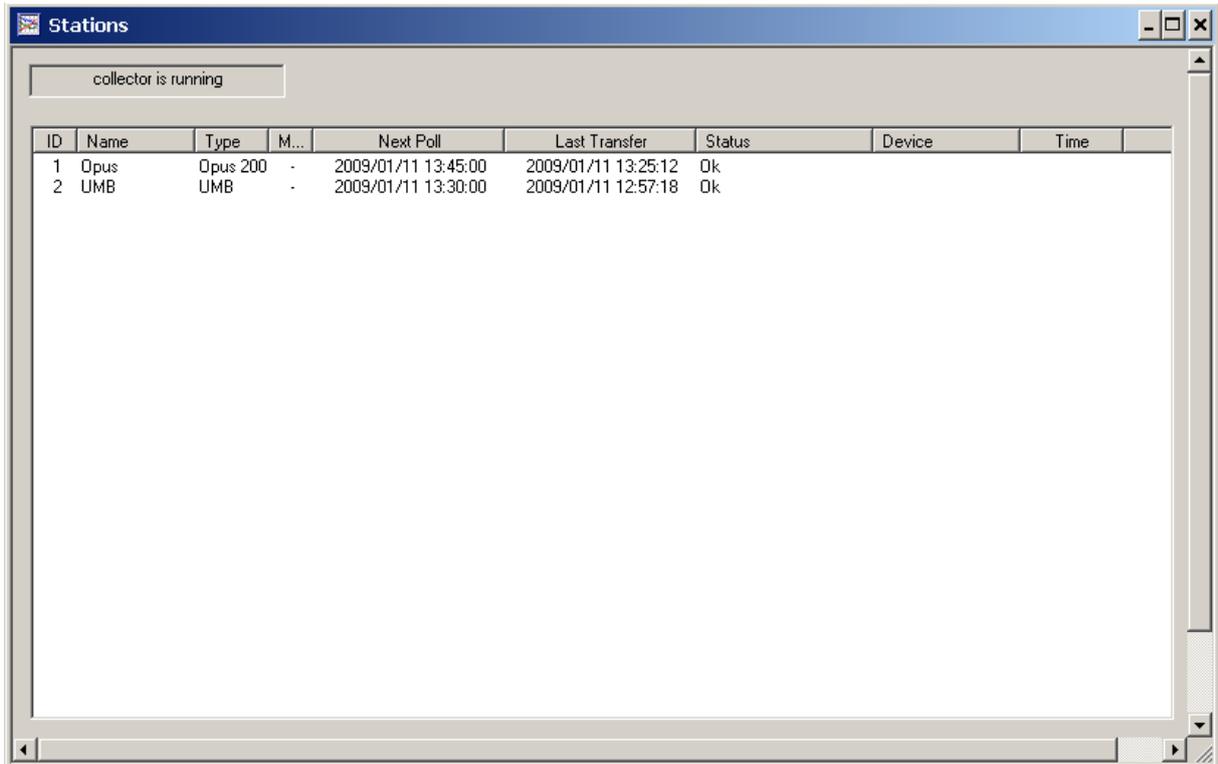
- Start/Stop Smartcom: start or stop the SmartCom program
- Start/Stop Collector: start or stop the Collector program
- Start/Stop SmartWeb: start or stop the SmartWeb program
- Show SmartCom: show the SmartCom program window (if running)
- Show Collector: show the Collector program window (if running)
- Show SmartWeb: show the SmartWeb program window (if running)

5 Configure Stations

To configure stations, select “Edit->Stations” from the main menu.

This opens the station/collector status view window:

5.1 Station status



The screenshot shows a window titled "Stations" with a status bar at the top indicating "collector is running". Below this is a table with the following data:

ID	Name	Type	M...	Next Poll	Last Transfer	Status	Device	Time
1	Opus	Opus 200	-	2009/01/11 13:45:00	2009/01/11 13:25:12	Ok		
2	UMB	UMB	-	2009/01/11 13:30:00	2009/01/11 12:57:18	Ok		

The window shows all configured stations, and the status of the station in Collector, e.g. the status of a station if it is currently polled by collector (and the collector is running).

To edit a station, double click the station in the list, or select the station and select “Station->Edit” from the menu.

The list of stations can be sorted by “ID”, “Name”, “Type”, “Modem Pool”, “Next Poll”, “Last Transfer” or “Status” by clicking on the appropriate column header.

To create a new station, select “Station->New” from the menu, or left click in the station window to show the pop-up menu. The pop-up menu contains the same menu items as the main menu “Stations” (which is available when the station window is opened).



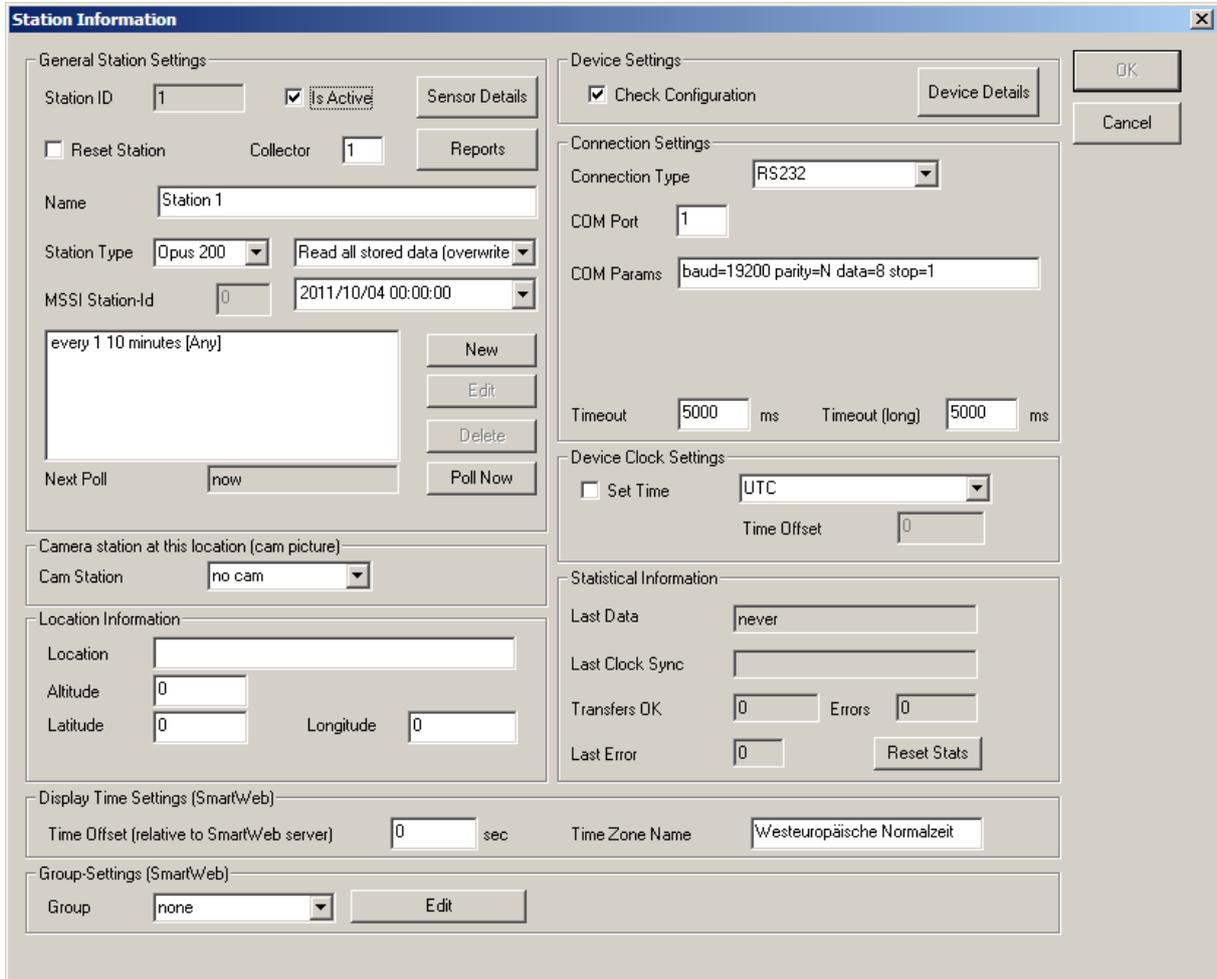
“Edit Station” or “New Station” will display the station configuration dialog (see below).

“Poll Now” will re-set the “next poll” time for the selected station to “now”.

“Station active/inactive” will toggle the active status of the station.

“Abort transfer” will abort the transfer in progress for the selected station
“Poll All Stations Now” will re-set the “next poll” time for all stations to “now”.

5.2 Station Settings



The screenshot shows the 'Station Information' dialog box with the following sections and fields:

- General Station Settings:** Station ID (1), Is Active, Sensor Details, Reset Station, Collector (1), Reports, Name (Station 1), Station Type (Opus 200), Read all stored data (overwrite), MSSl Station-Id (0), 2011/10/04 00:00:00, every 1 10 minutes [Any], New, Edit, Delete, Next Poll (now), Poll Now.
- Device Settings:** Check Configuration, Device Details, OK, Cancel.
- Connection Settings:** Connection Type (RS232), COM Port (1), COM Params (baud=19200 parity=N data=8 stop=1), Timeout (5000 ms), Timeout (long) (5000 ms).
- Device Clock Settings:** Set Time, UTC, Time Offset (0).
- Statistical Information:** Last Data (never), Last Clock Sync, Transfers OK (0), Errors (0), Last Error (0), Reset Stats.
- Location Information:** Location, Altitude (0), Latitude (0), Longitude (0).
- Display Time Settings (SmartWeb):** Time Offset (relative to SmartWeb server) (0 sec), Time Zone Name (Westeuropäische Normalzeit).
- Group-Settings (SmartWeb):** Group (none), Edit.

- **Station ID:** the (program internal) station id
- **Is Active:** station is active (or inactive)
- **Sensor Details:** shows information about all sensors of a station (see below)
- **Name:** the name of the station
- **Station Type:** the station type
- **Read online data/Read stored data/Read all stored data:** read online data or data stored in logger. If “read all stored data” is selected, the start time for reading the logger data can be set in the edit field below the selection box.
- **MSSl Station ID:** the MSSl station id for the station (MSSl and MSSl Cam station type)
- **Station Schedule:** this list contains one or more station schedule entries (see below)
- **Next Poll:** time station will be polled next
- **Cam Station ID:** Cam (FTP/HTTP/MSSl) station associated with the station
- **Location/Altitude/Latitude/Longitude:** location information about station
- **Check Configuration:** check the station configuration every time a station is polled
- **Device Details:** shows information about all devices at the station
- **Connection Type:** the connection type for the station. Depending on the connection type, different connection parameters can be configured
- **Timeout/Timeout (long):** Timeout settings for device I/O
- **Device Clock Settings:** time/clock settings for station.

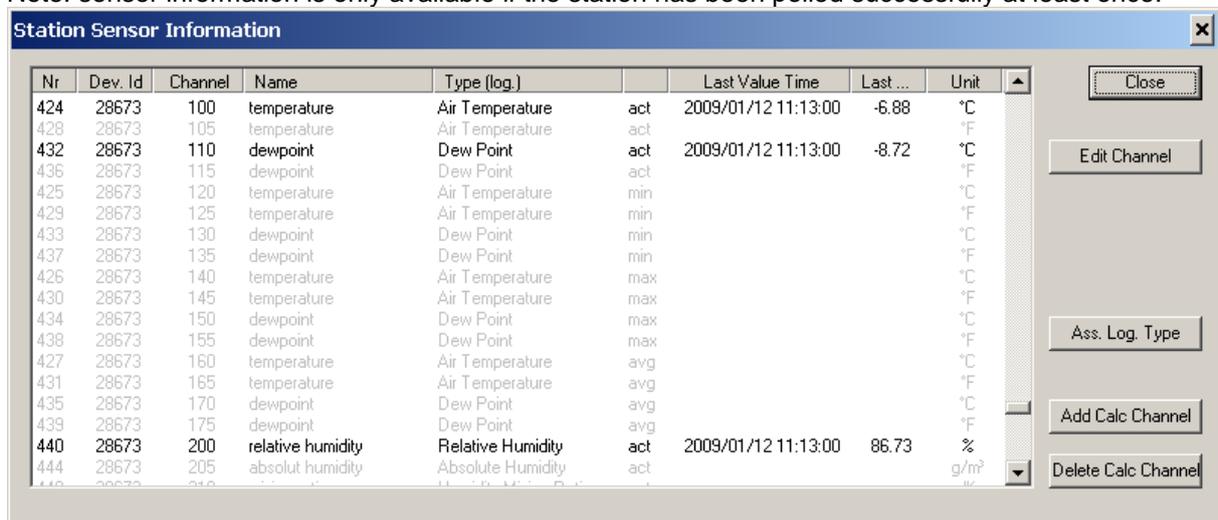
NOTE: when reading data from the device memory (stored data), the clock settings MUST BE SET to the device clock settings, even if the clock is not automatically synchronized- otherwise the time information for the retrieved data may not be correct!

- Set Time: synchronize the stations clock automatically to the system time, depending on the time zone settings
- Statistical Information: some statistical information about the station
- Display Time Settings / Time Offset: Time offset for station relative to SmartWeb server time. This offset will be used when displaying station data on the station page and on data pages for this station. Note: offset will NOT be used for data pages with data from different stations (only for data pages that have a unique station id assigned, e.g. only show data from one station).
- Display Time Settings / Time zone Name: Information only. Time zone can be displayed on station page (see [Edit "Station Information"](#))
- Group: Group this station belongs to. Using the "Edit" button nested/hierarchical groups can be configured. If groups are configured, the station list page, data list page and archive list page in SmartWeb will show the stations / data pages ordered by these groups. If "popu-menus" are used with SmartWeb, the menu entries in the respective popup menu will be ordered by these groups as well.

5.2.1 Station Sensor Details

Clicking on the "Sensor Details" button opens a window that displays all sensors/channels for a station:

Note: sensor information is only available if the station has been polled successfully at least once.



Nr	Dev. Id	Channel	Name	Type (log.)		Last Value Time	Last ...	Unit
424	28673	100	temperature	Air Temperature	act	2009/01/12 11:13:00	-6.88	°C
428	28673	105	temperature	Air Temperature	act			°F
432	28673	110	dewpoint	Dew Point	act	2009/01/12 11:13:00	-8.72	°C
436	28673	115	dewpoint	Dew Point	act			°F
425	28673	120	temperature	Air Temperature	min			°C
429	28673	125	temperature	Air Temperature	min			°F
433	28673	130	dewpoint	Dew Point	min			°C
437	28673	135	dewpoint	Dew Point	min			°F
426	28673	140	temperature	Air Temperature	max			°C
430	28673	145	temperature	Air Temperature	max			°F
434	28673	150	dewpoint	Dew Point	max			°C
438	28673	155	dewpoint	Dew Point	max			°F
427	28673	160	temperature	Air Temperature	avg			°C
431	28673	165	temperature	Air Temperature	avg			°F
435	28673	170	dewpoint	Dew Point	avg			°C
439	28673	175	dewpoint	Dew Point	avg			°F
440	28673	200	relative humidity	Relative Humidity	act	2009/01/12 11:13:00	86.73	%
444	28673	205	absolut humidity	Absolute Humidity	act			g/m³

Disabled sensor channels are displayed in gray. For all active sensor channels, the last value time, last value and unit are displayed.

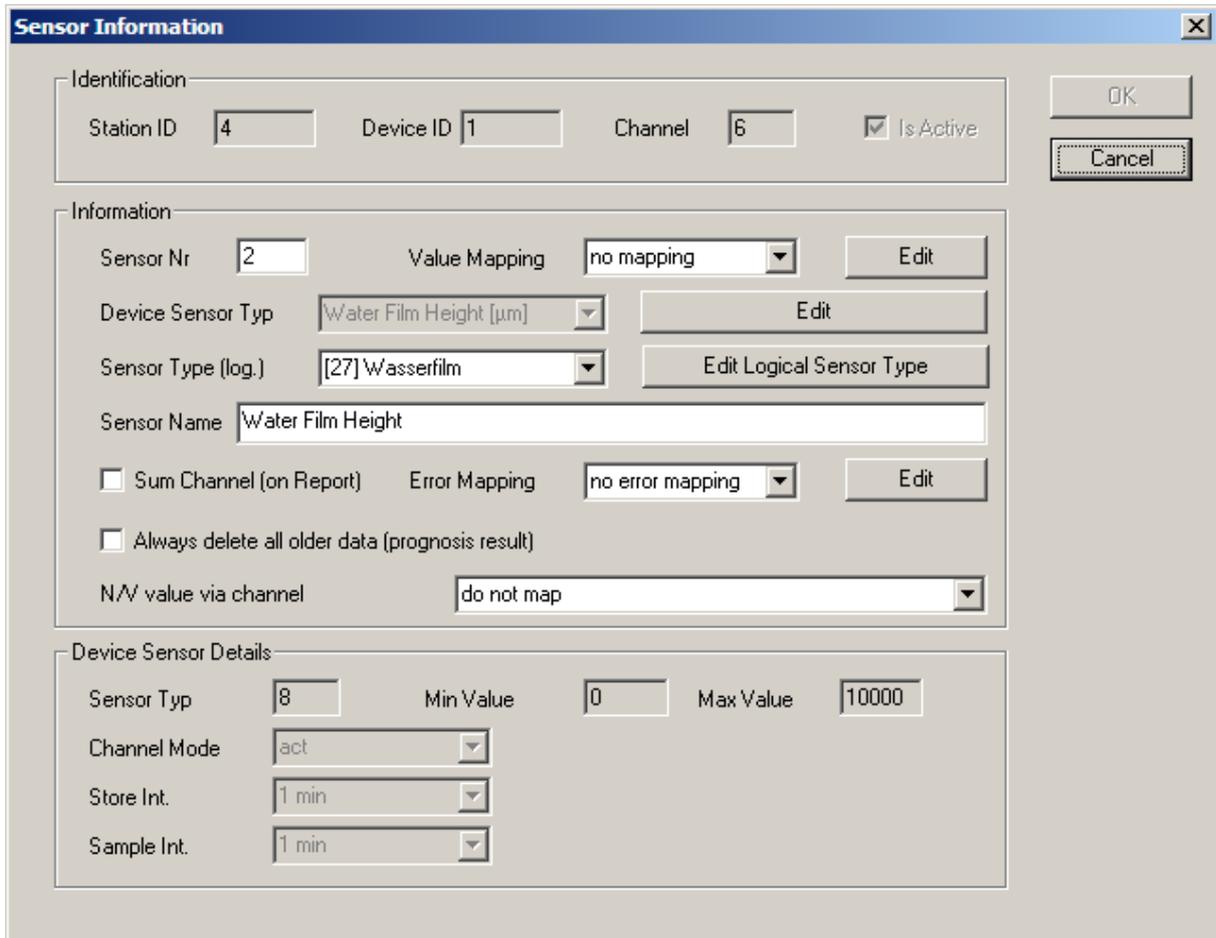
To view/edit the station sensor settings, double click the channel in the list, or select the channel and click the "Edit Channel" button.

Buttons:

- Ass. Log Type: open dialog to show/change logical sensor type assignments for every active sensor of the station
- Add Calc Channel: add a calc channel (see below)
- Delete Calc Channel: delete a calc channel (see below)

5.2.1.1 Sensor Information

For all sensors reported by the device, the “sensor information” dialog is displayed. For “calculated channels” please see chapter 5.2.1.2 below.



The station sensor-channel information is displayed.

Depending on the station type, following configuration details may be set:

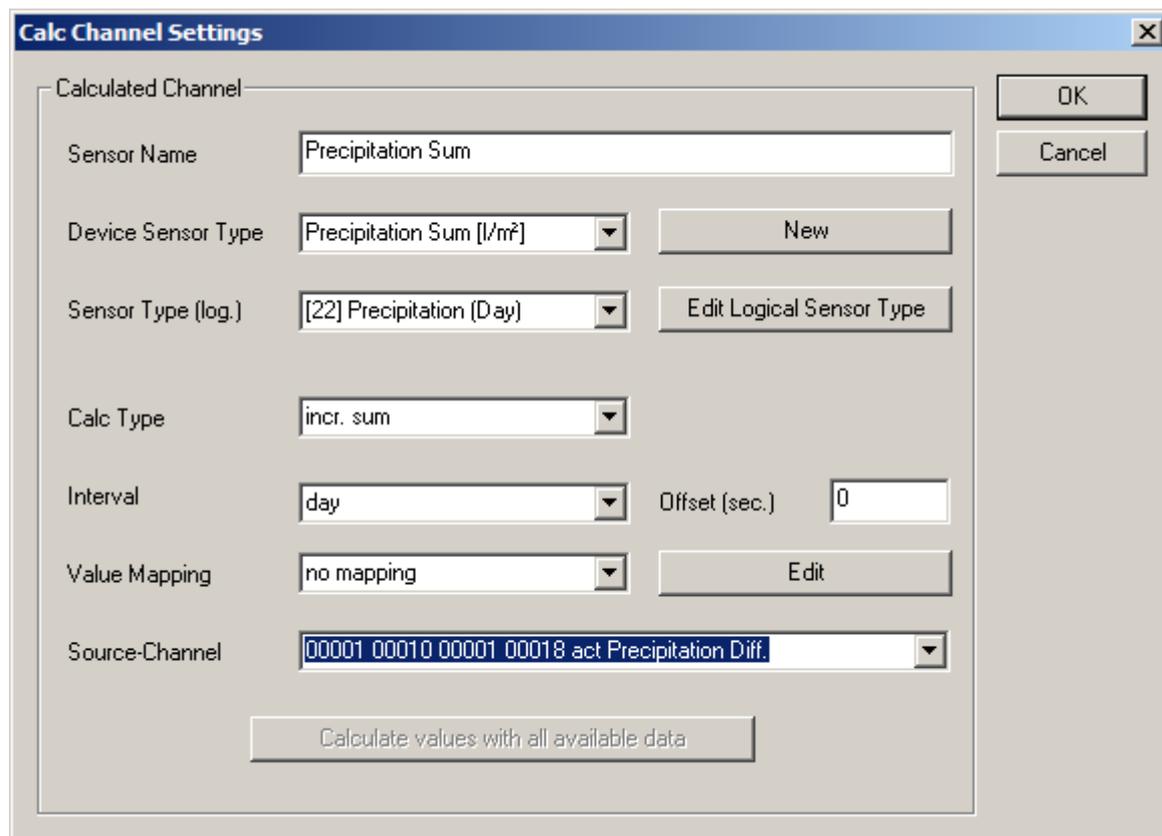
- **Is Active:** for UMB devices, a selected sensor/channel can be set active (will be read) or inactive (will not be read). For all other device types, this cannot be changed (depends on the device configuration)
- **Sensor:** The (within a station unique) sensor nr assigned to this channel. The sensor nr is used in web site pages and in export jobs to refer to a specific sensor.
- **Value Mapping:** mapping of sensor values – applied before values are stored to the database (see [Value Mapping](#))
- **Device Sensor Type:** the device sensor type
- **Sensor Type (log):** the logical sensor type.
Note: SmartView automatically assigns a logical sensor type to each sensor (as far as possible – for some Opus200 sensors it cannot be assigned automatically). This may however not be the correct sensor type. You should check and assign a **unique** logical sensor type to each (active) sensor of the station. If, for example, you have a station with multiple road sensors, please create new logical sensor types (Surface Temperature 2, Road Condition 2 etc.) for each additional road sensor, so each sensor has a unique logical sensor type assigned.
- **Sensor Name:** the name used for this sensor/channel. For Opus200 devices, this name is stored in the device, and changing the name will result in a configuration change of the device; The change will not be visible until the station is polled next time and the change is applied to the device

- **Sum Channel (on Report):** controls whether a channel that is not already configured as “Sum” channel in the device should be treated as “Sum” channel in SmartView3 reports.
- **Error Mapping:** Error mapping to be applied to sensor values with error codes before they are written to the database. See chapter “Error Mapping”.
- **Always delete all older data:** for prognosis result channels – always delete all older data for a sensor channel when new data is transmitted
- **N/A Value via channel:** set the N/A value for this sensor channel when the selected “source” sensor channel reports the N/A value. This can be used e.g. when transmitting values for a road sensor via TLS to set the freeze temperature to a special “not-available” value when the residual salt is reported as “255” = not available. Note that for source and target channel the “N/A” value must be configured for the appropriate sensor type.
- **Channel Mode:** this can only be changed for Opus200 devices
- **Store Interval:** this can only be changed for Opus200 devices
- **Sample Interval:** this can only be changed for Opus200 devices

5.2.1.2 Calculated Channels

If a “calculated channel” is added or edited, the following dialog is displayed:

At the moment only “simple” calculations (min/max/avg/sum/diff and value mapping) based on one “source sensor” are supported.



- **Sensor Name:** name for the calculated sensor
- **Device Sensor Type:** (device) sensor type for the calculated channel – select from list or create a new type
- **Sensor Type (log):** logical sensor type for the calculated channel – select from list or create a new type.
- **Calc Type:** calculation type for channel:
Currently following types are supported:
 - Value mapping – use Value Mapping (see below) to calculate new value for each source sensor value

- **Min** – calculate minimum value for each given Calc Interval (one value at the end of each interval)
- **Max** – calculate maximum value for each given Calc Interval (one value at the end of each interval)
- **Avg** – calculate average value for each given Calc Interval (one value at the end of each interval)
- **Sum** – calculate sum value for each given Calc Interval (one value at the end of each interval)
- **Incr. sum** – calculate incremental sum value for each given interval – one value for every measure value in the interval.
- **Diff** – calculate difference for counter values, e.g. precipitation amount from absolute precipitation for UMB R2S sensor
- **Saline concentration** – calculate saline concentration from freeze temperature (IRS21)
- **Calc Interval:** time interval for min/max/avg/sum/incr. sum calculation
- **Offset:** Offset in seconds for interval calculation (min/max/avg/sum/inc. sum)
- **Value Mapping:** Value Map to be used for “value mapping” calculation
- **Source Sensor:** the source sensor for the calculation

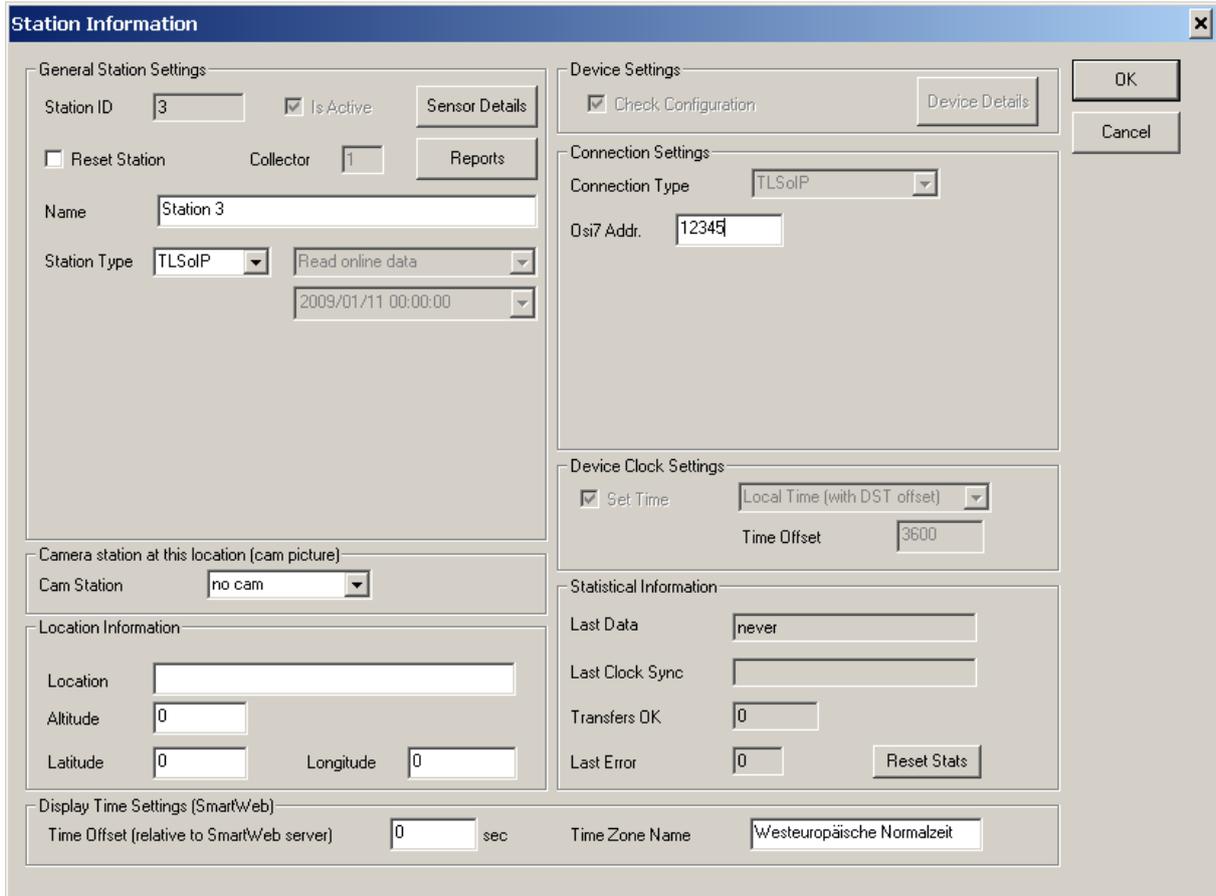
Calculation for a calc channel is done whenever new data for the source sensor is read from the device. The calculation is done in the “Collector” program after saving the new sensor values. Using “Calculate values with all available data” you can (re-) calculate the values for this channel for all available data for the source channel.

Note: the timestamp for calculated values that are calculated over a given interval (i.e. min/max/avg/sum calculation) is set to the end of the given interval, e.g. if the interval is “day”, the timestamp will be 23:59:59 hours of the given day etc. If the interval is smaller than one day, the timestamp is “rounded” to the next full minute.

5.2.2 TLSoIP Stations

Configuration for a TLSoIP station differs from other station types, as in this case the communication between the station and Collector is not initiated by Collector, but by the station. In order to support TLSoIP stations, TLSoIP must be activated in the Collector Setup Dialog (see [Collector Setup](#)).

TLSoIP stations are recognized by their unique OSI7 address. If a station connects to Collector, the database is searched for a configured station with this OSI7 address. If not station with this address is found, Collector automatically configures a new TLSoIP station for the OSI7 address (if the param “Auto Add Stations” is set in the Collector Setup).



Station Information

General Station Settings

Station ID: 3 Is Active

Reset Station Collector: 1

Name: Station 3

Station Type: TLSoIP

Device Settings Check Configuration

Connection Settings

Connection Type: TLSoIP

OSI7 Addr.: 12345

Device Clock Settings

Set Time: Local Time (with DST offset)

Camera station at this location (cam picture)

Cam Station: no cam

Location Information

Location:

Altitude: 0

Latitude: 0 Longitude: 0

Statistical Information

Last Data: never

Last Clock Sync:

Transfers OK: 0

Last Error: 0

Display Time Settings (SmartWeb)

Time Offset (relative to SmartWeb server): 0 sec Time Zone Name: Westeuropäische Normalzeit

Configuration parameters for a TLSoIP station are (besides general items like an assigned CAM station or the location information) limited to the station name and OSI7 Address.

5.2.2.1 Channels for TLSoIP Stations

If an TLSoIP station connects, it will typically send “DE-Status” messages for all sensors configured in the station to the server (i.e. Collector). TLSoIP channels are recognized by their “FG”, “Channel-Nr” and “Type” configuration. DE Status Messages only contain FG and Channel information. If no channel for this FG/Channel can be found in the database, an error message is written to the log file.

If the station reports sensor values, FG, Channel-Nr and Type are transmitted with the sensor value. If no channel for this FG/Channel/Type can be found in the database, Collector will automatically configure a new channel.

This way Collector will automatically configure all necessary data for a TLSoIP station if the station does report sensor values for all channels. If there are channels configured in the station that are deactivated, or do not report values (e.g. because the sensor is defect), Collector will not be able to auto-configure that channel – and thus will not be able to display the error status for such a channel. To cover this, you can manually add/edit/delete channels for TLSoIP stations:

Nr	Dev. Id	Channel	Name	Type (log.)		Last Value Time	Last ...	Unit
1	3	1	Temperature	Air Temperature	act			°C
2	3	2	Surface Temperature	Surface Temperature	act			°C
3	3	3	Saline Concentration	Saline Concentration	act			‰
4	3	4	Precipitation Intensity	Precipitation Intensity	act			mm/h
5	3	5	Air Pressure	Air Pressure	act			hPa
6	3	6	Relative Humidity	Relative Humidity	act			‰
7	3	7	Wind Direction	Wind Direction	act			°
8	3	8	Visibility	Visibility	act			m
9	3	9	Subsurface Temperatur...	Subsurface Temperatur...	act			°C
10	3	10	Subsurface Temperatur...	Subsurface Temperatur...	act			°C

To add a new sensor to a TLSolP station, you need to enter the FG, Type and Channel for the sensor:

TLS Sensor

TLS Sensor Settings

FG Type Channel

OK
Cancel

If you edit an already configured sensor for a TLSolP station, an additional button “TLS Settings” is available to change the FG/Type/Channel assignments for a sensor:

Sensor Information

Identification

Station ID Device ID Channel Is Active

Information

Sensor Nr Value Mapping Edit

Device Sensor Typ Edit

Sensor Type (log.) Edit Logical Sensor Type

Sensor Name

Sum Channel (on Report)

Device Sensor Details

Sensor Typ Min Value Max Value

Channel Mode

Store Int.

Sample Int.

OK
Cancel
TLS Settings

The TLS FG is stored in the “Sub ID” attribute for the sensor (and the “Device Sensor Type” attribute of the Device Sensor Type information), the TLS channel is stored in the “Channel” attribute. The TLS Type is stored in the “Sub-Type” attribute of the Device Sensor Type information.

5.2.3 MSSI Stations

From version 1.6.0 on the following basic MSSI functions are supported in SmartView:

MSSI “Data Station”

- Read station configuration, especially the station’s MSSI station id and sensor configuration.
- Transfer current measure values from station (read online data)
- Transfer stored measure values from station (read stored data)
- Synchronize station’s clock
- Reset station

MSSI “Cam Station”

- Transfer current cam picture (read online data)
- Transfer stored cam pictures (read stored data)

When configuration data is read from a MSSI station, the cameras configured for this station are not automatically configured in SmartView.

In SmartView measurement data and camera picture(s) are handled by separate stations of type “MSSI” or “MSSI Cam”.

MSSI Cam stations need to be configured manually, especially the MSSI station ID and the MSSI cam id need to be set (besides the basic connection information like host name and IP address). The local folder where the – at a time – last cam picture is stored may be configured.

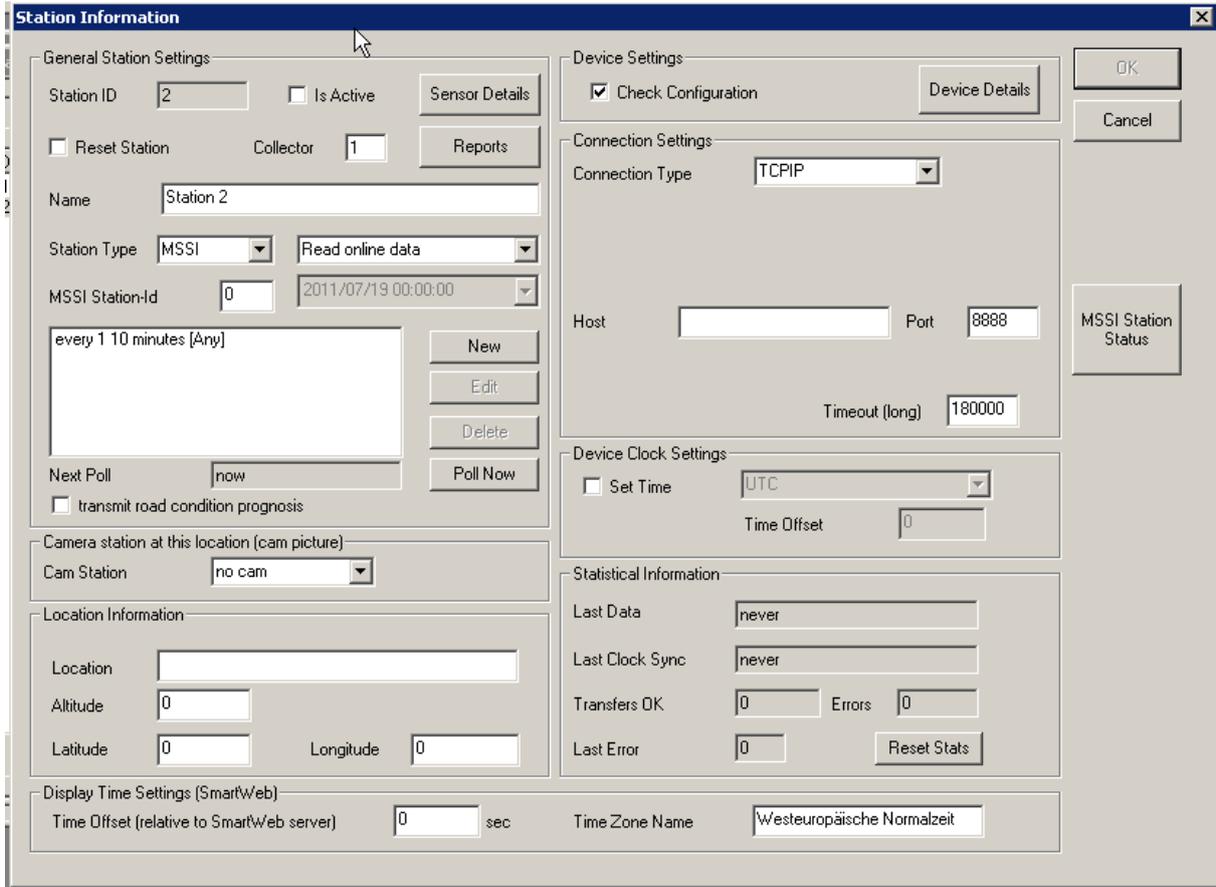
The following MSSI operations are not supported at the moment:

- All configuration changes to MSSI stations like changing the MSSI station id or name, modifying store or measure interval settings, ntp configuration, camera configuration etc.
- Transfer of “signals” (alarm and warning messages)

Mapping of MSSI station status information to sensor-channels

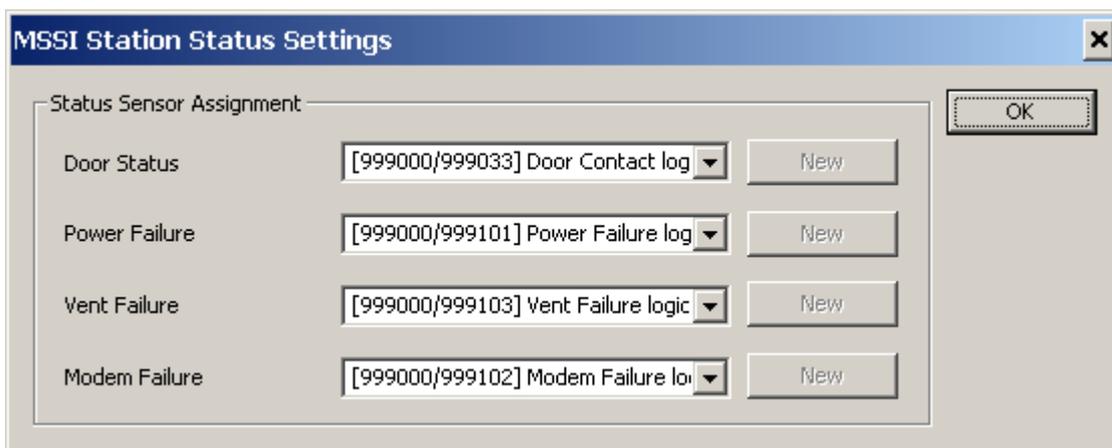
For MSSI Stations, status information like door-contact, power failure, modem failure or vent failure are not transmitted as sensor values, but are part of the configuration/status data for the station.

In order to receive those status “sensor channels”, “Check Configuration” must be active for the station, and the station must supply the appropriate information. For LCom stations, please see the LCom manual on how to configure status reporting.



For MSSSI stations, the additional option “transmit road condition prognosis” is available. Note that this is a non-standard extension to the MSSSI protocol, and might not be supported by the station. Please only activate this option if the station supports the road condition prognosis extension (e.g. Lufft LCom Version 1.7.0 or higher).

The button “MSSI Station Status Settings” opens a dialog to configure the mapping of the status messages to sensor channels:

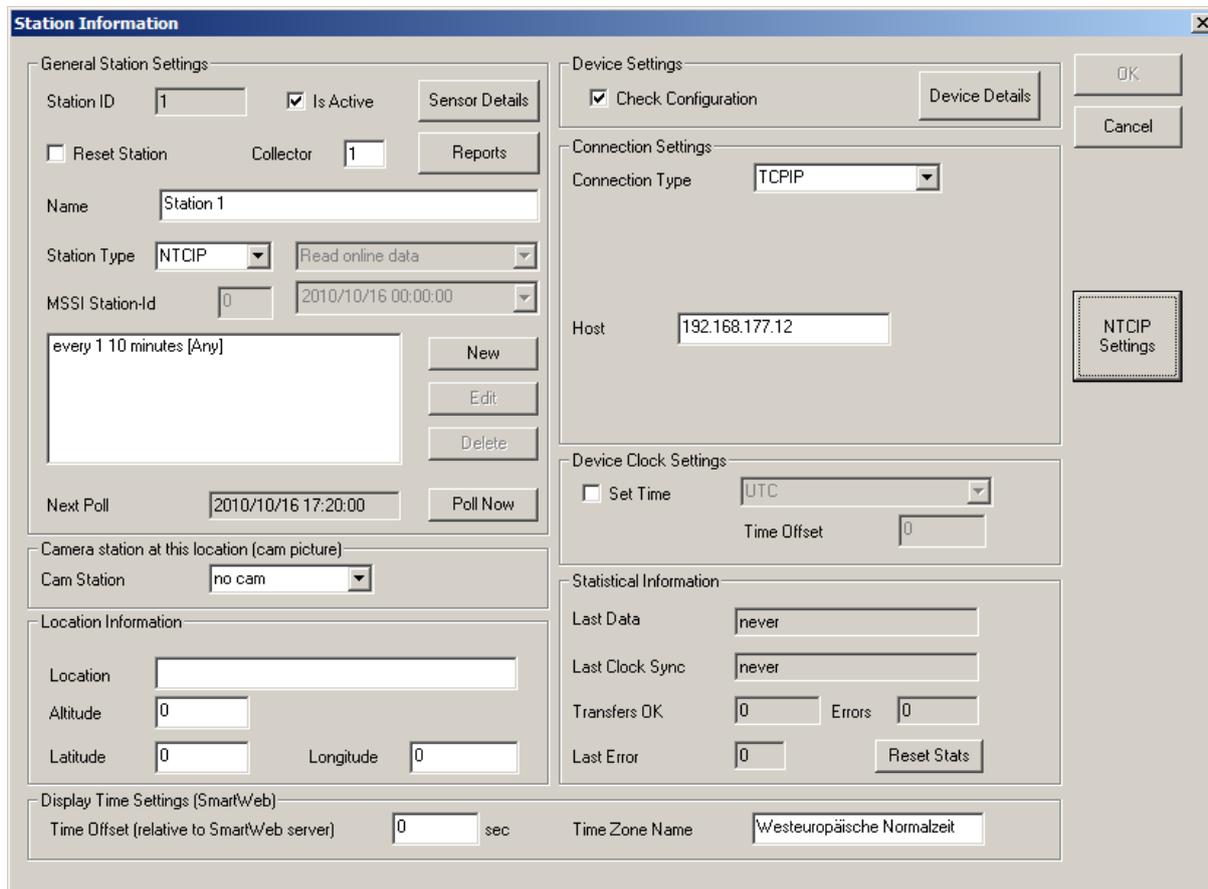


After a sensor channel has been assigned (which creates an appropriate sensor channel for the station), the sensor channel appears in the stations sensor list and can be configured like any other sensor channel of the station.

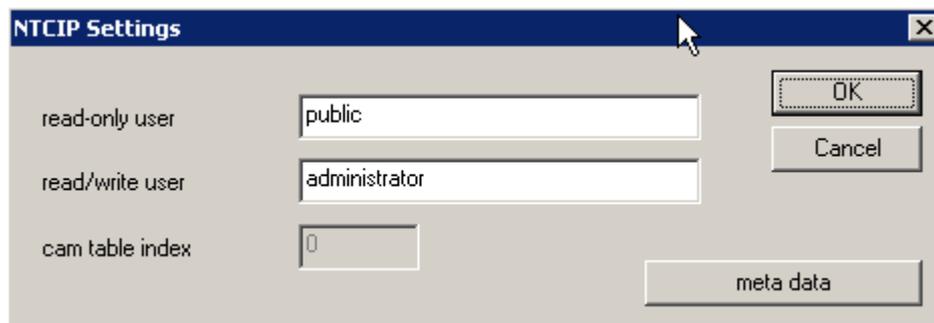
Note that a sensor value for the status information will not be stored for every poll of the station – a value is only stored if there was a “change of status” (e.g. door opened, door closed etc.).

5.2.4 NTCIP Stations

NTCIP stations (or cameras) can be connected via TCP/IP, or via PPP (analog modem dial in) connections.



In “NCTIP Settings” the SNMP community names for “read only” community and “read write” community are configured

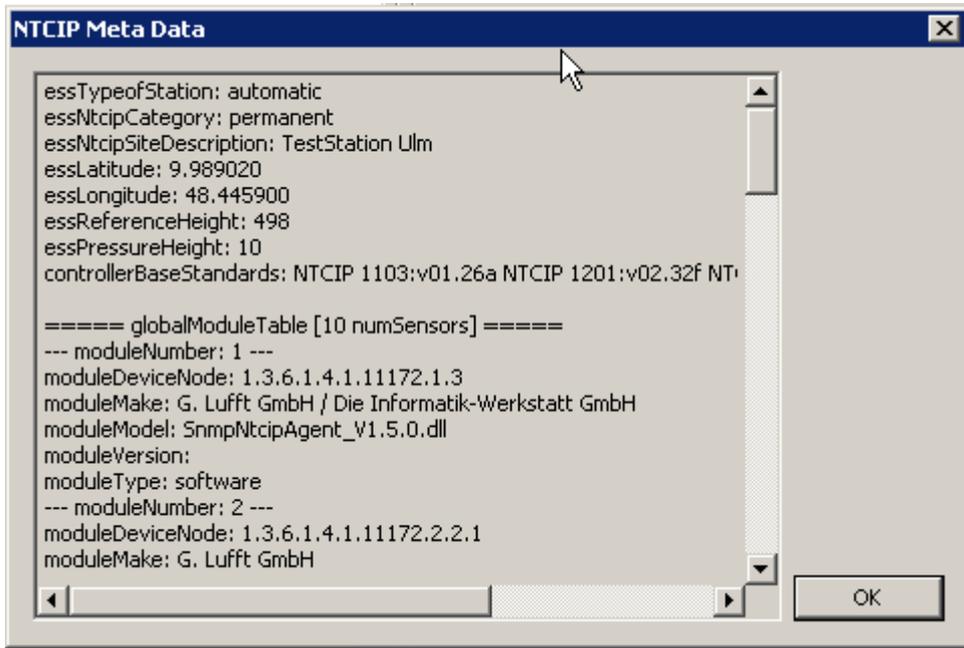


read/write access is only required for synchronizing the clocks, and for transferring camera pictures from a NTCIP station with cameras.

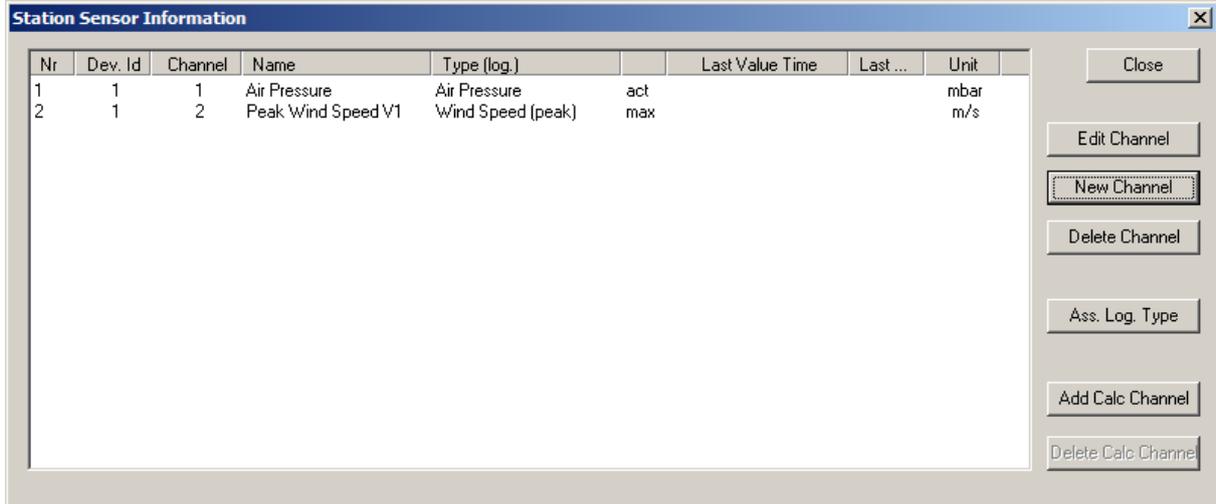
For NTCIP cam stations the index of the camera in the camera table is configured here as well.

The actual sensor channel assignment for NTCIP stations cannot be read from the station – so the sensor channels have to be configured manually. When “Check Configuration” is active for the station, the NTCIP “meta data” is read from the station – including the number of entries in the respective sensor tables, which may simplify the sensor configuration.

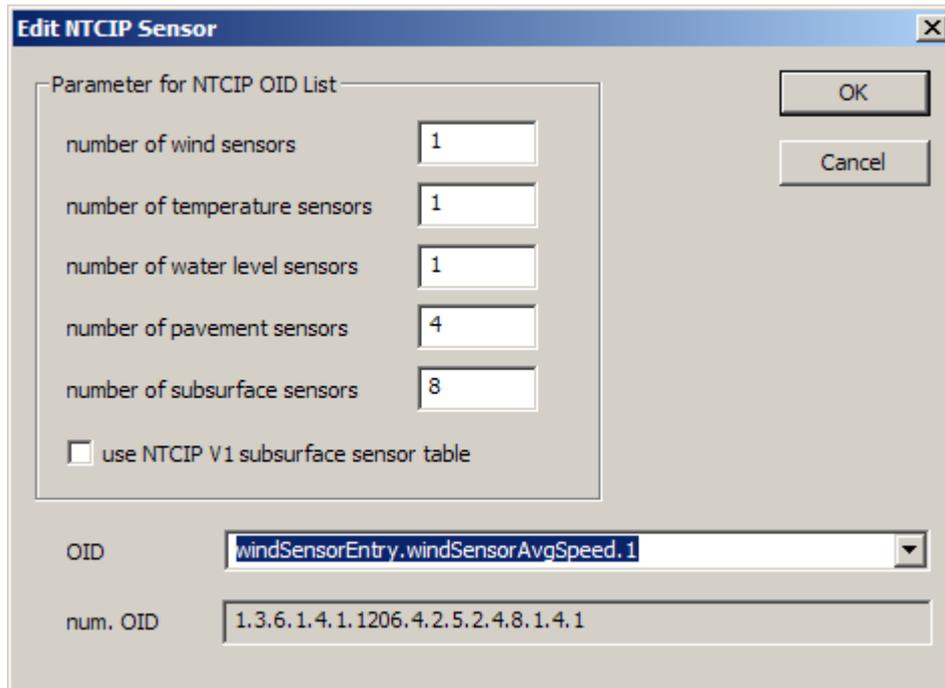
The complete meta data for the station can be viewed by clicking on the “meta data” button. This information can also be shown on the station information page in SmartWeb.



Sensor channels can be added, edited or removed using the appropriate buttons in the stations sensor information dialog:



An NTCIP sensor channel is specified through its SNMP OID, which can be selected from the OID list in the combo box:



Parameter	Value
number of wind sensors	1
number of temperature sensors	1
number of water level sensors	1
number of pavement sensors	4
number of subsurface sensors	8

use NTCIP V1 subsurface sensor table

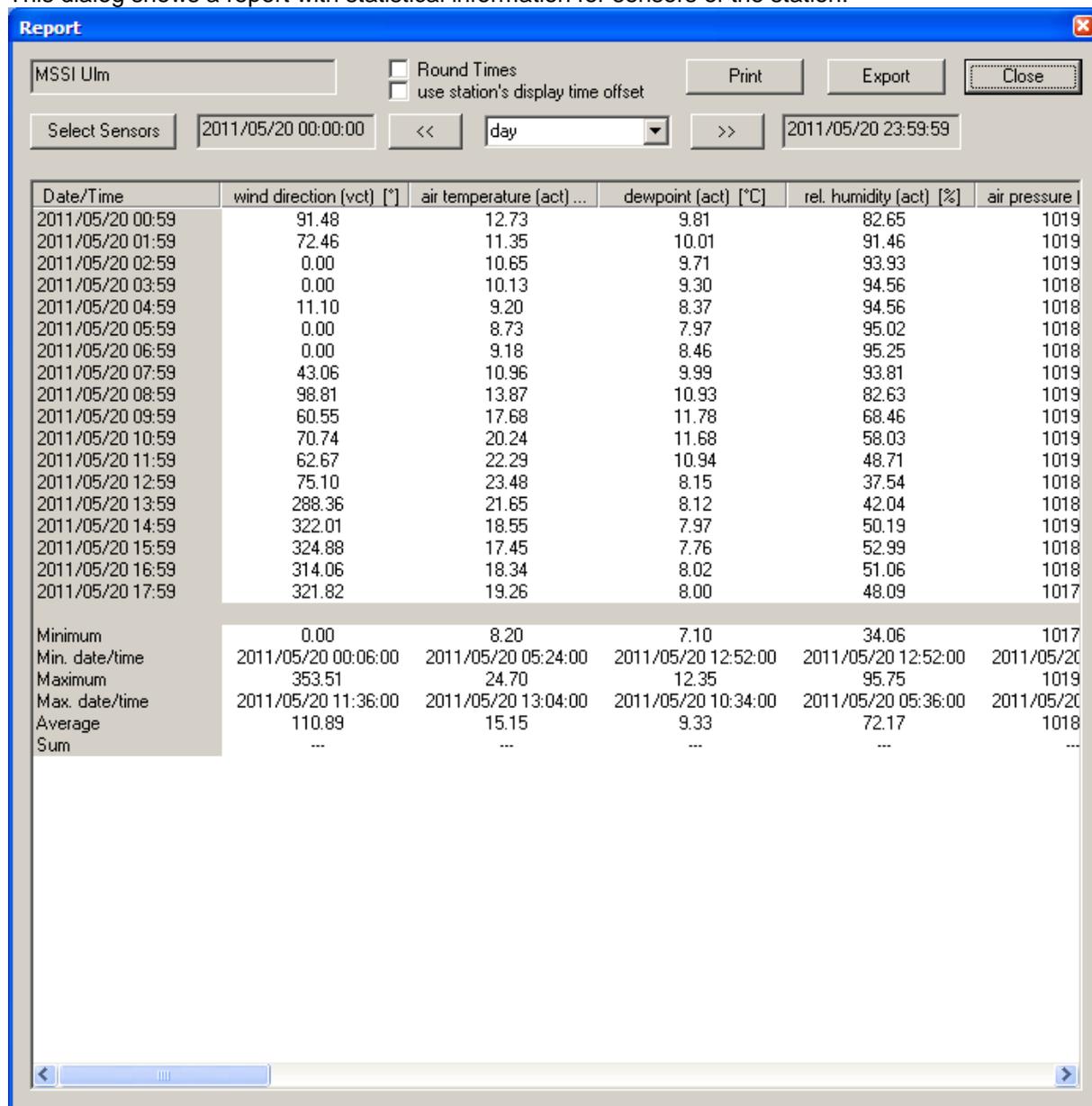
OID: windSensorEntry.windSensorAvgSpeed.1

num. OID: 1.3.6.1.4.1.1206.4.2.5.2.4.8.1.4.1

The parameters determine which entries are available in the OID combo box. If the station Meta data has been read from the station, the number of sensor entries for each table is set by the stations actual configuration.

5.2.5 Reports

This dialog shows a report with statistical information for sensors of the station:



Date/Time	wind direction (vct) [°]	air temperature (act) ...	dewpoint (act) [°C]	rel. humidity (act) [%]	air pressure [hPa]
2011/05/20 00:59	91.48	12.73	9.81	82.65	1019
2011/05/20 01:59	72.46	11.35	10.01	91.46	1019
2011/05/20 02:59	0.00	10.65	9.71	93.93	1019
2011/05/20 03:59	0.00	10.13	9.30	94.56	1018
2011/05/20 04:59	11.10	9.20	8.37	94.56	1018
2011/05/20 05:59	0.00	8.73	7.97	95.02	1018
2011/05/20 06:59	0.00	9.18	8.46	95.25	1018
2011/05/20 07:59	43.06	10.96	9.99	93.81	1019
2011/05/20 08:59	98.81	13.87	10.93	82.63	1019
2011/05/20 09:59	60.55	17.68	11.78	68.46	1019
2011/05/20 10:59	70.74	20.24	11.68	58.03	1019
2011/05/20 11:59	62.67	22.29	10.94	48.71	1019
2011/05/20 12:59	75.10	23.48	8.15	37.54	1018
2011/05/20 13:59	288.36	21.65	8.12	42.04	1018
2011/05/20 14:59	322.01	18.55	7.97	50.19	1019
2011/05/20 15:59	324.88	17.45	7.76	52.99	1018
2011/05/20 16:59	314.06	18.34	8.02	51.06	1018
2011/05/20 17:59	321.82	19.26	8.00	48.09	1017
Minimum	0.00	8.20	7.10	34.06	1017
Min. date/time	2011/05/20 00:06:00	2011/05/20 05:24:00	2011/05/20 12:52:00	2011/05/20 12:52:00	2011/05/20 12:52:00
Maximum	353.51	24.70	12.35	95.75	1019
Max. date/time	2011/05/20 11:36:00	2011/05/20 13:04:00	2011/05/20 10:34:00	2011/05/20 05:36:00	2011/05/20 12:52:00
Average	110.89	15.15	9.33	72.17	1018
Sum	---	---	---	---	---

Depending on the selected time interval (can be day, 10 days, month, or year) the appropriate values are shown in a table.

If **“day”** is selected, average (or sum) values for every hour of the day are shown, and the minimum, maximum, average or sum values for the day are displayed.

If **“10 days”** or **“month”** is selected, average (or sum) values for every day are shown, and the minimum, maximum, average or sum values for the month are displayed.

If **“year”** is selected, average (or sum) values for every month of the year are shown, and the minimum, maximum, average or sum values for the year are displayed.

The **“<<”** and **“>>”** buttons can be used to display the previous/next time interval.

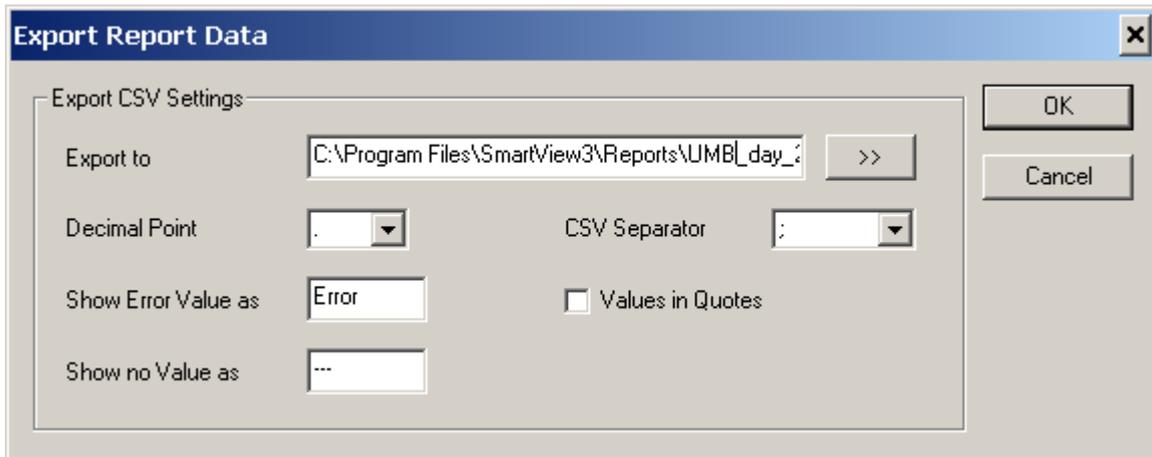
Per default, all (active) sensors of a station are displayed. Using the **“Select Sensors”** button, sensors can be selected, and the sequence of the sensors can be altered.

If “**round times**” is active, the calculated timestamps shown in the report are rounded to the full minute.

If “**use station’s display time offset**” is active, the display time offset configured for the station is used when the report values are calculated

“**Print**” will print the displayed report data.

“**Export**” will export the displayed report data to a .csv (text) file – e.g. for import and processing in Microsoft Excel etc. Some parameters can be set to specify the export format:

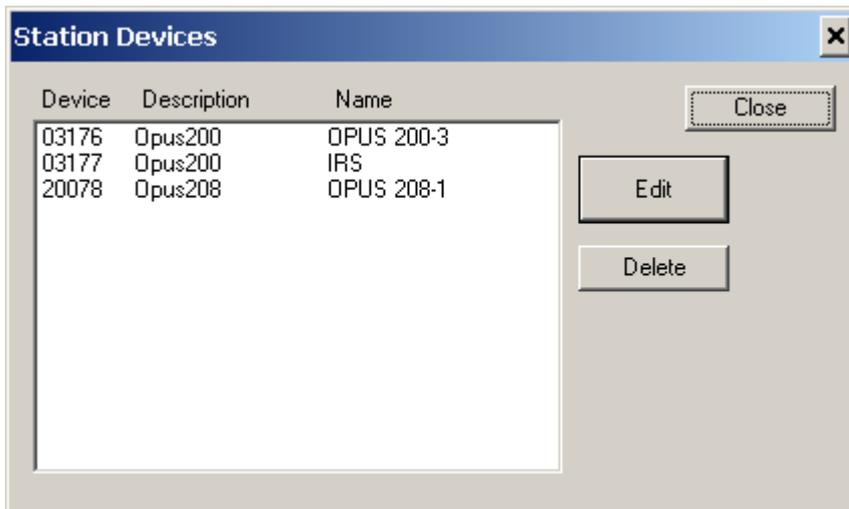


5.2.6 Station Device Details

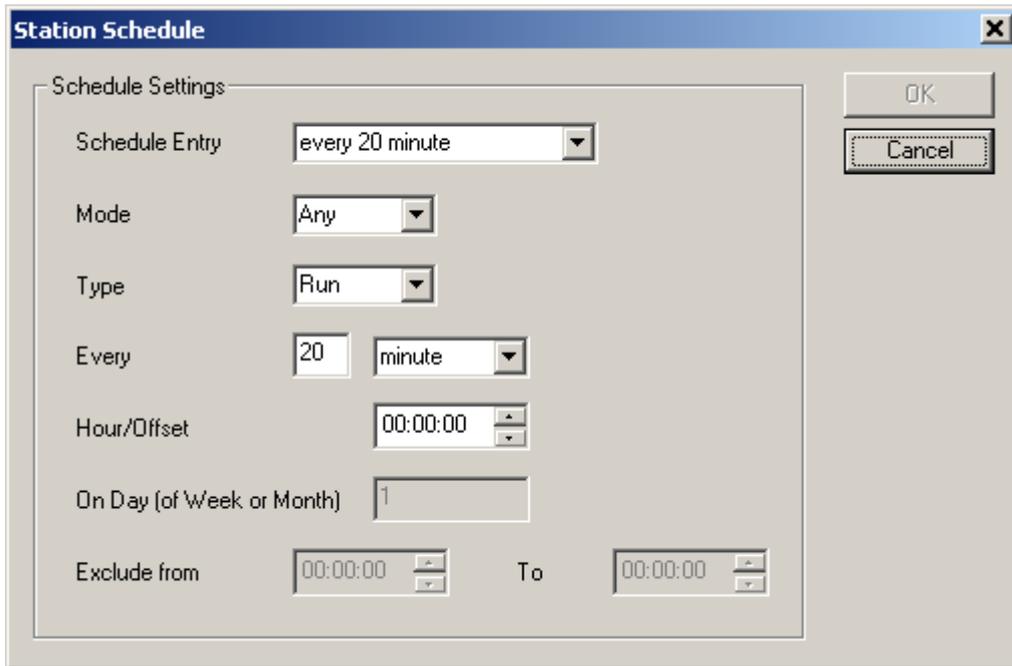
Clicking on the “Device Details” button opens a window that displays all devices for a station.

Note: device information is only available if the station has been polled successfully at least once.

For TLS/IP stations, no “Device Details” are available.



5.2.7 Station Schedule



You may configure multiple schedule entries for a station.

- Mode: operations mode for schedule entry (Any, Summer or Winter)
- Type: type of entry (Run or Exclude)
- Every xx interval: run every xx interval, e.g. every 20 minutes, or every 1 day...
- Hour/Offset: hours/min/seconds to be added to begin of interval, i.e. the time of day for interval "day, week, or month"
- On Day(of week or month) – if the interval type is week or month, you can set the day of week or month the station should be polled
- Exclude from/to: for schedule entries of type exclude, this specifies the time (of day) the station will not be polled

Possible time intervals are:

- every xx minute
- every xx 5 minutes (to the full hour, i.e. 00:00, 00:05, 00:10 etc)
- every xx 10 minutes (to the full hour, i.e. 00:00, 00:10, 00:20 etc) [same as every 2 5 minutes..]
- every xx 12 minutes (to the full hour, i.e. 00:00, 00:06, 00:12, 00:18...)
- every xx 20 minutes (to the full hour, i.e. 00:00, 00:20, 00:40...)
- every xx 30 minutes (to the full hour, i.e. 00:00, 00:30,...)
- every xx hour
- every xx day
- every xx week

6 Configure SmartWeb pages

6.1 Overview

The SmartWeb configuration consists of the following objects:

6.1.1 Site

A site refers to a “web site”, which may contain data from multiple stations. A “Site” consists of “Pages” of different types (see below).

The pages that are generated by SmartWeb for a site are always stored on the PC where SmartWeb runs (in the directory indicated by the “local path” field of the Site configuration), and can be viewed using a web browser (i.e. Internet Explorer, Mozilla Firefox, or Opera...).

The “start” page of a site is the file “index.html” in the “local path” directory – open that file in your browser to view the data.

The pages of a “site” can of course also be accessed via a web server. You could either install a web server (like Apache) on the same PC where you are running SmartWeb, and configure the web server to use the “local path” of the site as “document root”, or configure SmartWeb to use the “document root” (or a directory below that) as local path. Or you can configure SmartWeb to transfer all files to an external web server.

Note:

The generated website contains active elements and Javascript code used for navigation and popup texts. Make sure your web browser is set up properly to allow the use of active elements.

When viewing the generated web site from the local disc with Microsoft Internet Explorer, Internet Explorer always pops up a warning about “active elements”, and blocks these elements.



SmartView3
Version 1.9.0

6.1.2 SmartWeb Pages

SmartWeb will generate following types of pages:

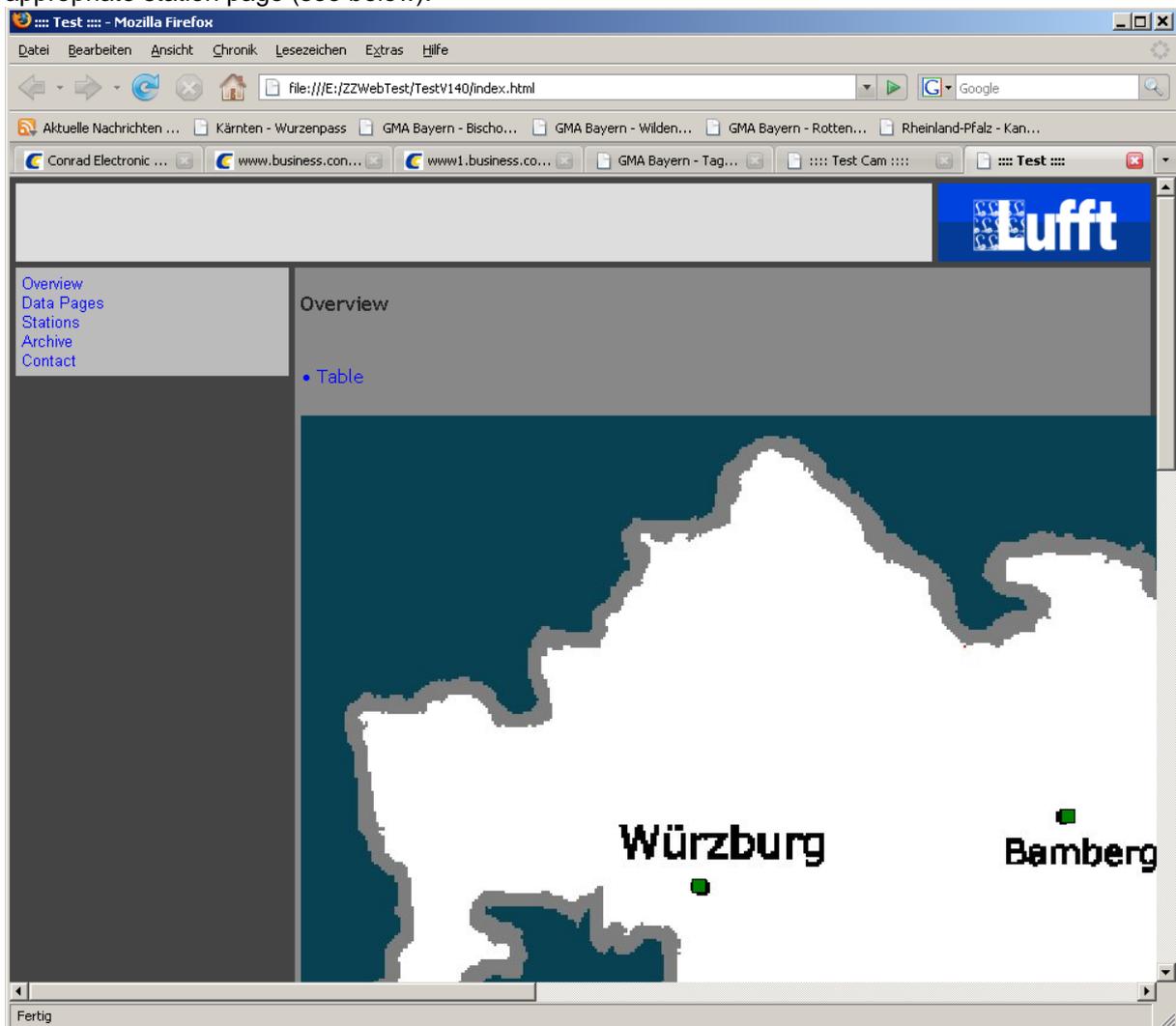
6.1.2.1 Map page- "Overview"

This is the "start" or "home" page of the site. It shows the status of all stations configured for this site either in a table (with a link to the "station page" for this station), or (graphically) on a map.

The map page is the first menu item on the menu generated by SmartWeb on the left side of each page.

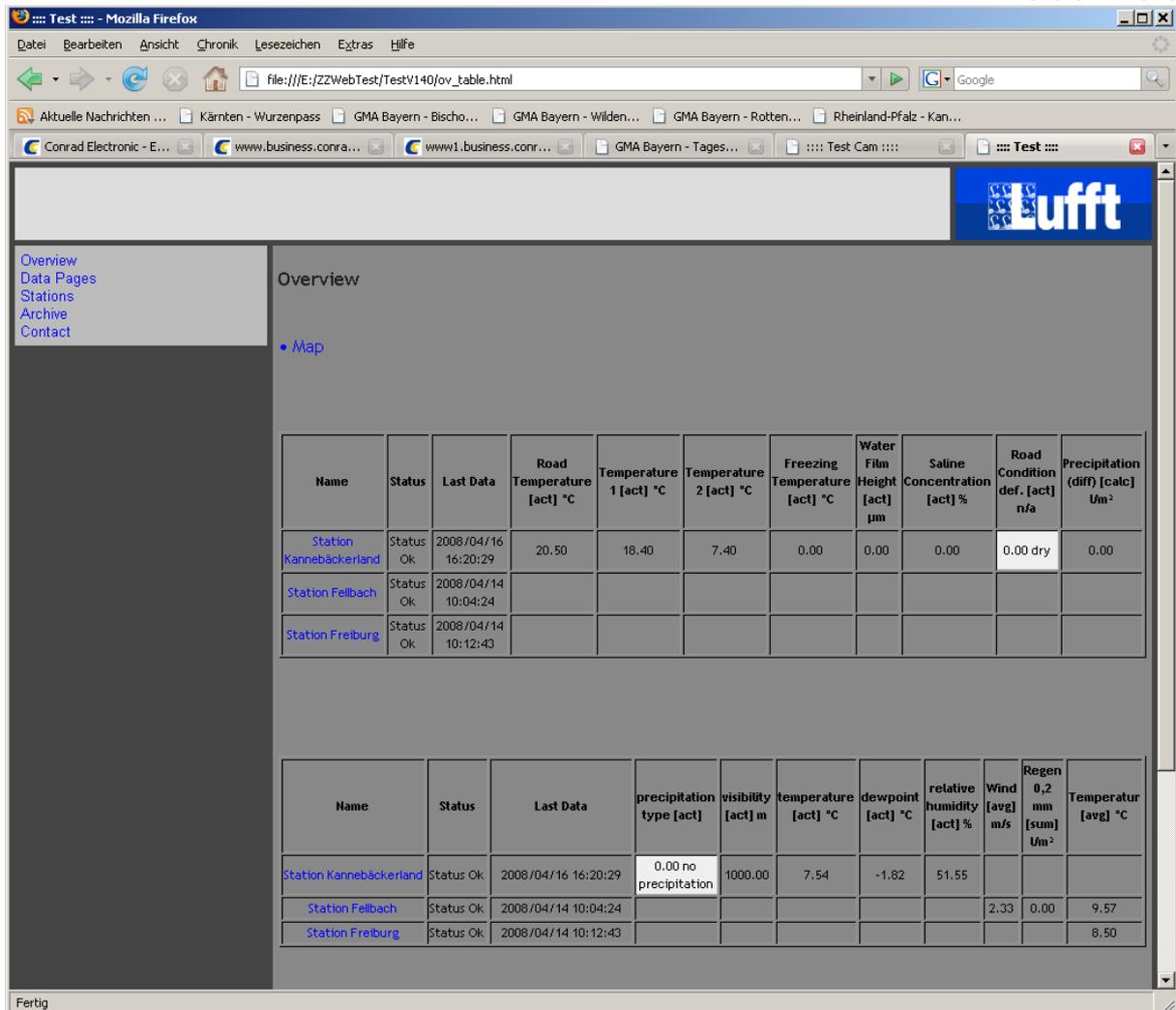
The "title" of this page is used in the menu, and can be customized in the "edit page" dialog for this page.

If you loaded a map for this page, and placed your stations on the map using the appropriate dialog (see below), the stations will be displayed on a map as colored squares, with the color indicating the status of the station, i.e. green when there was no error, or white/black blinking if station could not be polled, red/black blinking if there were alarm values for sensor values or magenta/black blinking if there a special error code was detected (see chapter Error Mapping). If you scroll over a station icon on the map, the station name and status is displayed, as well as the last sensor values (if you configured sensors to be shown on the "station icons"). Clicking on the station icon will take you to the appropriate station page (see below).



On the "map page", a link to the "Table" overview is provided.

If no map is configured, only the "Table" overview is created.



Overview

- Map

Name	Status	Last Data	Road Temperature [act] °C	Temperature 1 [act] °C	Temperature 2 [act] °C	Freezing Temperature [act] °C	Water Film Height [act] µm	Saline Concentration [act] %	Road Condition def. [act] n/a	Precipitation (diff) [calc] l/m²
Station Kannebacherland	Status Ok	2008/04/16 16:20:29	20.50	18.40	7.40	0.00	0.00	0.00	0.00 dry	0.00
Station Fellbach	Status Ok	2008/04/14 10:04:24								
Station Freiburg	Status Ok	2008/04/14 10:12:43								

Name	Status	Last Data	precipitation type [act]	visibility [act] m	temperature [act] °C	dewpoint [act] °C	relative humidity [act] %	Wind [avg] m/s	Regen 0,2 mm [sum] l/m²	Temperatur [avg] °C
Station Kannebacherland	Status Ok	2008/04/16 16:20:29	0.00 no precipitation	1000.00	7.54	-1.82	51.55			
Station Fellbach	Status Ok	2008/04/14 10:04:24						2.33	0.00	9.57
Station Freiburg	Status Ok	2008/04/14 10:12:43								8.50

Fertig

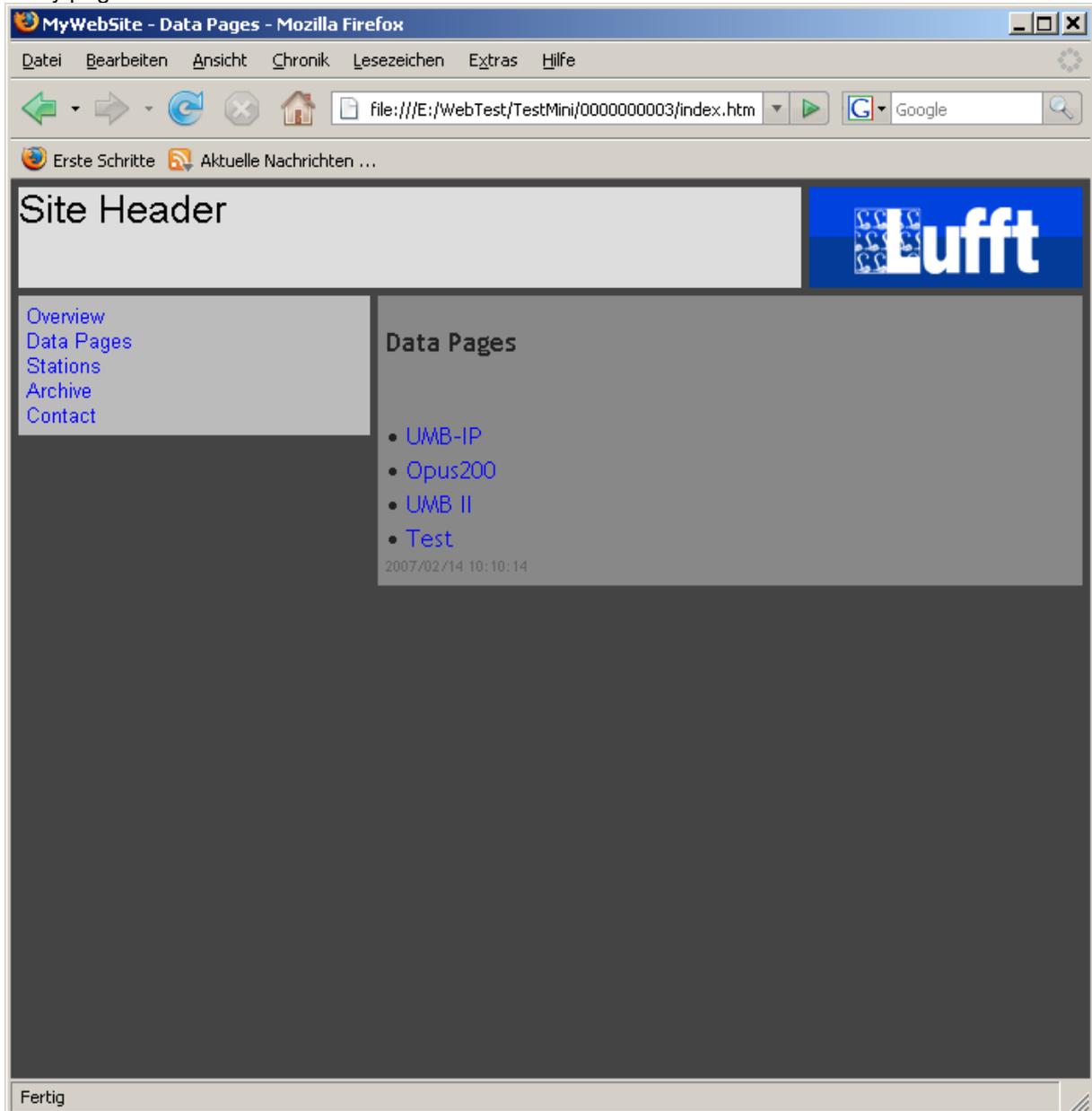
The “table overview” shows status of all stations, and the sensors configured for each station in a table. Sensors with identical logical sensor type, value type and unit are shown in the same column. There is a parameter for the “Overview page” (see below) to configure the maximum number of sensors displayed in one table.

If there is a map configured for the Overview page, a link back to the map page is available on top of the table overview page.

6.1.2.2 data list page

This page contains a list (with links) to all data pages generated by SmartWeb. A “data page” is a page showing sensor values in diagrams and tables.

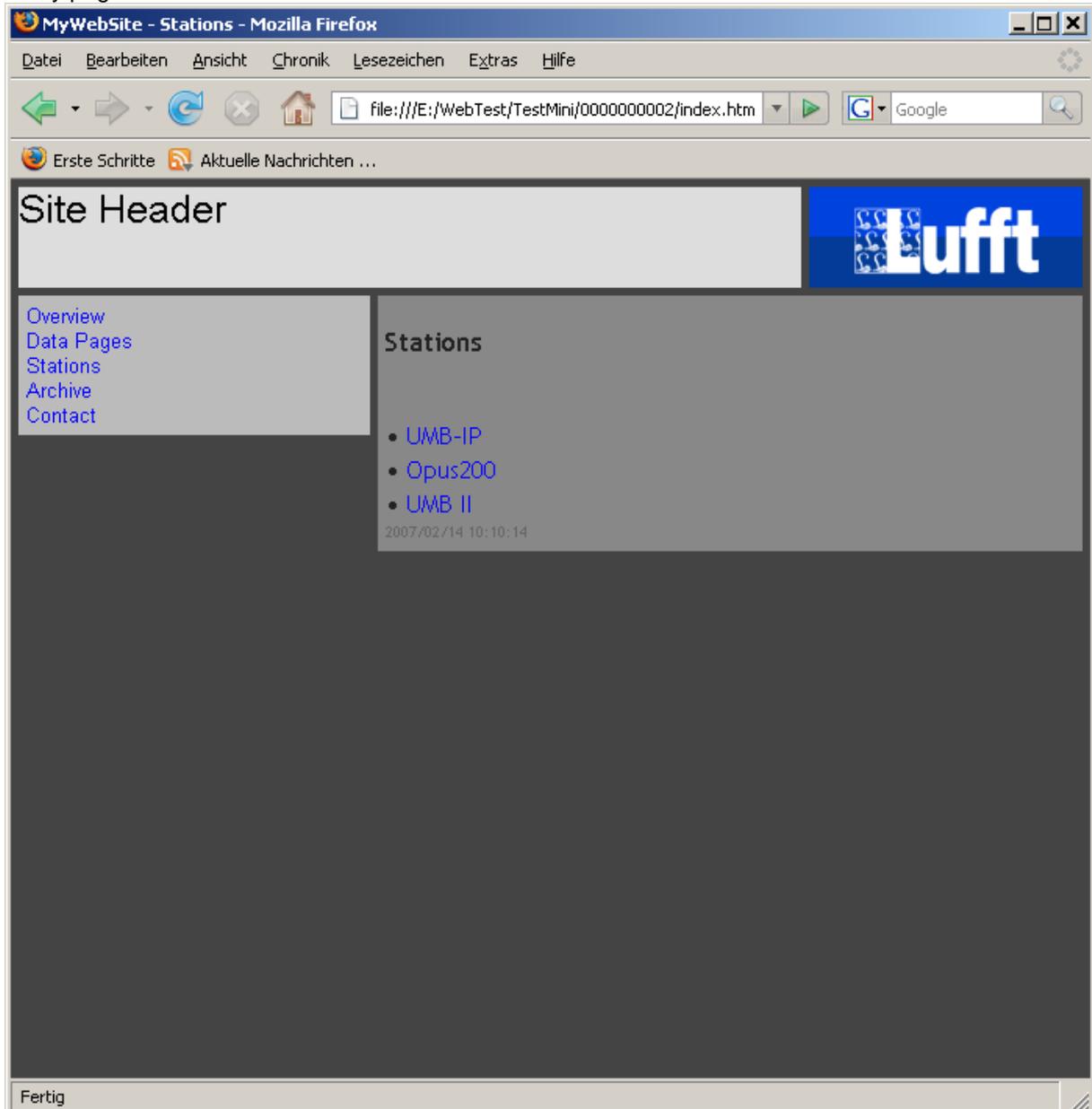
The “data list page” is the second menu item on the menu created by SmartWeb on the left side of every page.



6.1.2.3 station list page

The “station list” page lists all “station pages” with a link to the appropriate station page – similar to the “map page” if the map page is not configured to show the stations on a map. The station list page does not show status information for a page.

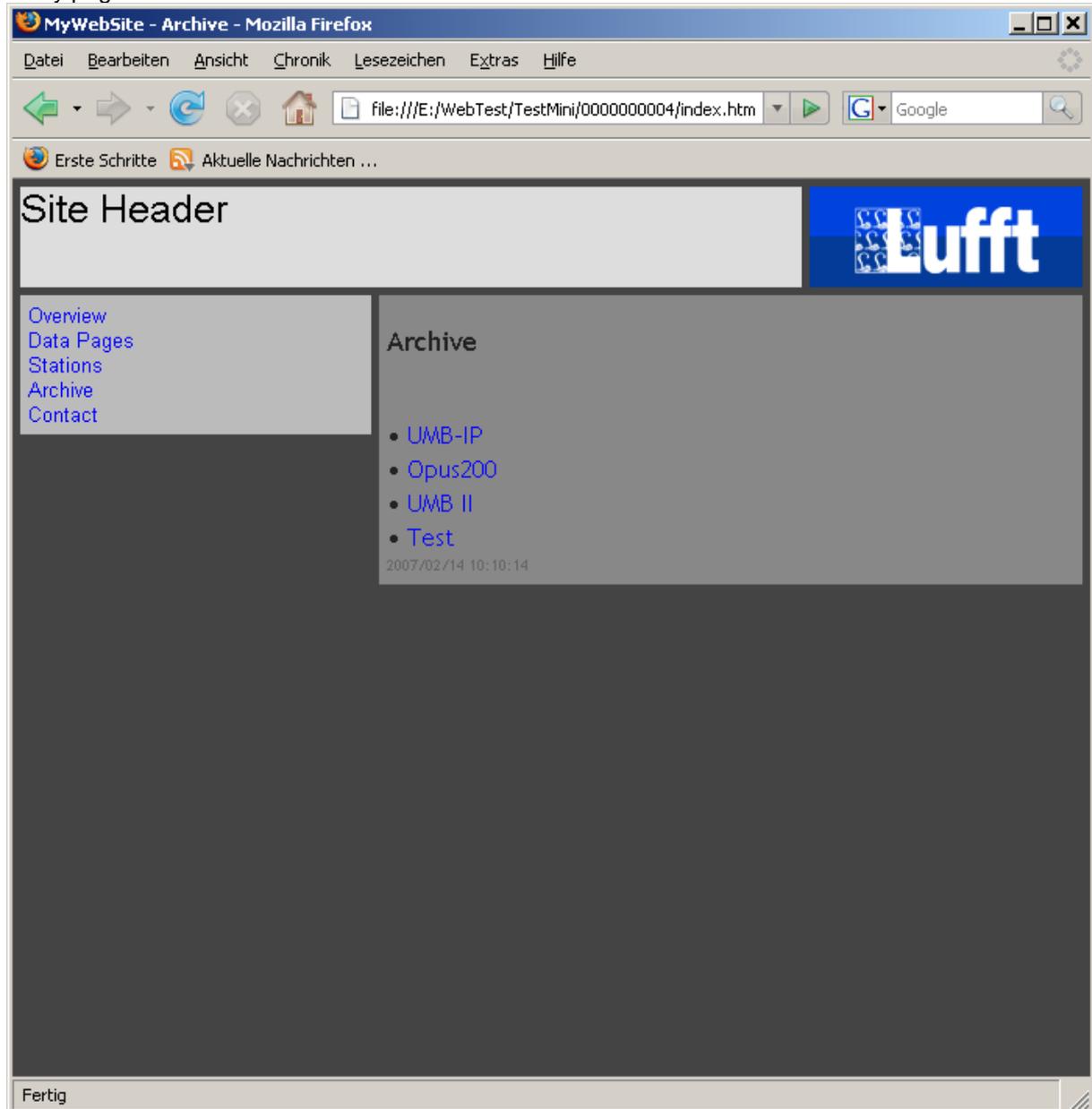
The “station list” page is the third menu item on the menu created by SmartWeb on the left side of every page.



6.1.2.4 archive menu page

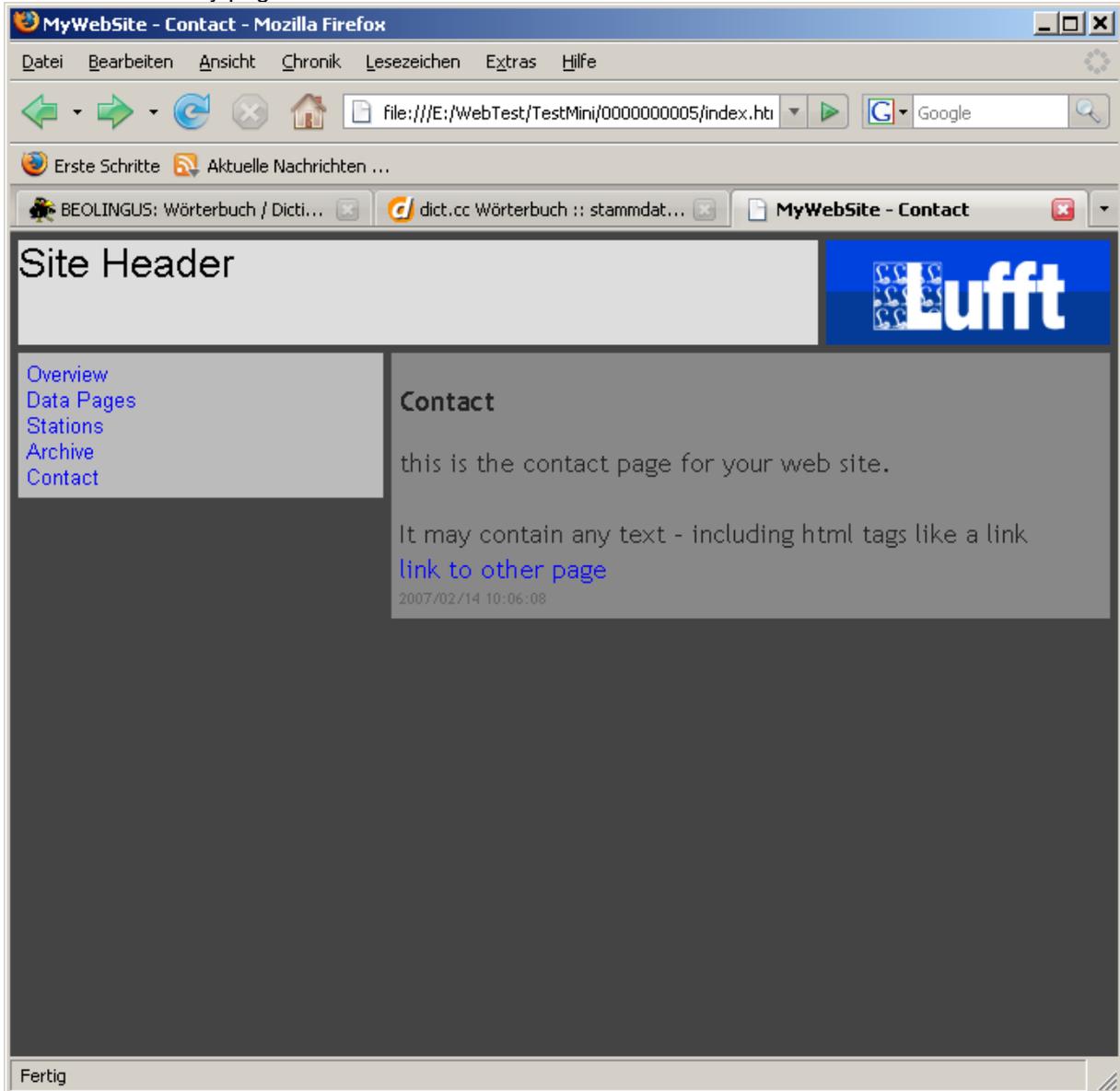
The “archive menu” page contains a list with all “archive list” pages. There is an “archive list” page for every data page configured.

The “archive menu page” is the fourth menu item on the menu created by SmartWeb on the left side of every page.



6.1.2.5 other page / Contact

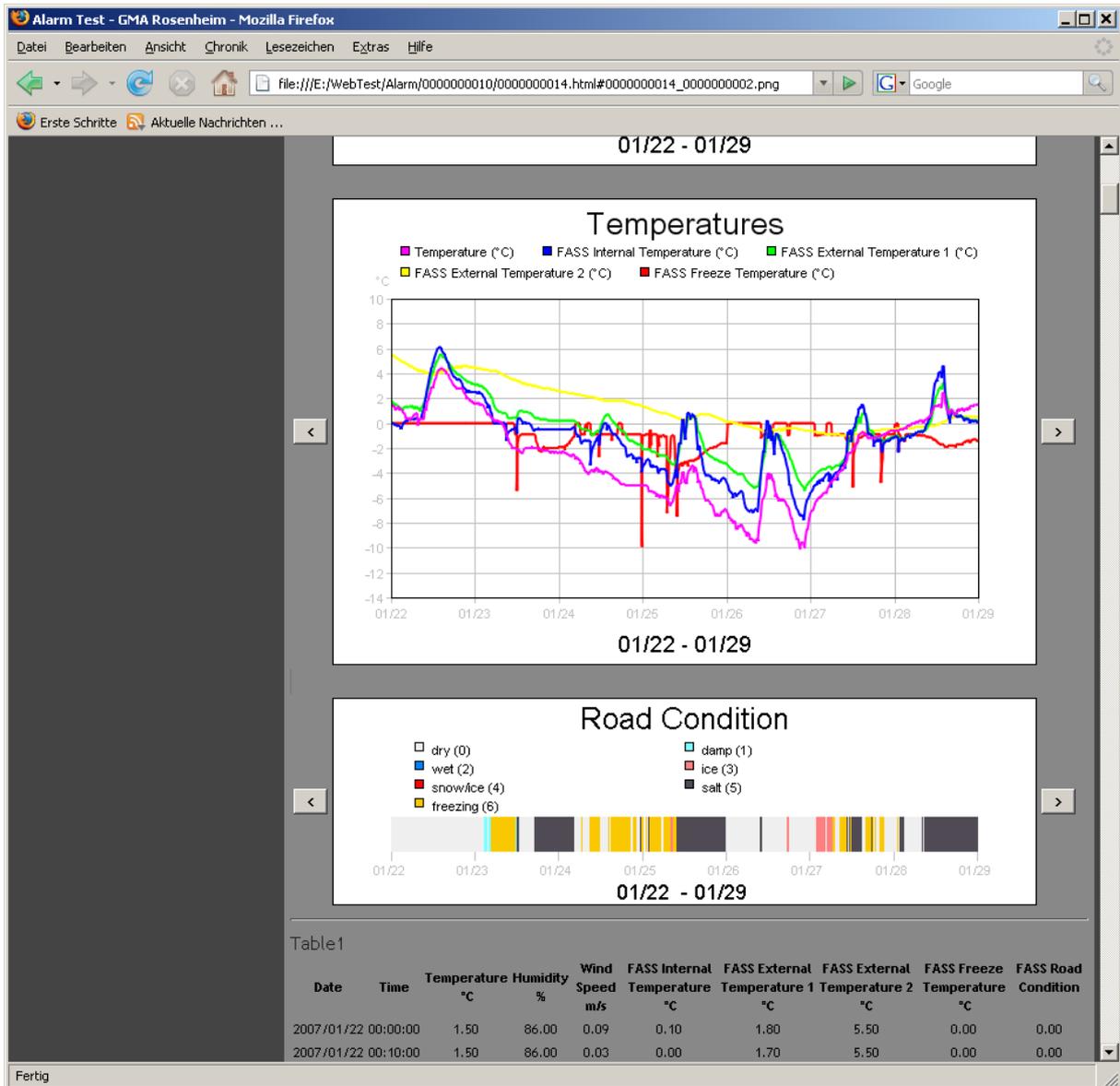
This is the “contact” page (a page of type “other page”). It is the fifth item on the menu created by SmartWeb on every page



6.1.2.6 data page

Data pages are used to display data in diagrams, tables and reports. The sensors that are displayed on a data page can be selected from all stations that are configured for a site.

A Data page always displays data for a specified (fixed) time interval. If this time interval is in the past, the page is referred to as “archive page” (and is no longer updated by SmartWeb).



6.1.2.7 station page

There is one “station page” for every station configured to a web site.

On the station page, the last sensor values for selected sensors of a station are displayed. If there is a cam station associated with the station, the cam picture is shown on the station page as well.

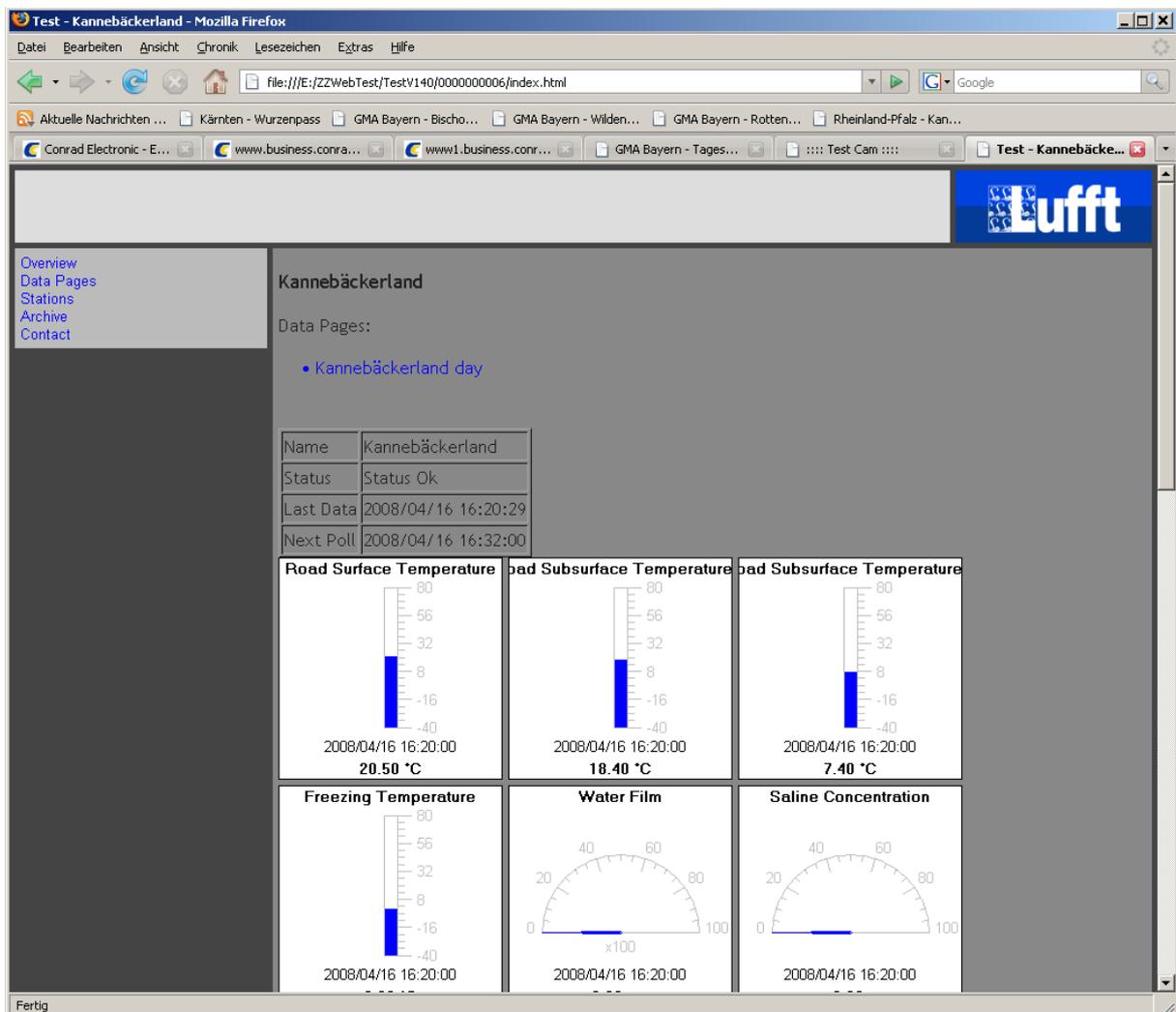
In addition, some statistical information about the station is displayed.

Last sensor values can be displayed in tables and/or as “analog gauge” displays for every sensor.

“Reports” that show min/max/average/sum values for selected sensors for specific time intervals can be added to the station page.

Links to “data pages” for the station are provided on top of the page

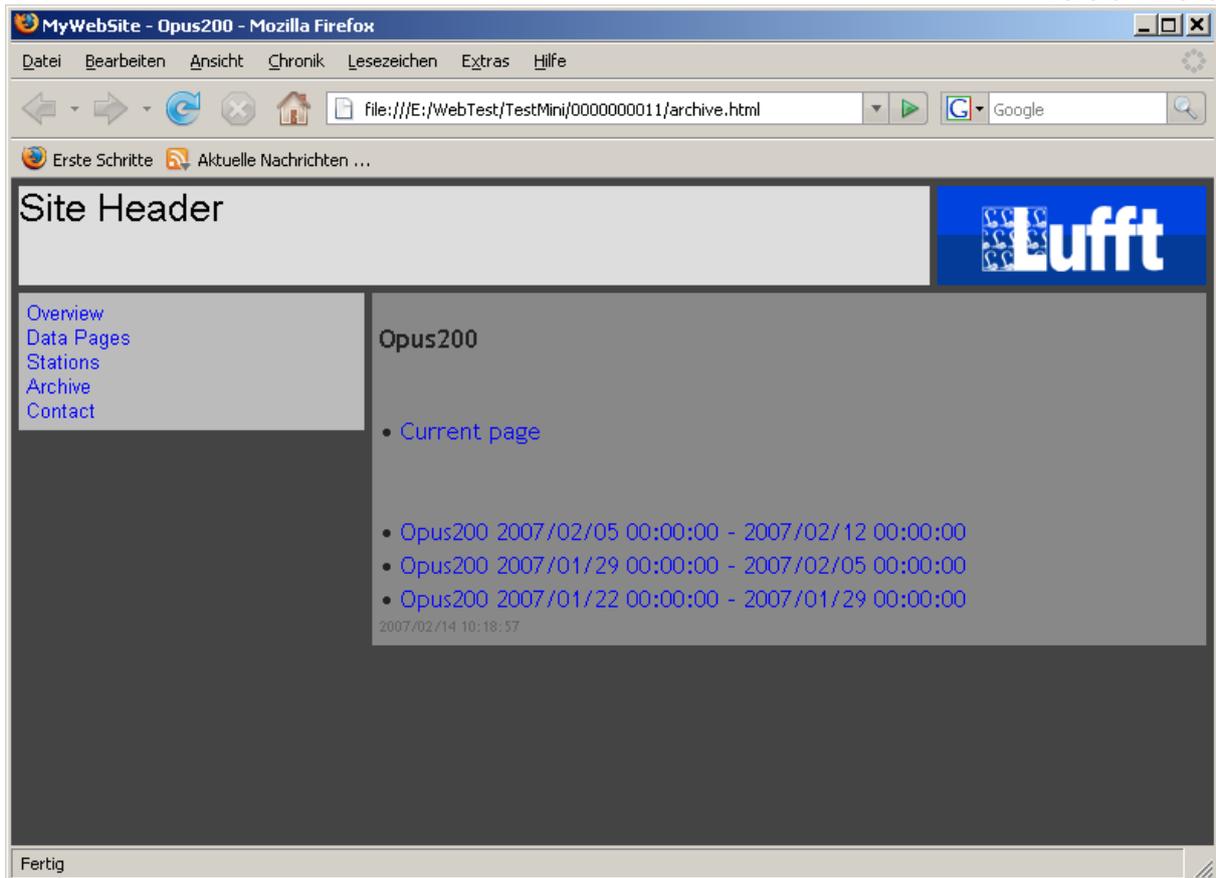
Line-or Bar Diagrams showing the values for the last 6, 12 or 24 hours can be shown.



6.1.2.8 archive list page

For every data page there is one “archive list” page.

An “archive list” page lists all “archive” pages for a data page. As mentioned above, an “archive” page is a data page that is no longer updated, i.e. contains data from the “past”.



6.1.2.9 *archive page*

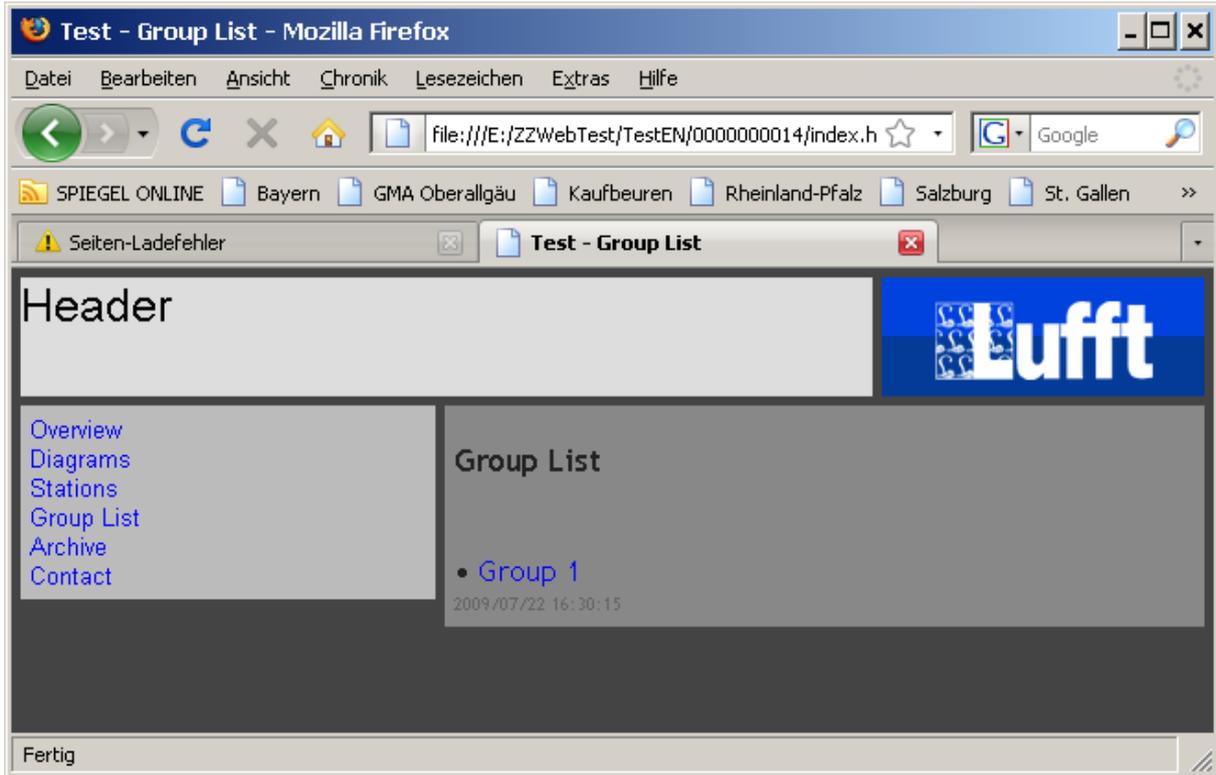
An archive page is an “old” data page, i.e. a data page that is not updated anymore, because its time range is “in the past” (e.g. last week, if the data interval for the data page is “one week”).

Archive pages can be accessed either via the “Archive Menu” / “Archive List” page, or by clicking the appropriate navigation button on the “data page” (which is the “current page” on the archive list page).

6.1.2.10 *group list page*

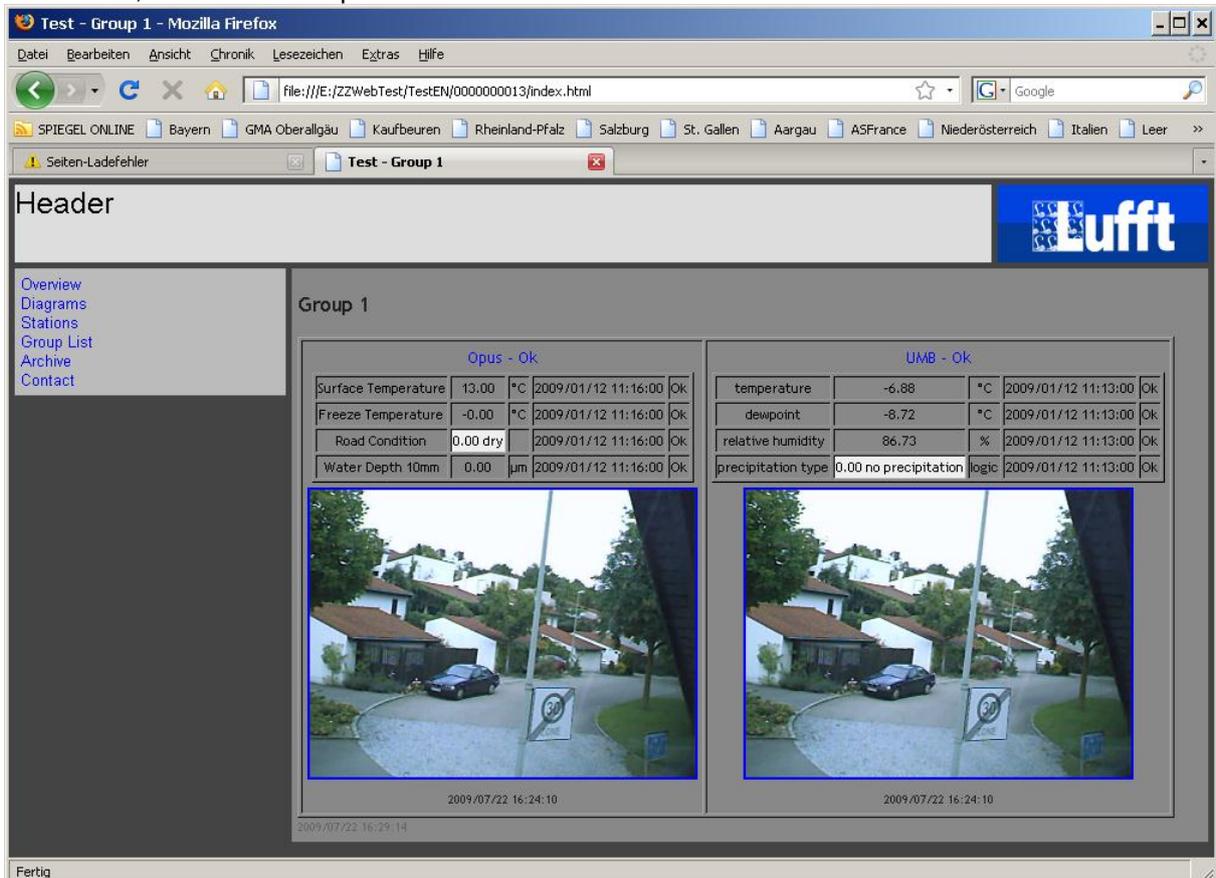
The “group list” page lists all “group pages” with a link to the appropriate group page.

The “group list” page is only generated/shown if there are group status pages configured for the web site.



6.1.2.11 group status page

A group status page shows the last sensor values for multiple stations. If there is a camera assigned to a station, the last camera picture is shown as well.



6.2 Getting Started

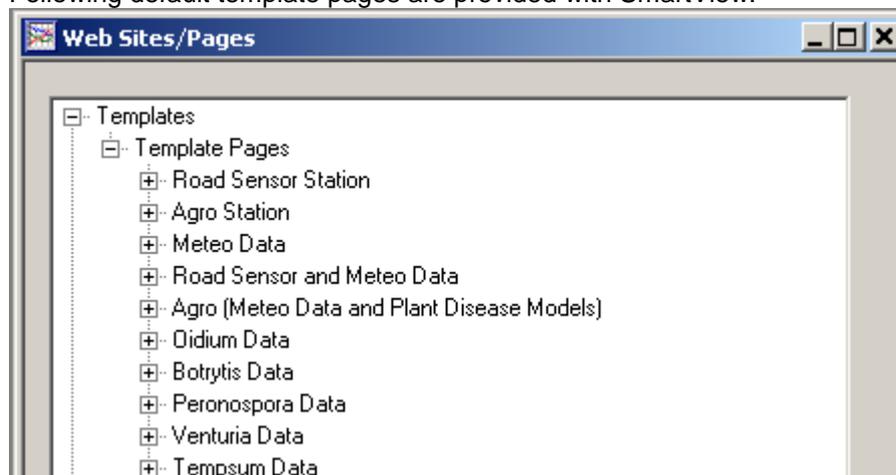
To create a SmartWeb site, select menu item “Sites” from “Settings”. This will open a window titled “Web Sites/Pages”.

If no web-sites are configured, only the “Templates” are displayed,

Template pages are used to provide an easy way to create identical station and data pages for multiple stations.

In Template pages, logical Sensor Types are used instead of “real” sensors. When a template is used to create a station or data page, the “real” station sensors are mapped to the logical sensors used in the template (the same applies to template export/import jobs, see below).

Following default template pages are provided with SmartView:



- **Road Sensor Station:** a “station” page with analog gauges etc. for a typical road sensor station with one road sensor
- **Agro Station:** a “station” page with analog gauges etc for a typical meteo/agro station
- **Meteo Data:** a “data” page with diagrams and tables for a typical “Meteo” data station (air temperature, rel. humidity, dewpoint, air pressure, precipitation amount and type, wind speed and direction, solar radiation, leaf wetness)
- **Road Sensor and Meteo Data:** a “data” page with diagrams and tables for “Meteo” data and data for one road sensor
- **Agro (Meteo Data and Plant Disease Models):** a “data” page with diagrams and tables for “Meteo” data and data for all 5 plant disease models (Oidium, Botrytis, Peronospora, Venturia and TempSum) available from Lufft.
- **Oidium/Botrytis/Peronospora/Venturia/Tempsum:** “data” pages with diagrams for the respective plant disease models available from Lufft.

You can alter the existing templates, or create new templates, to your needs.

Note: if you have multiple sensors of the same type (e.g. air temperature, visibility, or road sensors) at your stations, you need to set up own logical sensor types (e.g. “air temperature 2”, “visibility 2”, “road condition 2” etc) for the multiple sensors, and use those new logical sensor types in the template diagrams (and assign them to the appropriate sensors in the station configuration) in order for SmartView to pre-select the appropriate sensors when assigning station sensors to templates (see below). If you don’t create new logical sensor types, SmartView cannot pre-select the proper station sensors, and you will have to manually select the sensors when assigning the page template.

To create a **new web site**, you can either select the option “New” from the “Web-Site” menu in the menu bar, or from the pop-up menu that appears when you right-click at the empty window. This opens the “Site Edit Dialog” (see [Edit Site Dialog](#)).

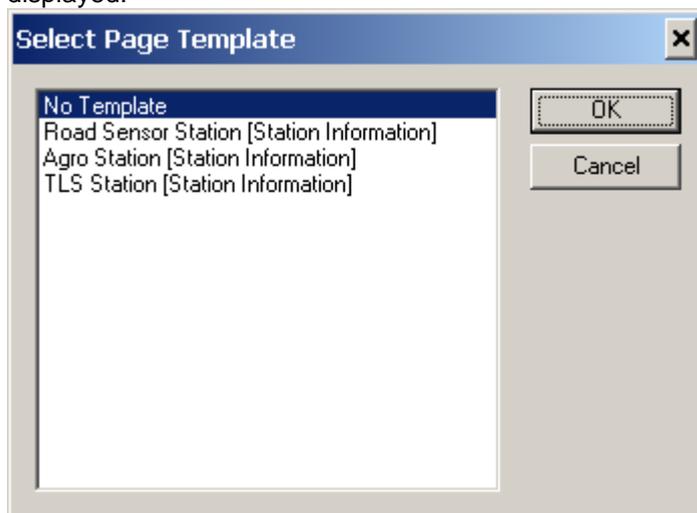
Note: Before you add a station to the web-site, you need to poll the station at least once to read the station's sensor configuration. For stations of type UMB, you also need to activate the specific channels (sensors) you would like to use before you add the station to the web site.

If you plan to use plant disease model calculations for your (agro) station, it is recommended to configure the Export/Import jobs for the plant disease models first (see below), so that the "import" sensors for the plant disease models are available when setting up the station for the web site

Select the stations to be used in this site by clicking the "Edit Stations" button (see [Select Site Stations](#)).

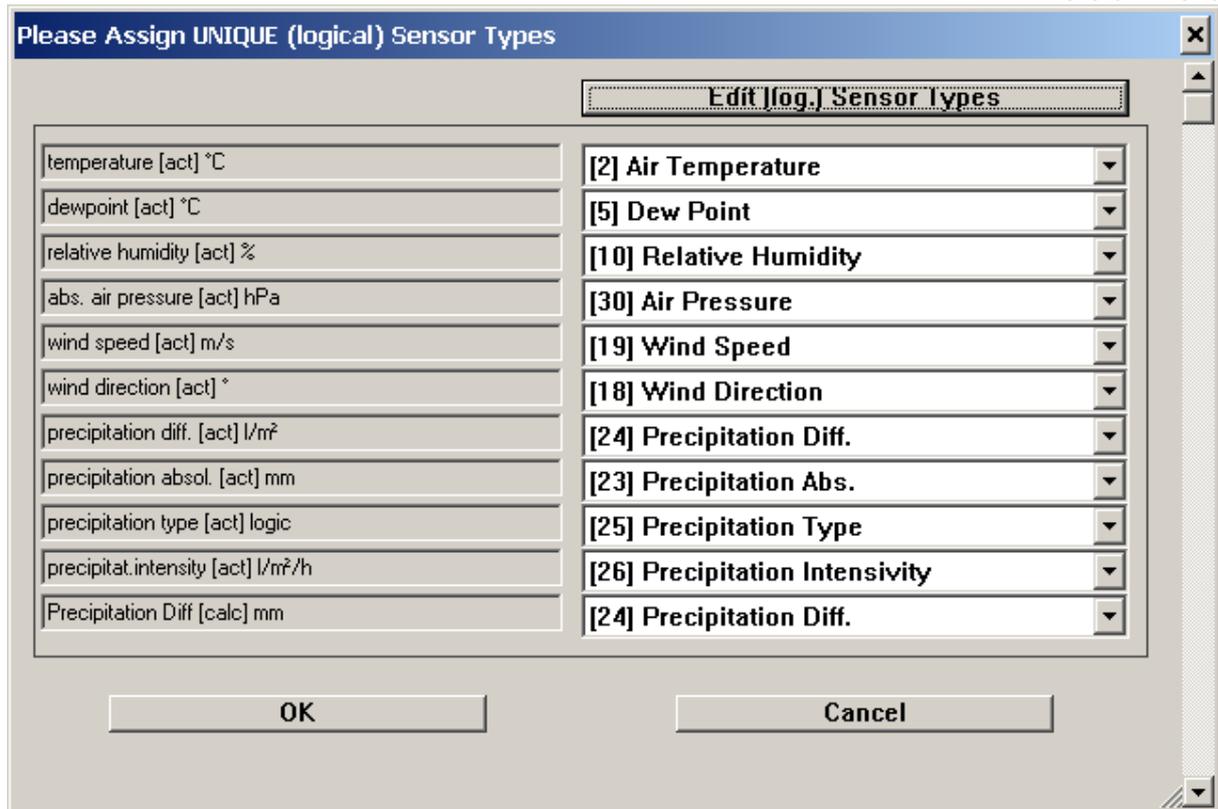
Click OK to save the new site.

For each station you add to the web site, a dialog to select a (station) template page for the station is displayed:



You can set up a station without using a template page.

If you selected a template, SmartView checks if there is a logical sensor type assigned to every (active) sensor of the station. If not, a dialog is displayed to assign the logical sensor types



You can select a logical sensor type from the drop down box. If there is no pre-defined sensor type that fits your sensor, you can create a new sensor type using the button "Edit (log.) Sensor Types".

A Dialog to assign the station sensors to the page template (i.e. to all the page elements of the template page) is displayed next:

Assign Station Sensors to Template [X]

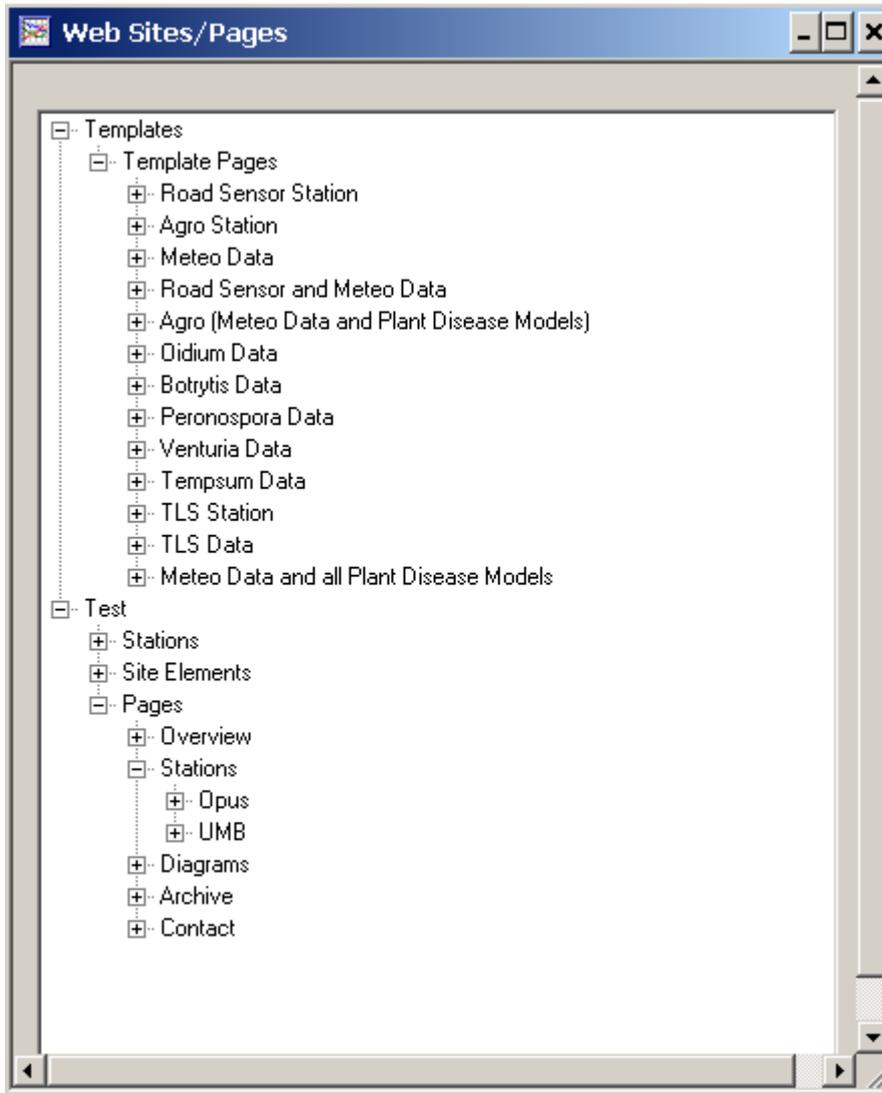
[OK] [Cancel]

vert. Bar Graph Air Temperature	Air Temperature Sensor Nr: 424 temperature °C act
vert. Bar Graph Dew Point	Dew Point Sensor Nr: 432 dewpoint °C act
Round Gauge Relative Humidity	Relative Humidity Sensor Nr: 440 relative humidity % act
Round Gauge Air Pressure	Air Pressure Sensor Nr: 452 abs. air pressure hPa act
Round Gauge Precipitation Diff.	Precipitation Diff. Sensor Nr: 479 precipitation diff. l/m ² act
Color Code Precipitation Type	Precipitation Type Sensor Nr: 483 precipitation type logic ac
Round Gauge Solar Radiation	Solar Radiation No Sensor Assigned
Round Gauge Wind Speed	Wind Speed Sensor Nr: 460 wind speed m/s act
Wind Rose Wind Direction	Wind Direction Sensor Nr: 472 wind direction ° act
Color Code Leaf Wetness	Leaf Wetness No Sensor Assigned
vert. Bar Graph Ground Temperature 1	Ground Temperature 1 No Sensor Assigned

The page elements that don't have a sensor assigned will not be added to the resulting page.
For station pages, a table containing all active sensors of the station is created automatically.

Click "OK" to add the station (and station page) to the web site.

The pages for the new site will be created, and displayed in the Web Site/Pages window.



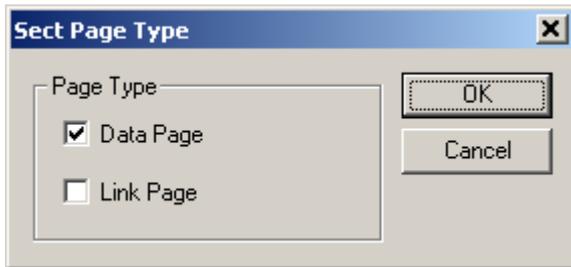
The window displays all elements a SmartWeb web site consists of. See [Web-Site Elements](#) below.

You can expand the display to show subordinate elements by clicking on the "+" signs.

Now you can add "data" pages to display data in diagrams and tables (the station page only shows the last sensor values).

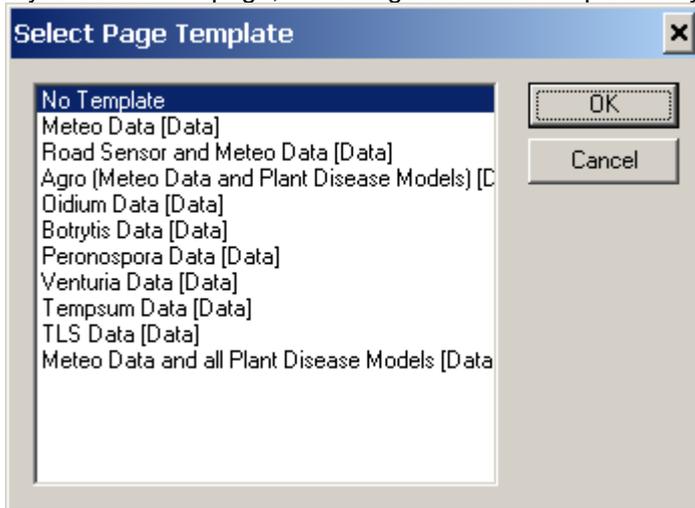
You can either double click on "Pages" (which opens a dialog showing all pages of the site, that has buttons to add and delete pages), or you can select "Pages" or an entry below "Pages" with the left mouse button, and then open the context menu with the right mouse button and select "new".

This opens a dialog to select the page type you would like to add

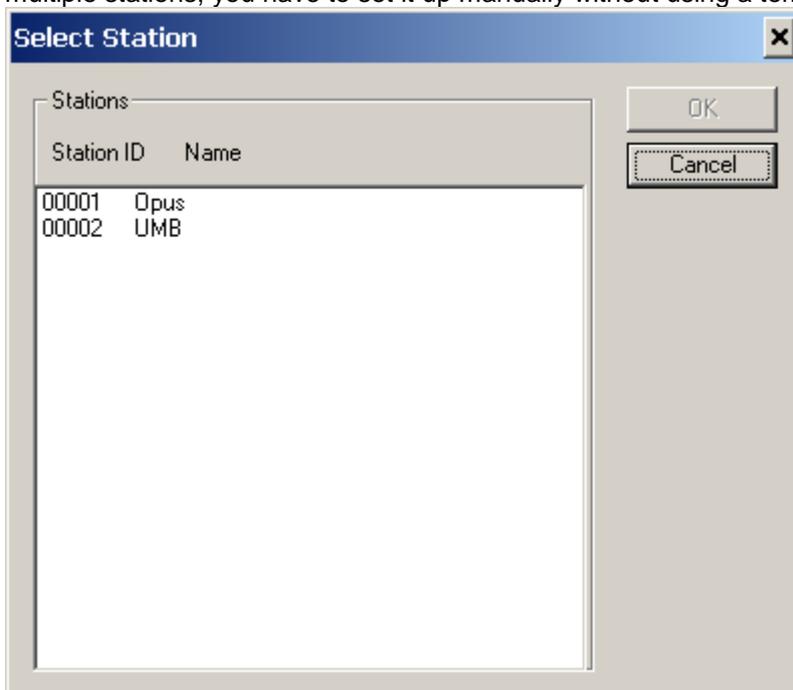


You can either add a data page, or a “link page” (see below).

If you add a data page, the dialog to select a template for your data page is displayed :



If you selected a template page, a dialog to select the station is displayed. Template pages can only be used to show data from a specific station. If you like to add a data page that contains data from multiple stations, you have to set it up manually without using a template.



Select the station you want to use for the data page.

SmartView checks if there is a logical sensor type assigned to every (active) sensor of the station. If not, a dialog is displayed to assign the logical sensor types.

Please Assign UNIQUE (logical) Sensor Types

Edit (log.) Sensor Types

temperature [act] °C	[2] Air Temperature
dewpoint [act] °C	[5] Dew Point
relative humidity [act] %	[10] Relative Humidity
abs. air pressure [act] hPa	[30] Air Pressure
wind speed [act] m/s	[19] Wind Speed
wind direction [act] °	[18] Wind Direction
precipitation diff. [act] l/m ²	[24] Precipitation Diff.
precipitation absol. [act] mm	[23] Precipitation Abs.
precipitation type [act] logic	[25] Precipitation Type
precipitat.intensity [act] l/m ² /h	[26] Precipitation Intensity
Precipitation Diff [calc] mm	[24] Precipitation Diff.

OK Cancel

Next, the dialog to assign the station sensors to the page elements (diagrams, tables etc), is displayed. If there are many page elements on the page, you may have to scroll down to see all assignments.

Assign Station Sensors to Template

Line Diagram	Meteo Data
Air Temperature	Sensor Nr: 424 temperature °C act
Relative Humidity	Sensor Nr: 440 relative humidity % act
Dew Point	Sensor Nr: 432 dewpoint °C act
Air Pressure	Sensor Nr: 452 abs. air pressure hPa act

Line Diagram	Precipitation
Precipitation Diff.	Sensor Nr: 479 precipitation diff. l/m ² act

Horiz. Bar Diagram	Precipitation Type
Precipitation Type	Sensor Nr: 483 precipitation type logic ac

Line Diagram	Wind Speed/Direction
Wind Speed	Sensor Nr: 460 wind speed m/s act
Wind Direction	Sensor Nr: 472 wind direction ° act

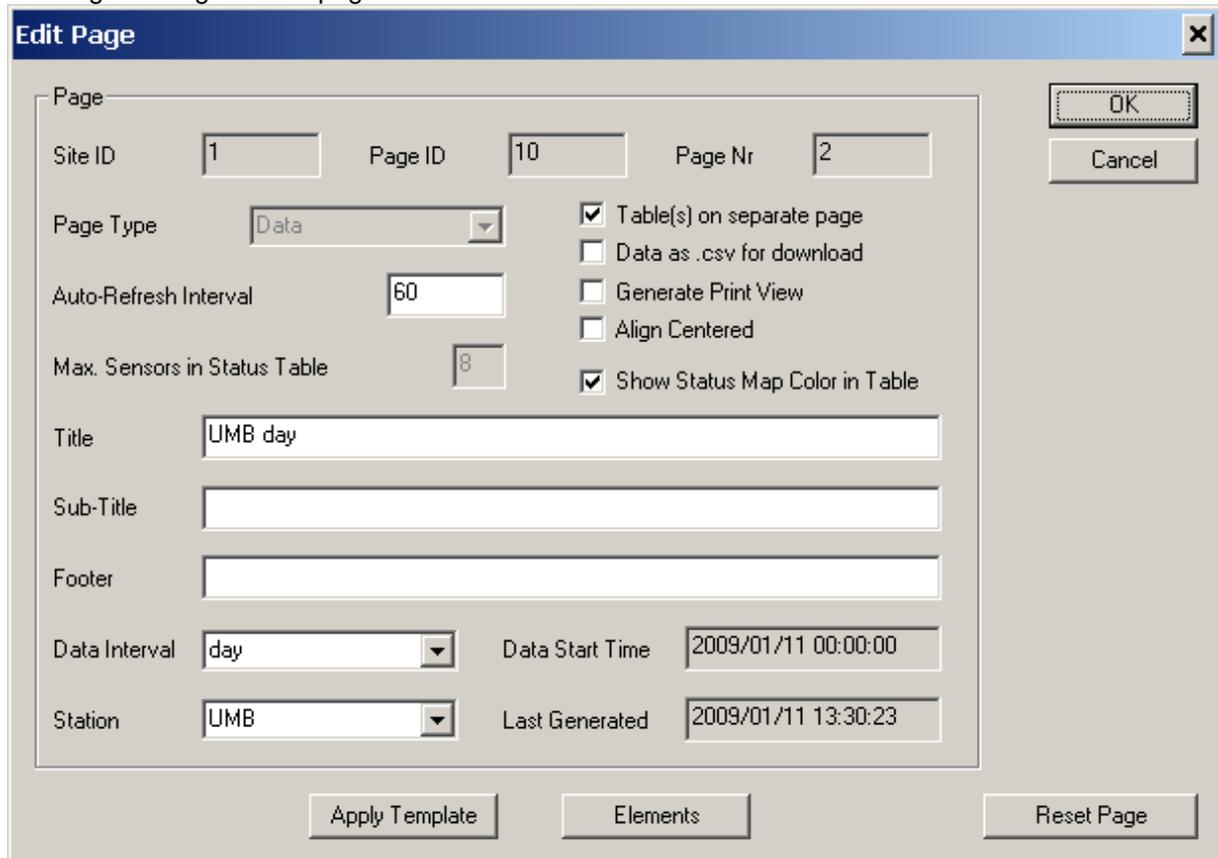
Line Diagram	Solar Radiation
Solar Radiation	No Sensor Assigned

Horiz. Bar Diagram	Leaf Wetness
Leaf Wetness	No Sensor Assigned

Table	Table Meteo Data
Air Temperature	Sensor Nr: 424 temperature °C act
Relative Humidity	Sensor Nr: 440 relative humidity % act
Dew Point	Sensor Nr: 432 dewpoint °C act
Air Pressure	Sensor Nr: 452 abs. air pressure hPa act
Precipitation Diff.	Sensor Nr: 479 precipitation diff. l/m ² act
Precipitation Type	Sensor Nr: 483 precipitation type logic ac
Wind Speed	Sensor Nr: 460 wind speed m/s act
Wind Direction	Sensor Nr: 472 wind direction ° act
Solar Radiation	No Sensor Assigned
Leaf Wetness	No Sensor Assigned

Only page elements that have sensors assigned will be added to the resulting page.

A dialog showing the new page is shown:



You can change the pre-set page title and data interval etc. for the page, and check/modify the page elements etc. before actually saving the page by clicking “OK”. Of course you can change the page at any time, or re-apply a template page later.

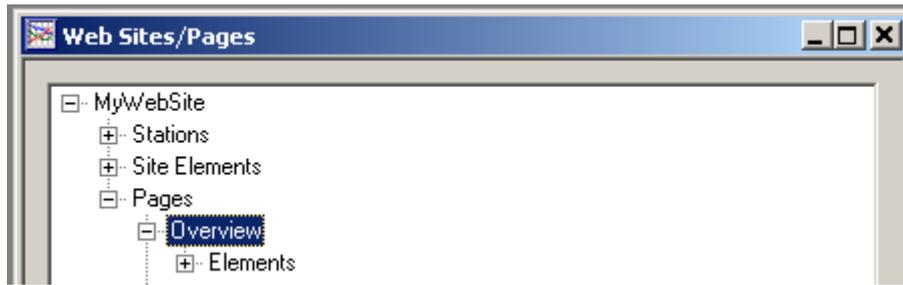
Customizing the general layout of your web site:

If you want to use a different site logo, click on the “Site Elements” entry to show the subordinate objects:



Now double click on the “Site Logo” entry to open the “Edit Site Element” dialog for the logo. Now you can change the logo by clicking the “Read from File” button (see [Site Elements](#), [Edit Site Element](#)). Please make sure your logo has the same size (175x65 pixel) as the one provided.

If you would like to show your stations on a map, double click the first entry under “Pages” named “Overview”.



Click the “Edit Map” button on the right side of the [Edit Page](#) dialog that is displayed (this button is only displayed for the Overview page).

Now the “[Edit Page Element](#)” dialog is displayed, where you can load the map to be used by clicking the “Read from File” button. Close the Edit Page Element dialog with “OK”

Now the “Map Editor” - see [Edit Map](#) will be displayed, and you can position your stations on the map. All stations are placed in the upper left corner of the map on top of each other if the dialog is opened the first time. Move the stations to the required position on the map by clicking and holding the left mouse button on the station (the rectangle), and release the mouse button.

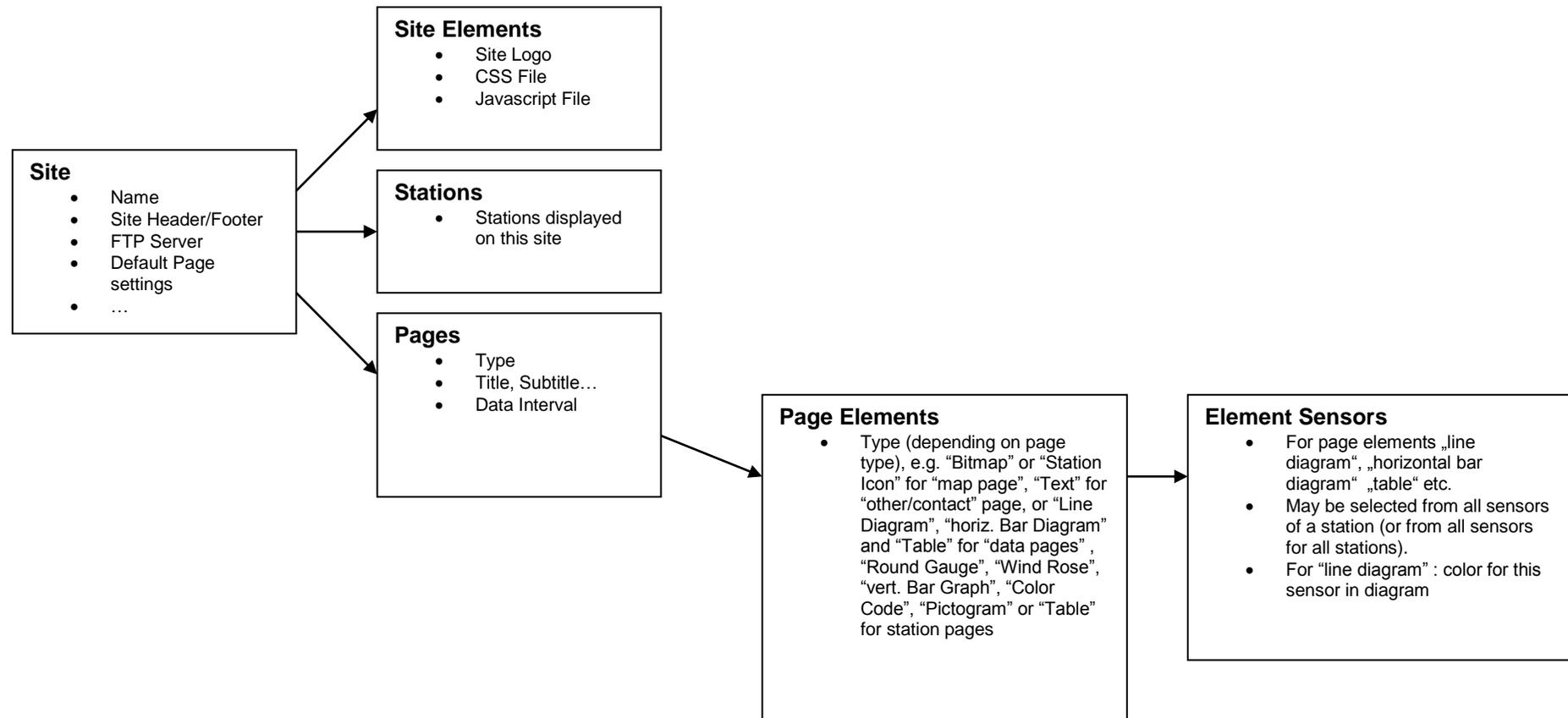
Click “OK” - this will save the page.

If you didn't start SmartWeb already, start it now (e.g. by selecting “Start SmartWeb” from the “Modules” menu).

Note: SmartWeb will now create all pages. It will create data pages for all available data in the database - i.e. if you already have data in the database, it may take some time for SmartWeb to generate all pages and upload them to the configured web server.

6.3 Web-Site Elements

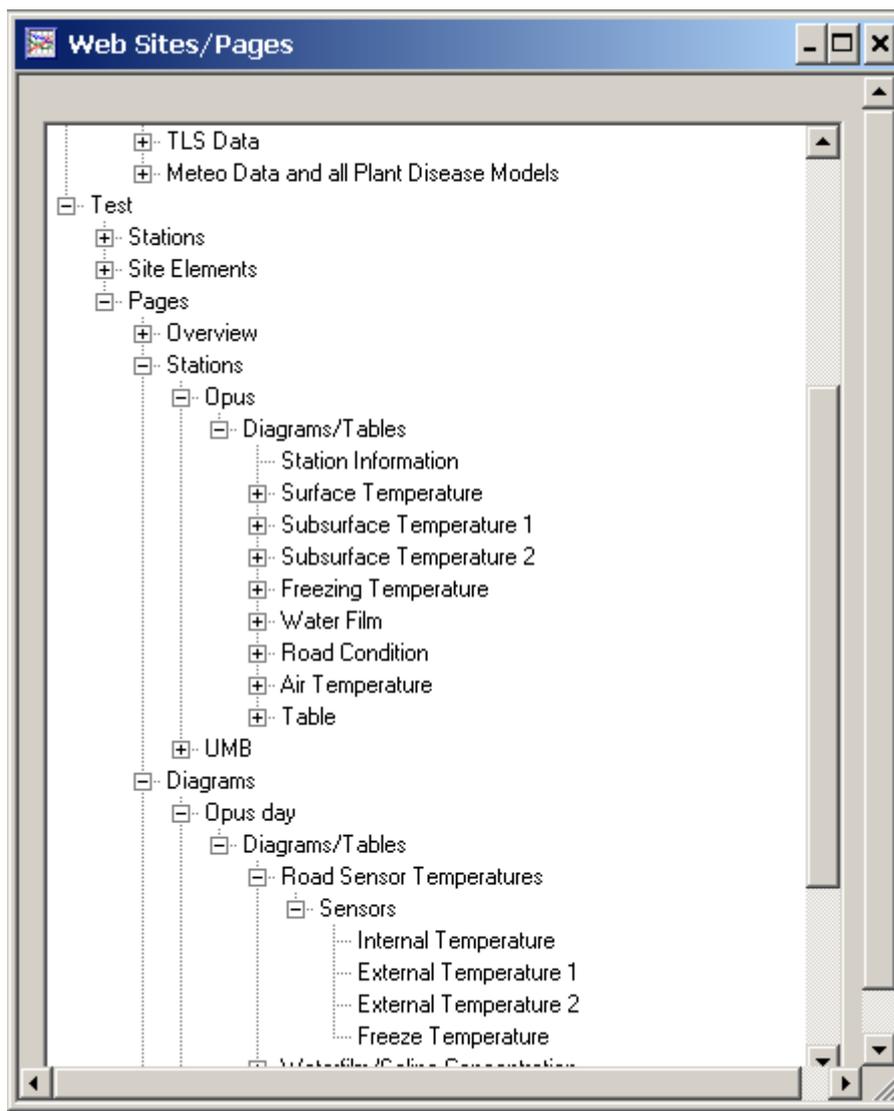
The following diagram shows the elements a SmartWeb web site consists of.



6.4 Customizing Pages and Diagrams

You can customize the layout of the diagrams for each data page to meet your needs. Diagrams and Tables are shown as subordinate elements of data pages in the “Web Site/Pages” display.

A double click on an entry/element in the “Web Site/Pages” display opens a dialog depending on the type of entry you select. Clicking the right mouse button when an entry/element is selected opens a context sensitive menu that allows you to edit, delete, or add a new element of the selected type.



The sensors associated with each diagram or table are shown as subordinate elements of the respective diagram or table:

A double click on a page (all entries subordinate to “Pages/Data Pages”) opens the “[Edit Page](#)” dialog. Here you can configure attributes for the page like the page title and sub tile, or the data interval to be used in diagrams on data pages.

A double click on the “Diagrams/Tables” entry subordinate to a page opens the “[Page Elements](#)” dialog. Here you can edit, delete and add new diagrams or tables, or re-arrange the sequence of page elements (diagrams or tables).

A double click on a diagram or table opens the “[Edit Page Element](#)” dialog. Depending on the page element type (e.g. “Line Diagram”, “horiz. Bar Diagram” or “Table” for data pages), the attributes for the page element like name, line diagram axis scaling etc. can be configured.

A double click on the “sensors” entry of a page element opens the “[Select Sensor](#)” dialog for the page element. The sensor(s) assigned to the page element can be edited. If a page element can contain more than one sensor, like tables or line diagrams, the sequence of the sensors can be changed here.

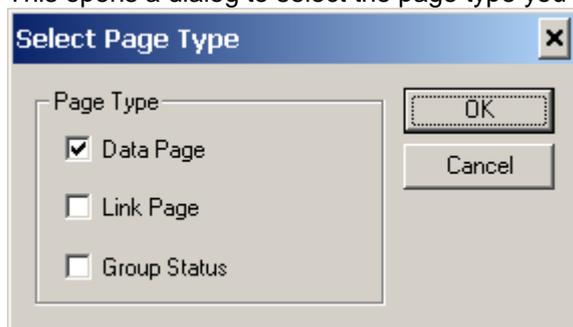
A double click on a specific sensor of a page element opens the “[Edit Page Element Sensor](#)” dialog for this sensor. Depending on the page element type, the color of a sensor (for line diagrams) or the [status mapping](#) (for horiz. Bar Diagrams, vert. Bar Graph, Color Code, Table or Pictogram) can be modified.

The same applies to the template pages mentioned above. If you have a Website with many Stations (and data pages) and you would like to adjust the layout of all data pages for your site, it is recommended to either modify an existing page template, or create a new page template to your needs. Then you can use this page template when creating new data pages, or re-apply this template to existing data pages.

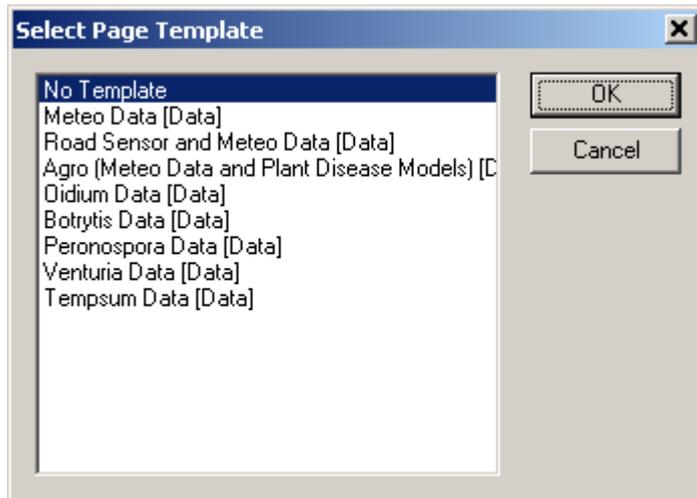
6.5 Adding new Data Page

To add a new “data page” to a site, you can either double click on the “Pages” element of the web site, which will open the “[Pages](#)” dialog where you can add a page by clicking the “New” button, or by selecting the “Pages” entry (or a page entry subordinate to the “Pages” entry) in the “Web Sites/Pages” display and clicking the right mouse button – which will pop up a menu where you can select “New”.

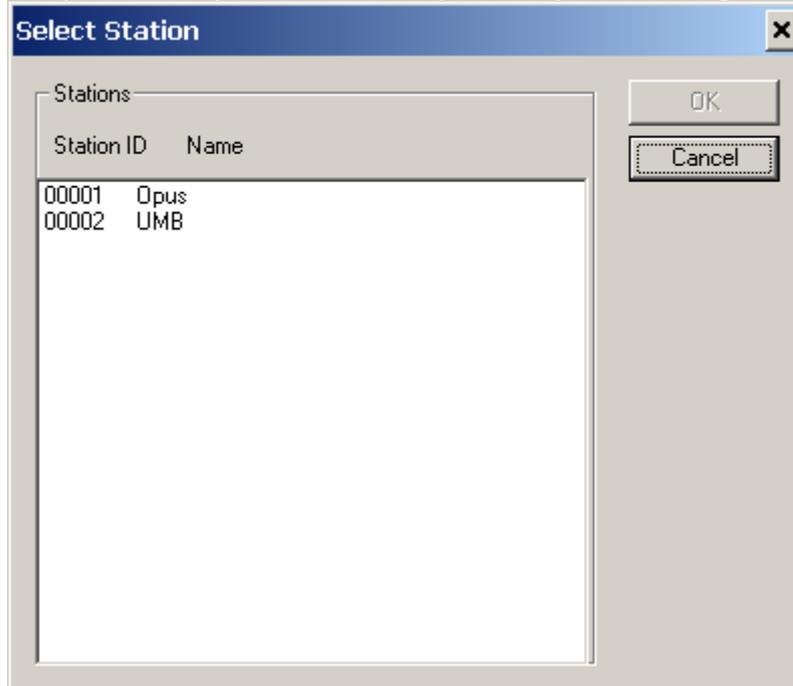
This opens a dialog to select the page type you would like to add



You can either add a “Data Page”, a “Link Page” or a “Group Status” page (see below). If you add a data page, the dialog to select a template for your data page is displayed :



If you selected a template page, a dialog to select the station is displayed. Template pages can only be used to show data from a specific station. If you like to add a data page that contains data from multiple stations, you have to set it up manually without using a template.



Select the station you want to use for the data page. SmartView checks if there is a logical sensor type assigned to every (active) sensor of the station. If not, a dialog is displayed to assign the logical sensor types.

Please Assign UNIQUE (logical) Sensor Types

Edit (log.) Sensor Types

temperature [act] °C	[2] Air Temperature
dewpoint [act] °C	[5] Dew Point
relative humidity [act] %	[10] Relative Humidity
abs. air pressure [act] hPa	[30] Air Pressure
wind speed [act] m/s	[19] Wind Speed
wind direction [act] °	[18] Wind Direction
precipitation diff. [act] l/m ²	[24] Precipitation Diff.
precipitation absol. [act] mm	[23] Precipitation Abs.
precipitation type [act] logic	[25] Precipitation Type
precipitat.intensity [act] l/m ² /h	[26] Precipitation Intensity
Precipitation Diff [calc] mm	[24] Precipitation Diff.

OK Cancel

Next, the dialog to assign the station sensors to the page elements (diagrams, tables etc), is displayed. If there are many page elements on the page, you may have to scroll down to see all assignments.

Assign Station Sensors to Template

OK Cancel

Line Diagram	Meteo Data
Air Temperature	Sensor Nr: 424 temperature °C act
Relative Humidity	Sensor Nr: 440 relative humidity % act
Dew Point	Sensor Nr: 432 dewpoint °C act
Air Pressure	Sensor Nr: 452 abs. air pressure hPa act

Line Diagram	Precipitation
Precipitation Diff.	Sensor Nr: 479 precipitation diff. l/m ² act

Horiz. Bar Diagram	Precipitation Type
Precipitation Type	Sensor Nr: 483 precipitation type logic ac

Line Diagram	Wind Speed/Direction
Wind Speed	Sensor Nr: 460 wind speed m/s act
Wind Direction	Sensor Nr: 472 wind direction ° act

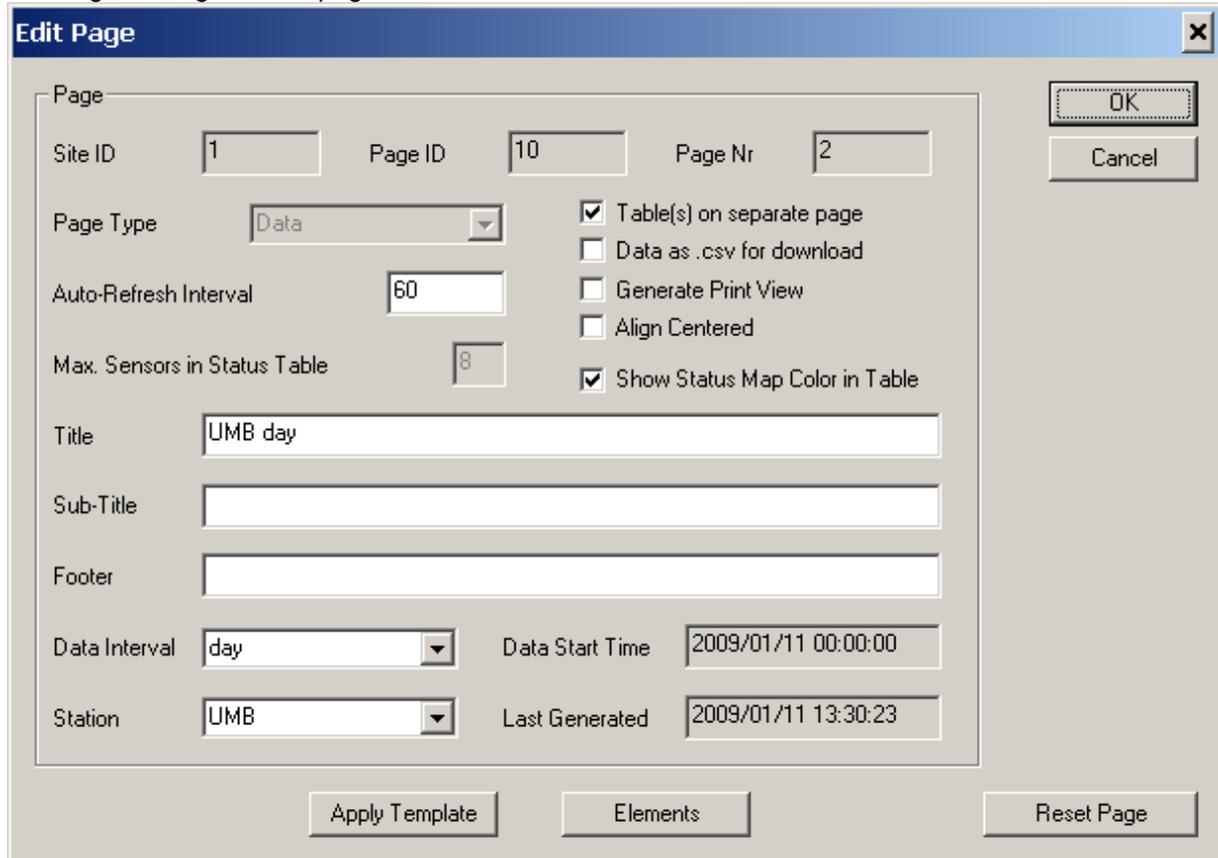
Line Diagram	Solar Radiation
Solar Radiation	No Sensor Assigned

Horiz. Bar Diagram	Leaf Wetness
Leaf Wetness	No Sensor Assigned

Table	Table Meteo Data
Air Temperature	Sensor Nr: 424 temperature °C act
Relative Humidity	Sensor Nr: 440 relative humidity % act
Dew Point	Sensor Nr: 432 dewpoint °C act
Air Pressure	Sensor Nr: 452 abs. air pressure hPa act
Precipitation Diff.	Sensor Nr: 479 precipitation diff. l/m ² act
Precipitation Type	Sensor Nr: 483 precipitation type logic ac
Wind Speed	Sensor Nr: 460 wind speed m/s act
Wind Direction	Sensor Nr: 472 wind direction ° act
Solar Radiation	No Sensor Assigned
Leaf Wetness	No Sensor Assigned

Only page elements that have sensors assigned will be added to the resulting page.

A dialog showing the new page is shown:

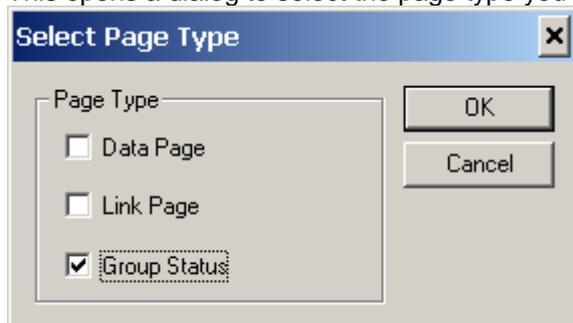


You can change the pre-set page title and data interval etc. for the page, and check/modify the page elements etc. before actually saving the page by clicking “OK”. Of course you can change the page at any time, or re-apply a template page later.

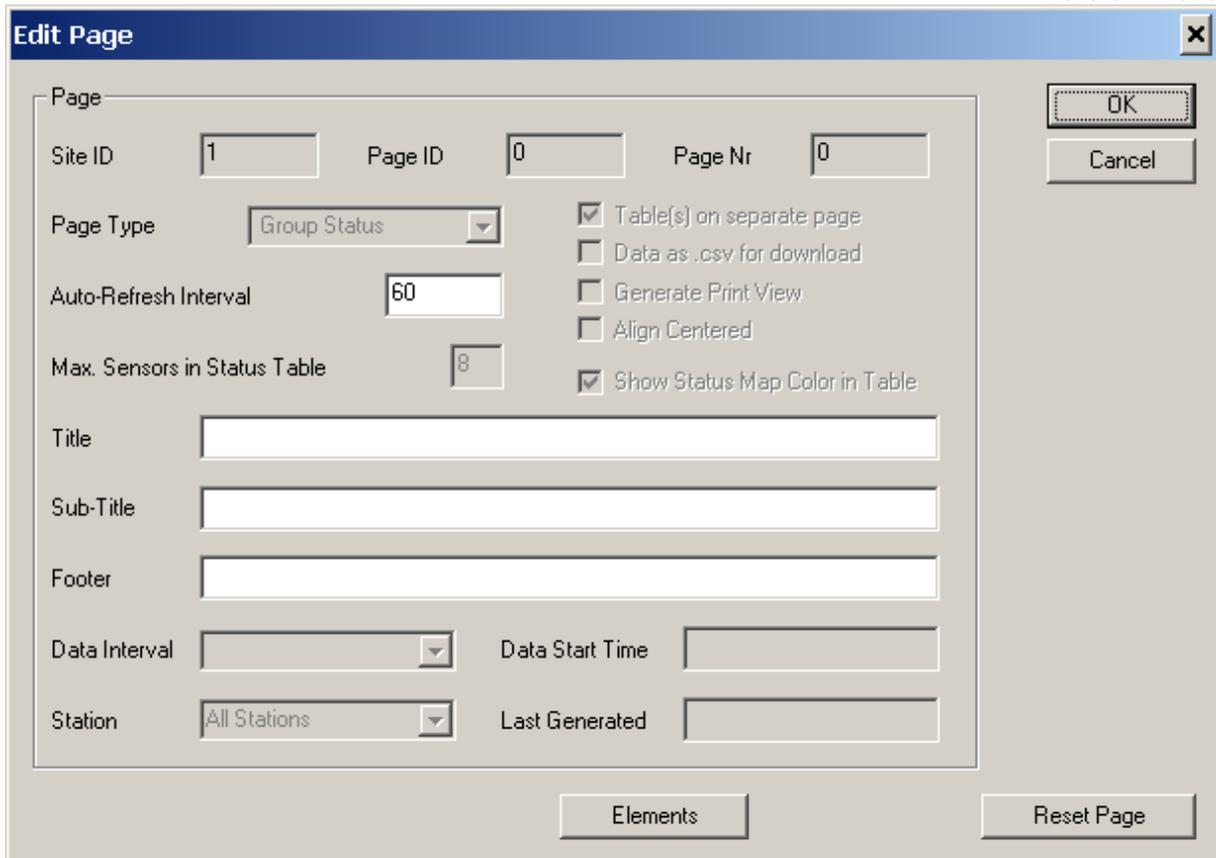
6.6 Adding a “Group Status” page

To add a new “Group Status” to a site, you can either double click on the “Pages” element of the web site, which will open the “Pages” dialog where you can add a page by clicking the “New” button, or by selecting the “Pages” entry (or a page entry subordinate to the “Pages” entry) in the “Web Sites/Pages” display and clicking the right mouse button – which will pop up a menu where you can select “New”.

This opens a dialog to select the page type you would like to add



Select “Group Status” and click OK. This opens the “Site Edit” Dialog for the new group status page:



Edit Page

Page

Site ID: Page ID: Page Nr:

Page Type: Table(s) on separate page
 Data as .csv for download

Auto-Refresh Interval: Generate Print View
 Align Centered

Max. Sensors in Status Table: Show Status Map Color in Table

Title:

Sub-Title:

Footer:

Data Interval: Data Start Time:

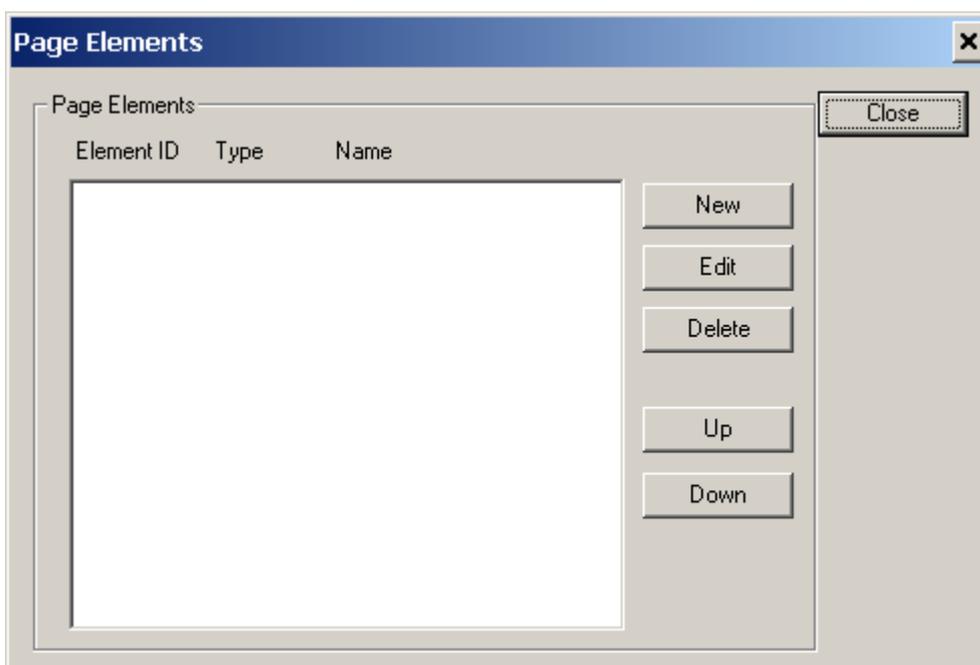
Station: Last Generated:

OK Cancel

Elements Reset Page

Here the title for the page (e.g. Group1), Sub-Title and Footer are configured. The "Auto-Refresh Interval" can be set. Depending on the settings in the group list page (see below), this value specifies after which time this page is refreshed, or after which time the display automatically switches to the next group status page (if there is more than one group status page configured).

The stations and the sensor values to be shown on the group status page are configured through the site elements of this page:



Page Elements

Page Elements

Element ID	Type	Name

New Edit Delete Up Down

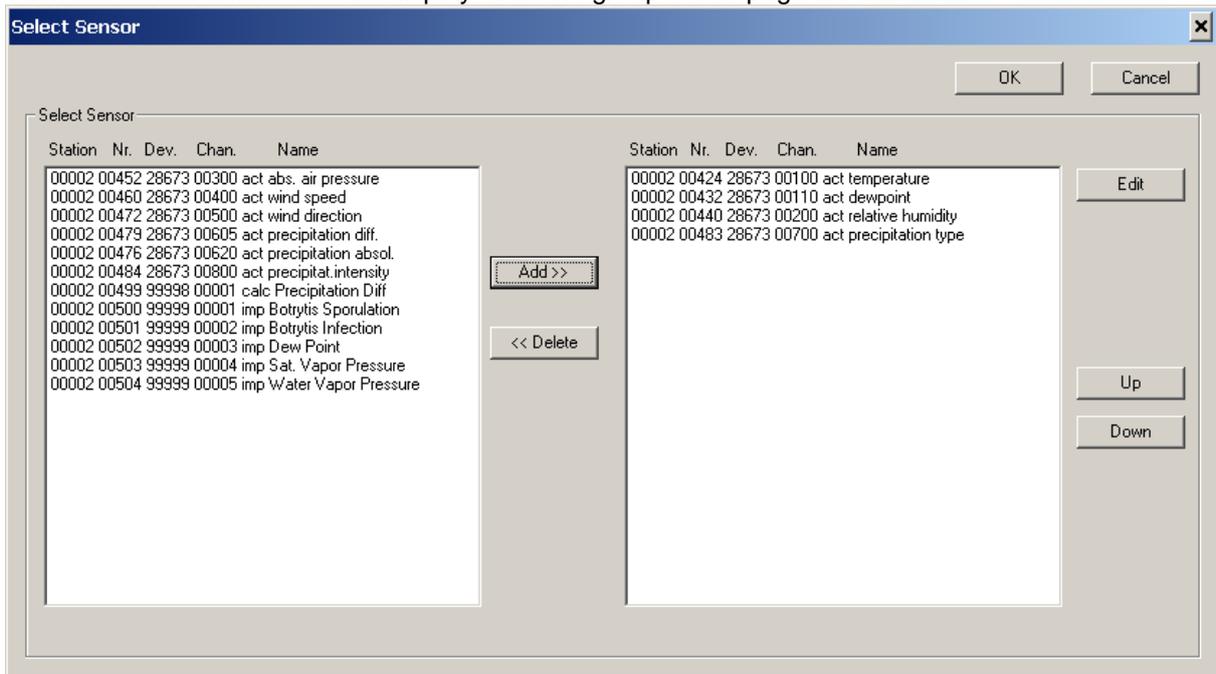
Close

Clicking on “New” opens a dialog to select the station to add to the status page:



The dialog box titled "Select Station" contains a dropdown menu with two options: [1] Opus and [2] UMB. There are "OK" and "Cancel" buttons on the right side.

Then the sensor-channels to be displayed on the group status page are selected:

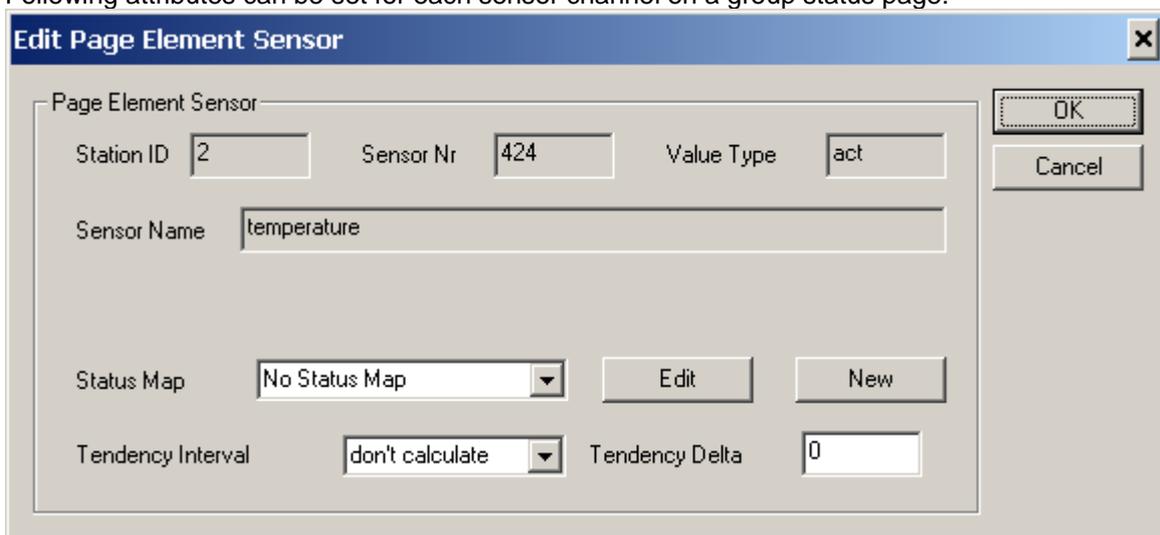


The dialog box titled "Select Sensor" shows two columns of sensor channels. The left column contains 16 channels, and the right column contains 5 channels. There are "Add >>" and "<< Delete" buttons between the columns, and "Edit", "Up", and "Down" buttons on the right side.

Station	Nr.	Dev.	Chan.	Name
00002	00452	28673	00300	act abs. air pressure
00002	00460	28673	00400	act wind speed
00002	00472	28673	00500	act wind direction
00002	00479	28673	00605	act precipitation diff.
00002	00476	28673	00620	act precipitation absol.
00002	00484	28673	00800	act precipitat.intensity
00002	00499	99998	00001	calc Precipitation Diff
00002	00500	99999	00001	imp Botrytis Sporulation
00002	00501	99999	00002	imp Botrytis Infection
00002	00502	99999	00003	imp Dew Point
00002	00503	99999	00004	imp Sat. Vapor Pressure
00002	00504	99999	00005	imp Water Vapor Pressure

Station	Nr.	Dev.	Chan.	Name
00002	00424	28673	00100	act temperature
00002	00432	28673	00110	act dewpoint
00002	00440	28673	00200	act relative humidity
00002	00483	28673	00700	act precipitation type

Following attributes can be set for each sensor channel on a group status page:



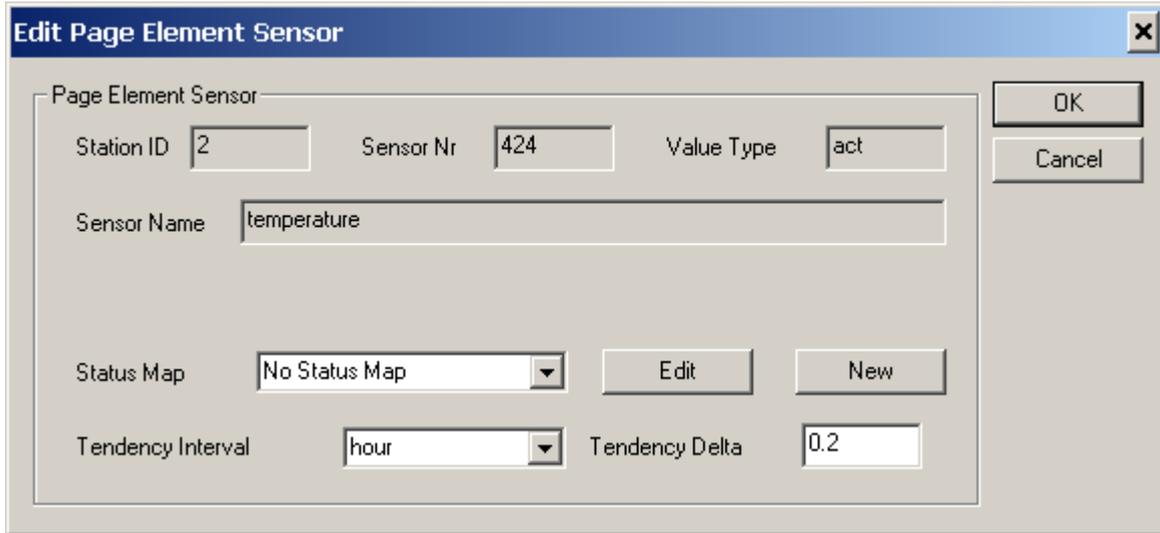
The dialog box titled "Edit Page Element Sensor" contains the following fields and controls:

- Station ID: 2
- Sensor Nr: 424
- Value Type: act
- Sensor Name: temperature
- Status Map: No Status Map (dropdown menu)
- Tendency Interval: don't calculate (dropdown menu)
- Tendency Delta: 0

Buttons: OK, Cancel, Edit, New.

Status-Map: the status mapping to be used to display text/color mapping for a sensor value in the table (see status mapping).

Tendency Interval / Delta: If “Tendency Interval” is set to a value other than “don’t calculate”, and “Tendency Delta” is set to a value greater than 0, the tendency for the sensor value (ascending, constant, descending) is calculated, and shown as an arrow indicator in the table.



Edit Page Element Sensor

Page Element Sensor

Station ID: 2 Sensor Nr: 424 Value Type: act

Sensor Name: temperature

Status Map: No Status Map Edit New

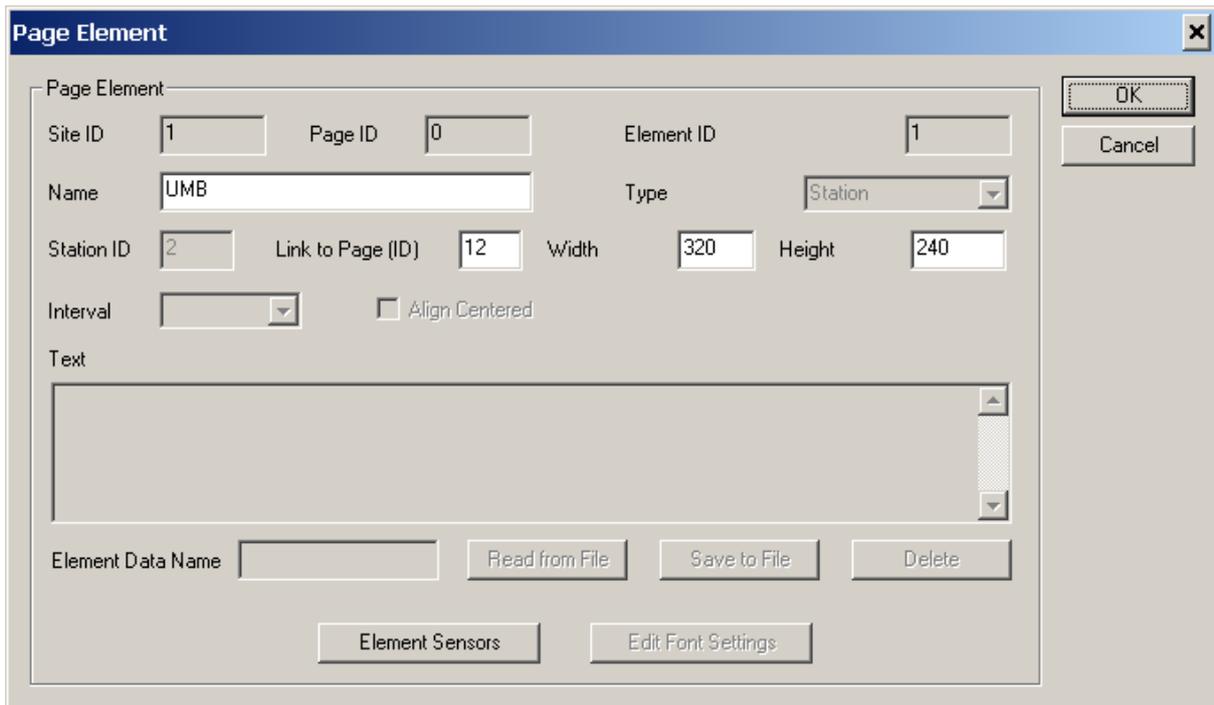
Tendency Interval: hour Tendency Delta: 0.2

OK Cancel

The tendency is always calculated by comparing the current sensor value with the value before. The Tendency Interval specifies the maximum time period an older value may actually be older – if there is no value within that time period, no tendency is calculated.

The “Tendency Delta” specifies the difference between the last value and the current value.

This creates a page element type “Station”:



Page Element

Page Element

Site ID: 1 Page ID: 0 Element ID: 1

Name: UMB Type: Station

Station ID: 2 Link to Page (ID): 12 Width: 320 Height: 240

Interval: Align Centered

Text

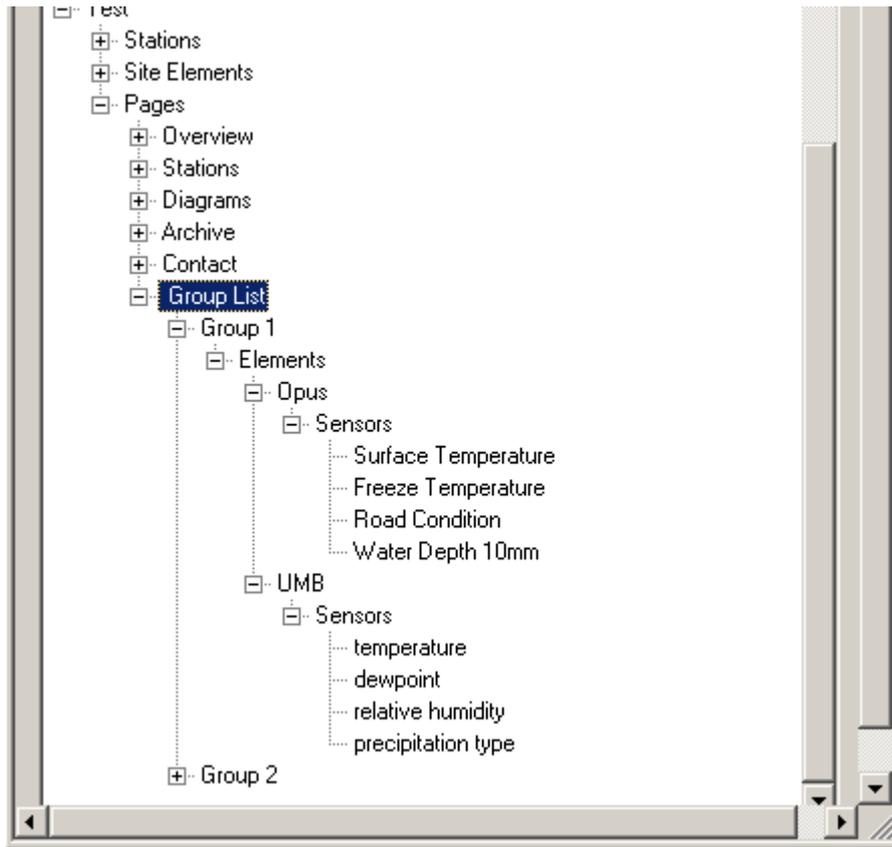
Element Data Name: Read from File Save to File Delete

Element Sensors Edit Font Settings

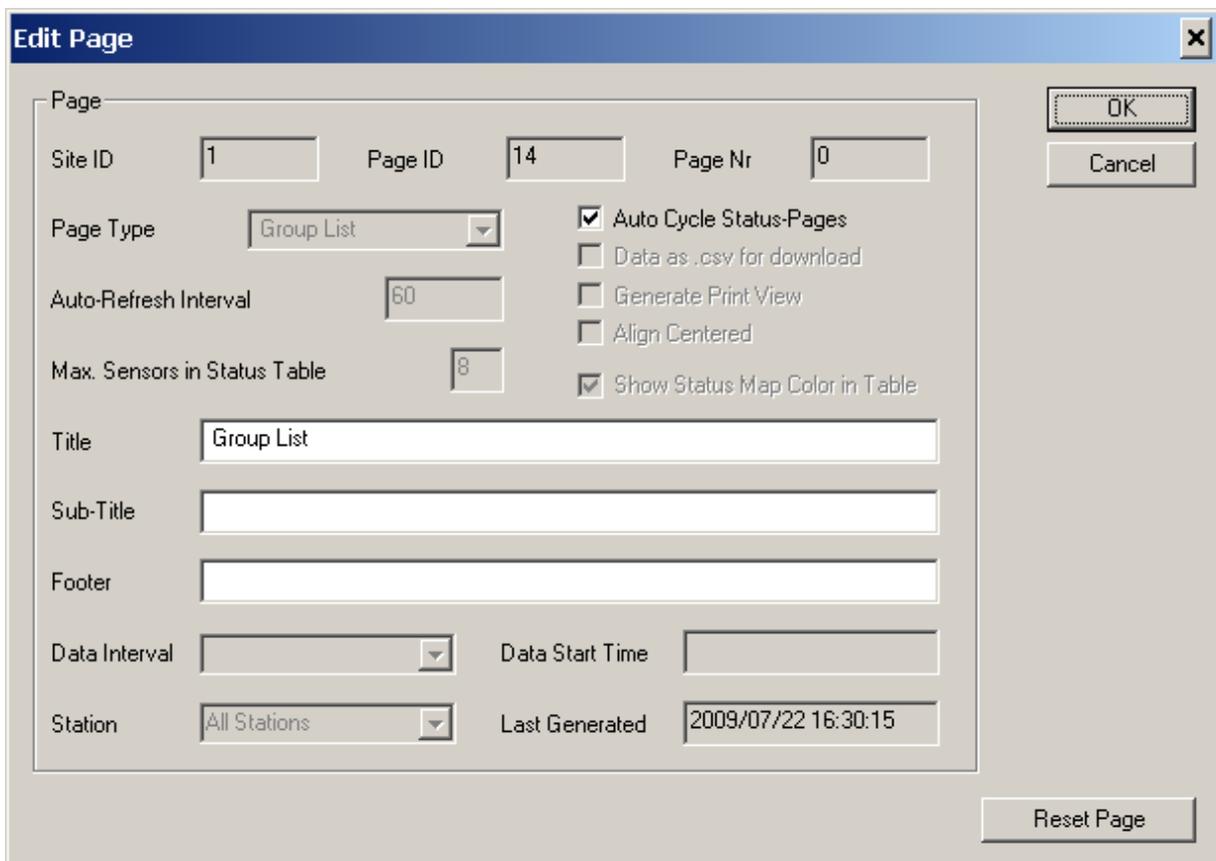
OK Cancel

Width and height of the “Station” element specify width and height of the cam picture display for this station on the group status page.

After creating the first group status page, a “Group List” page is created, and shown in the treeview/page list:



The "Group List" page configures following attributes:



The 'Edit Page' dialog box is shown with the following fields and options:

- Page**
 - Site ID: 1
 - Page ID: 14
 - Page Nr: 0
- Page Type**: Group List (dropdown)
- Auto-Refresh Interval**: 60
- Max. Sensors in Status Table**: 8
- Title**: Group List
- Sub-Title**: (empty)
- Footer**: (empty)
- Data Interval**: (dropdown)
- Data Start Time**: (empty)
- Station**: All Stations (dropdown)
- Last Generated**: 2009/07/22 16:30:15

Options on the right side of the dialog:

- Auto Cycle Status-Pages
- Data as .csv for download
- Generate Print View
- Align Centered
- Show Status Map Color in Table

Buttons: OK, Cancel, Reset Page

Title: the title (and main menu entry) for the group list page.

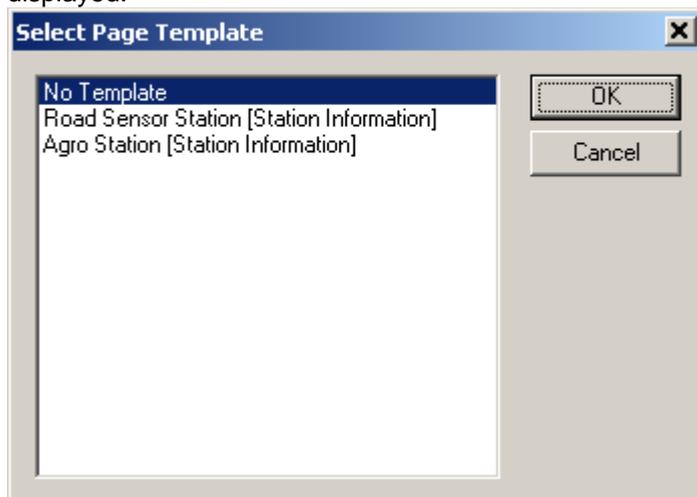
“Auto Cycle Status-Pages”: this attribute controls, which action takes place after the “Auto-Refresh Interval” for a Group Status page has expired. If “Auto Cycle Status-Pages” is set, the next group status page will be displayed, if it is not set, the (current) group status page is reloaded.

6.7 Adding Stations

To add a new station to a SmartWeb site

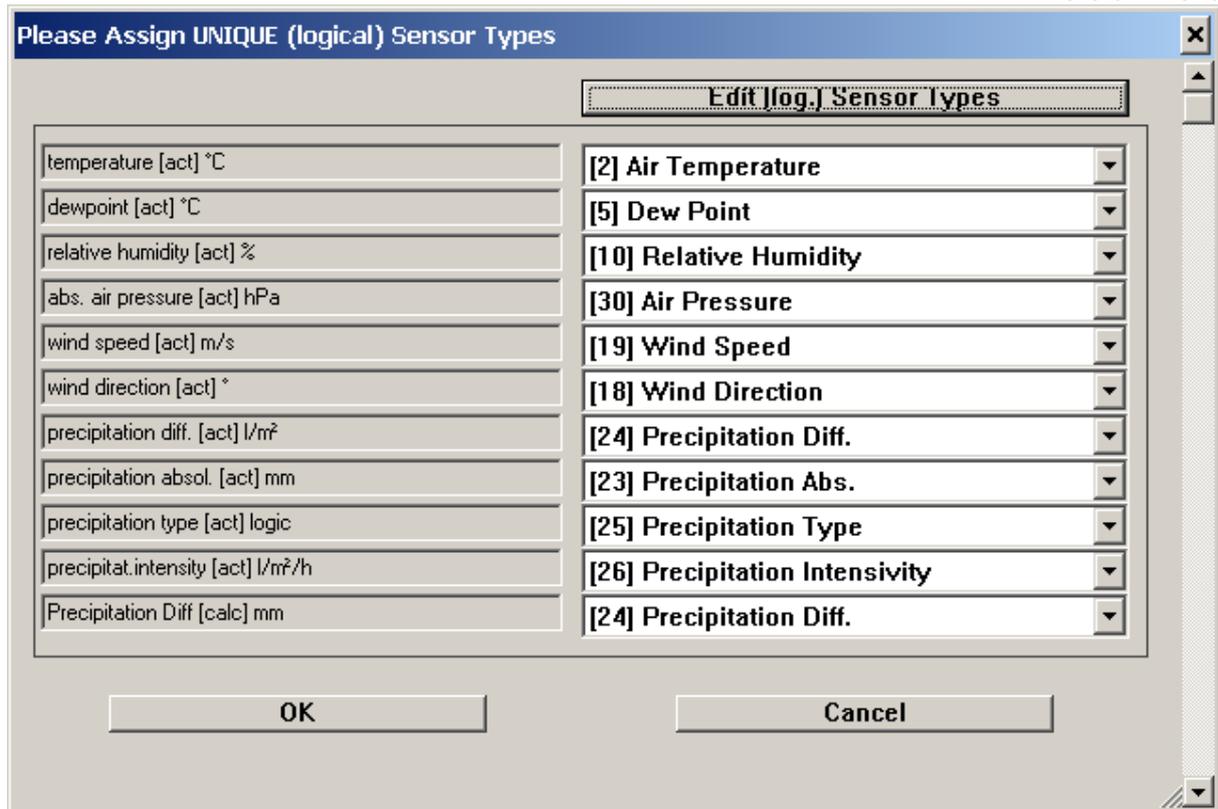
- ➔ Add the new station to the Collector configuration → SmartView3 menu Edit -> Stations
- ➔ Have the station polled at least once by Collector, so the sensor configuration of this station is read from the station
- ➔ For UMB stations: activate all sensor-channels of the station that you need
- ➔ Verify the logical sensor assignment to the sensor channels of the station, particularly if the station is equipped with multiple sensors of the same type (e.g. multiple temperature sensors).
- ➔ Configure any Export/Import jobs for the station that add additional sensor channels to the station configuration, like the road condition forecast for Road-Sensor stations, or plant disease models for Agro stations.
- ➔ Select “Web-Sites” from the “Edit” menu in SmartView3
- ➔ Double click the web site entry
- ➔ Click “Edit Stations” and add the station to the site

For each station you add to the web site, a dialog to select a (station) template page for the station is displayed:



You can set up a station without using a template page.

If you selected a template, SmartView checks if there is a logical sensor type assigned to every (active) sensor of the station. If not, a dialog is displayed to assign the logical sensor types



You can select a logical sensor type from the drop down box. If there is no pre-defined sensor type that fits your sensor, you can create a new sensor type using the button "Edit (log.) Sensor Types".

A Dialog to assign the station sensors to the page template (i.e. to all the page elements of the template page) is displayed next:

Assign Station Sensors to Template [X]

[OK] [Cancel]

vert. Bar Graph Air Temperature	Air Temperature Sensor Nr: 424 temperature °C act
vert. Bar Graph Dew Point	Dew Point Sensor Nr: 432 dewpoint °C act
Round Gauge Relative Humidity	Relative Humidity Sensor Nr: 440 relative humidity % act
Round Gauge Air Pressure	Air Pressure Sensor Nr: 452 abs. air pressure hPa act
Round Gauge Precipitation Diff.	Precipitation Diff. Sensor Nr: 479 precipitation diff. l/m ² act
Color Code Precipitation Type	Precipitation Type Sensor Nr: 483 precipitation type logic ac
Round Gauge Solar Radiation	Solar Radiation No Sensor Assigned
Round Gauge Wind Speed	Wind Speed Sensor Nr: 460 wind speed m/s act
Wind Rose Wind Direction	Wind Direction Sensor Nr: 472 wind direction ° act
Color Code Leaf Wetness	Leaf Wetness No Sensor Assigned
vert. Bar Graph Ground Temperature 1	Ground Temperature 1 No Sensor Assigned

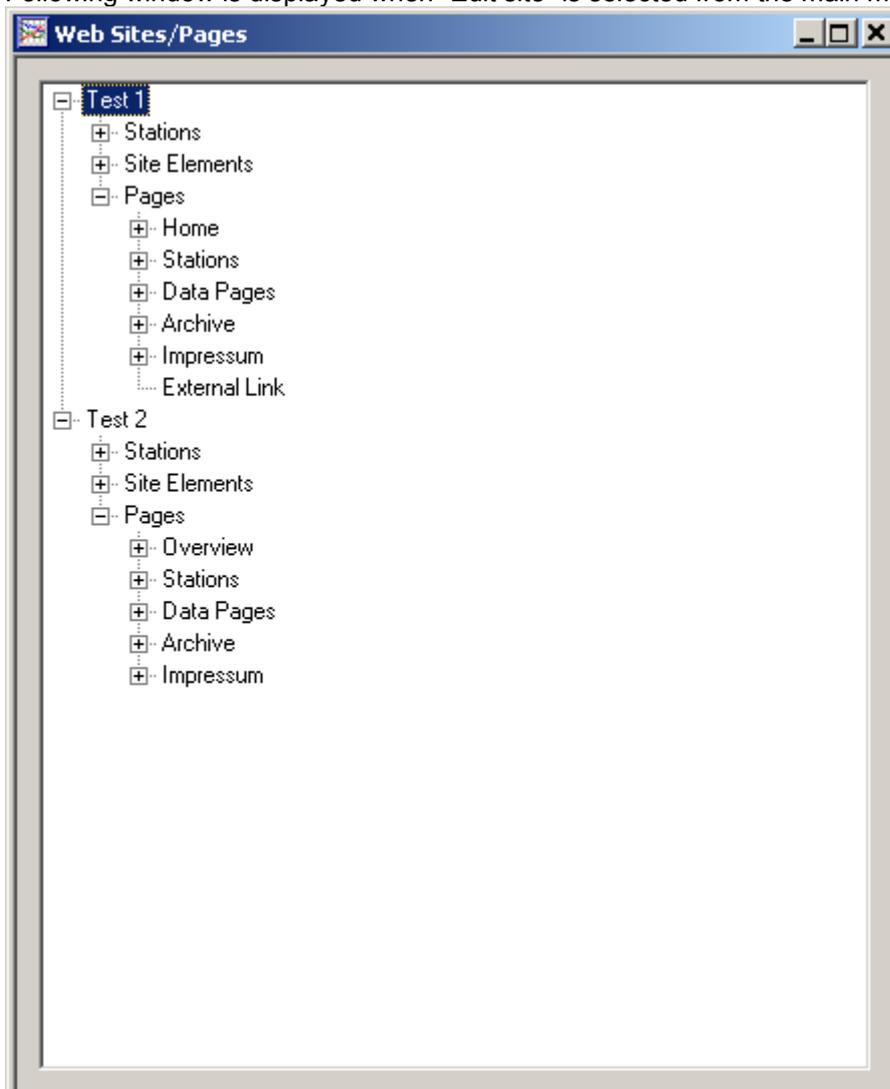
The page elements that don't have a sensor assigned will not be added to the resulting page.
For station pages, a table containing all active sensors of the station is created automatically.

Click "OK" to add the station (and station page) to the web site.

→ Customize the new data page to your needs.

6.8 Site configuration dialogs

Following window is displayed when "Edit site" is selected from the main menu :

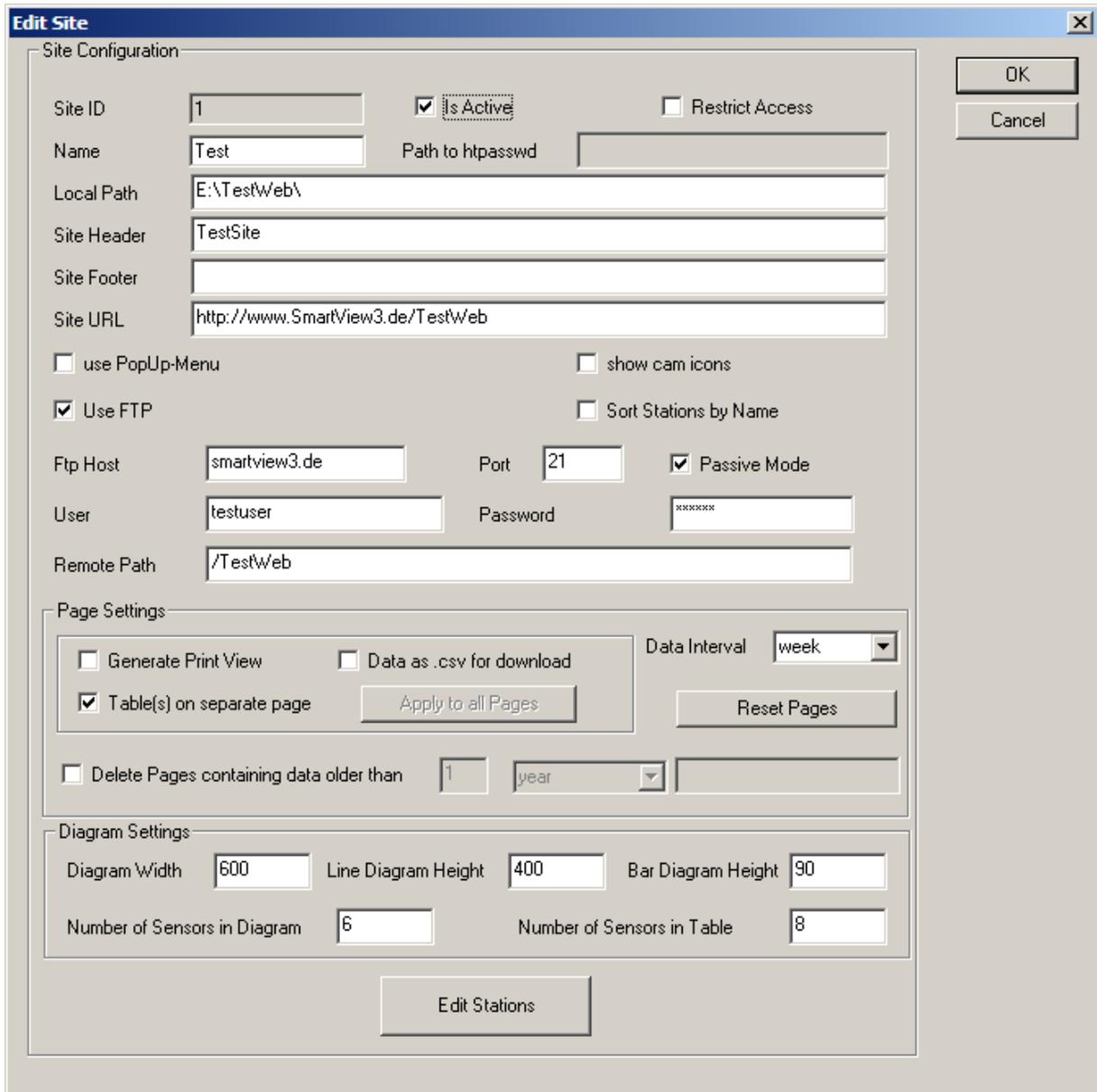


The main menu will now contain a menu "Web-Sites", from which actions like "edit" "delete" or "new" can be selected. Depending on the element that is selected in the window, an appropriate dialog will be displayed. The same functions (edit/delete/new) can be selected from a pop-up menu that appears if a "left click" with the mouse is done on the selected element.

The function "Check Site Sensor Configuration" will go through all configured stations and web sites, and remove inactive (or not longer configured) sensors from the web site configuration (i.e. the tables and diagrams on station and data pages, and the "station" on the overview page). Note that this could lead to tables and/or diagrams without any configured sensors.

It will also add active (new) sensors to the respective pages – but will not add the new sensors to tables or diagrams. However, as the new sensors are added to the respective pages, they are available to configure new diagrams.

6.8.1 Edit Site Dialog



Attributes:

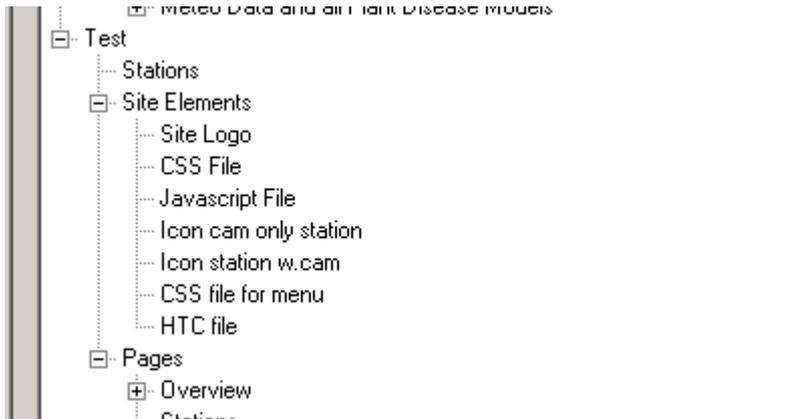
- **Site ID:** the site id for this site (read only)
- **Is Active:** the site is active (will be generated/updated) or is not active
- **Restrict Access:** if this box is checked, .htaccess and .htpassword files will be created to restrict access to the pages of the site.
NOTE: This only works for Apache web server!!
- **Path to htpasswd:** (only if “Restrict Access” is checked) the **complete/absolute** path to the htpasswd file (without the filename!). If ftp transfer to the web server is used, the complete/absolute path to the directory where this ftp user accesses the server needs to be specified here. If the web server is on the local PC, this should be set to the local path.

- **Local Path:** the local path where all generated pages are written to. All files are written to the local hard drive using this path. If Use FTP is specified, the files are transferred using ftp as well
- **Site Header:** The site header. This header will appear on top of all pages of the site
- **Site Footer:** The site footer. This footer will appear at the bottom of all pages of the site
- **Site URL:** the actual URL for the site in the internet – needed if Google Maps is used to display the stations on a map (overview/map page).
- **Use PopUp-Menu:** use Javascript/CSS based popup style menus on website
- **Show cam icons:** show symbols(bitmaps) for stations with cam and “cam only” stations on station icons (map pages)
- **Sort Stations by Name:** if checked, the station/diagram/archive pages will be sorted by name rather than by sequence. If station groups are used, the groups will be sorted by name rather than by id as well.
- **Use FTP:** if checked, the generated files are uploaded to the specified server.
NOTE: as the image files (for diagrams) and html files with the measurement data in tables can get quite big, a fast connection to the web server is recommended
- **FTP Host:** the host name or ip address for the ftp transfer
- **FTP Port:** the port for the ftp connection to the server
- **Passive Mode:** use ftp passive mode to connect to server
- **FTP User:** the ftp user for the ftp transfer
- **FTP Password :** the ftp password for the ftp transfer
- **Remote Path:** the path (below the directory where the ftp user is logged on to the server) on the server where the site files are to be placed
- **Generate Print View :** default for new pages - include a “print view” of the page
- **Data as .csv for download:** default for new data pages - include data as .csv file for download
- **Table(s) on separate page:** default for new data pages - place tables on a separate page
- **Data interval:** default data interval for new data pages (not used with template pages).
- **Delete Pages containing data older than:** automatically delete data pages that show data which is older than the configured time period.
- **Diagram Width:** the width for all diagrams on all data pages for this site (not used with template pages)
- **Line Diagram Height:** the height for all line diagrams on this site (not used with template pages)
- **Bar Diagram Height:** the height for all bar diagrams on this site (not used with template pages)
- **Number of Sensors in Diagram:** maximum number of sensors in a line diagram
- **Number of Sensors in Table:** maximum number of sensors in a table

Buttons:

- **Edit Stations:** this opens the “Select Site Stations” dialog, where you can specify which stations are displayed on this site. See [Select Site Stations](#)
- **Apply to all Pages:** applies “Generate Print View”, “Data as .csv for download” and “Table(s) on separate page” to all pages of this site
- **Reset Pages:** re-sets all pages of this site - this will cause SmartWeb to re-generate all pages for the site

6.8.2 Site Elements



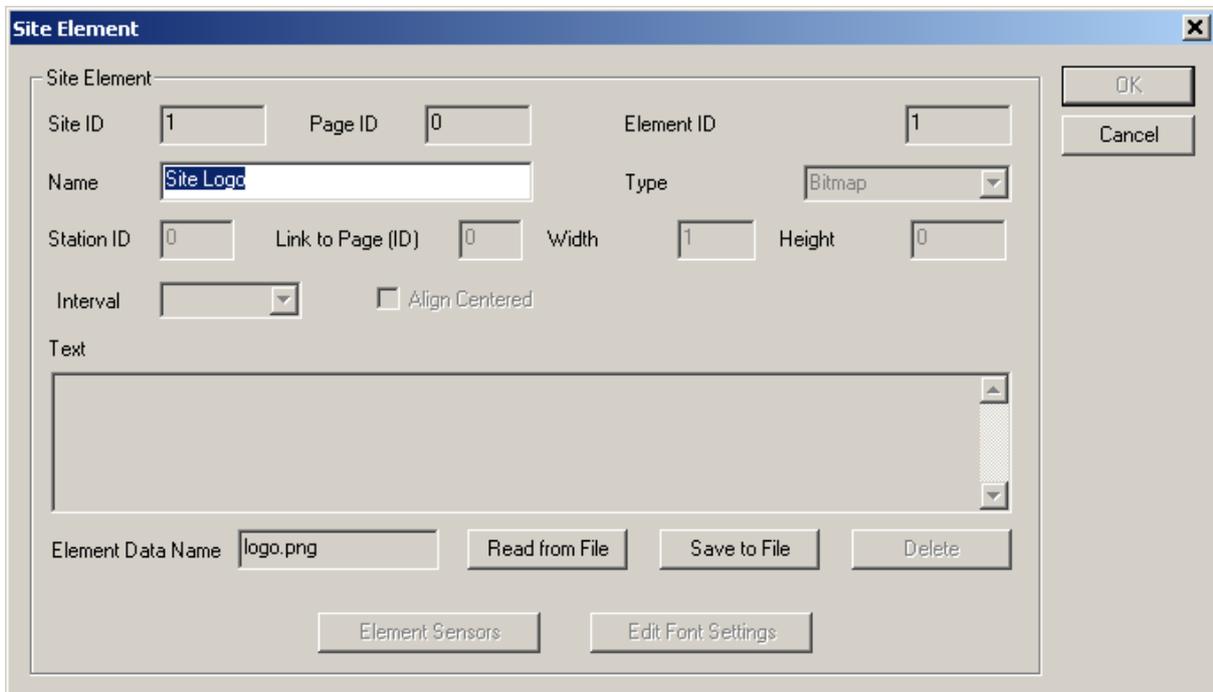
A site always has following “Site Elements” :

- a Site Logo ,
- a CSS File
- a Javascript File
- Icons for Stations “cam only” and for Stations with camera, that are used when displaying stations on “own” maps (not for Google Maps).
- a second CSS file for the popup-menu
- a htc file for the popup menu.

These can be edited by double-clicking on the entry in the list or by selecting the entry and clicking the “edit” button.

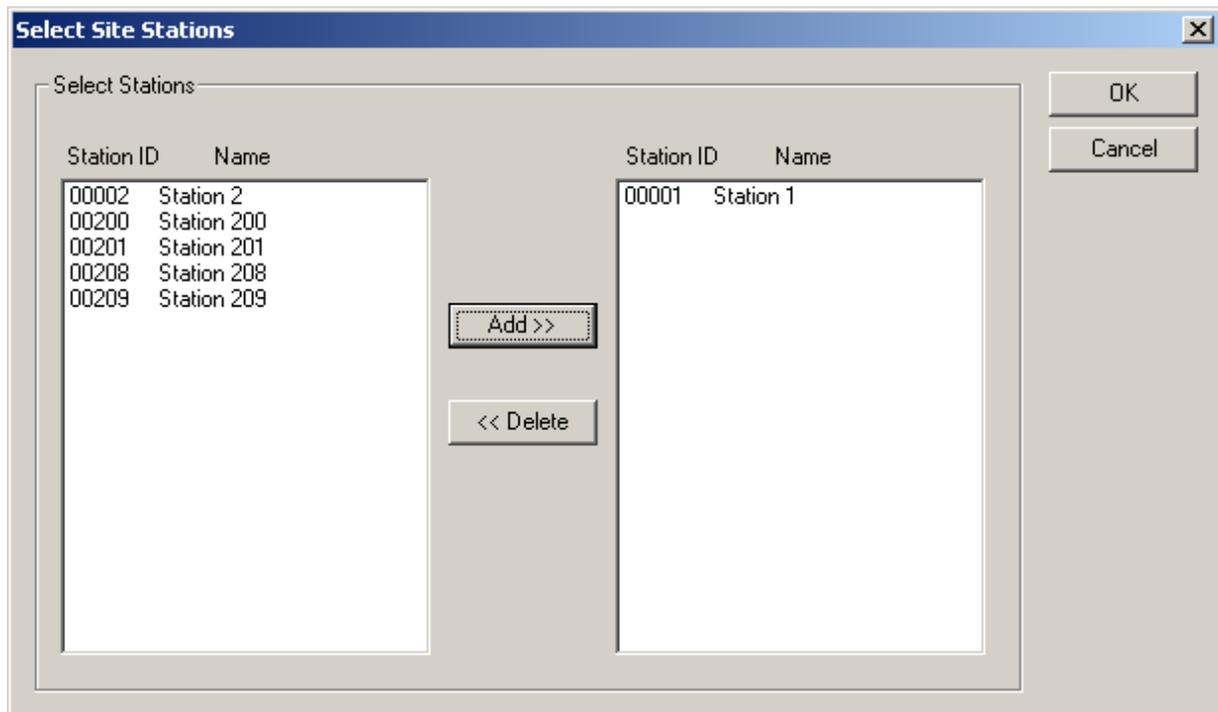
See chapter [Styles.css](#) for a description of the .css file

6.8.3 Edit Site Element



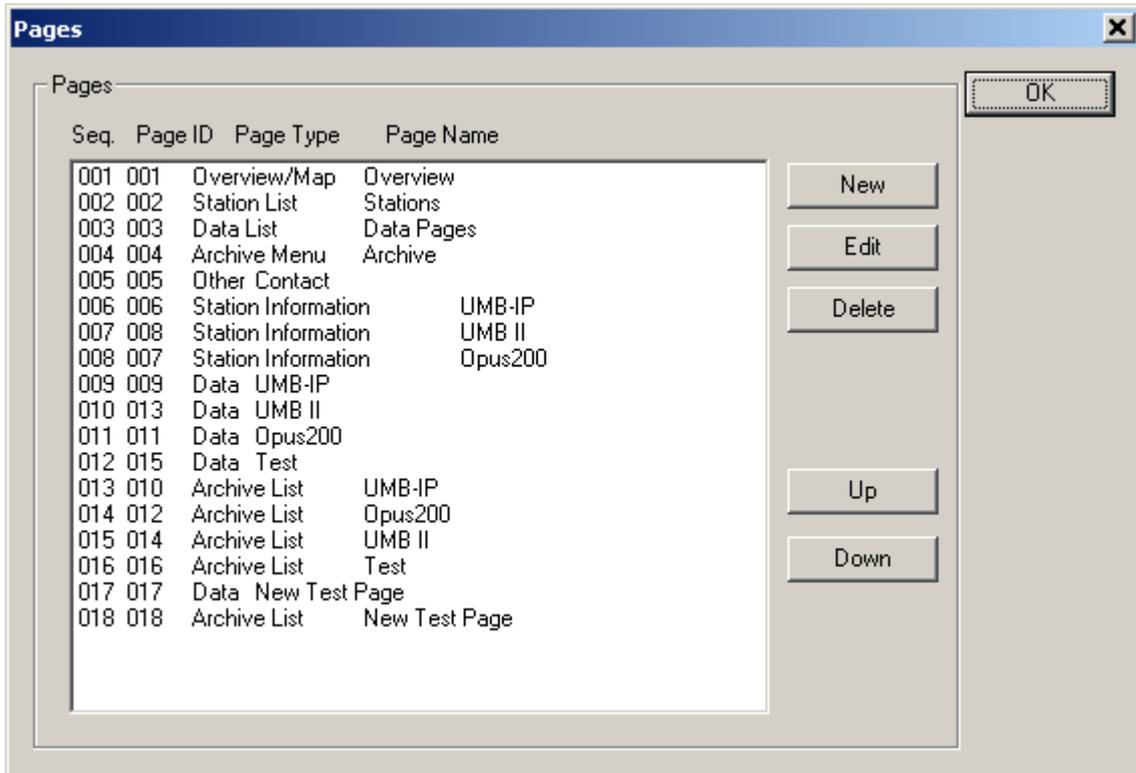
The Site Elements “Logo”, “CSS File” or “Javascript File” can be edited here - i.e. they can be read from a file on the hard drive, or written to a file on the hard drive to be edited and then again read from the file and stored in the database for use by SmartWeb.

6.8.4 Select Site Stations



This dialog is used to select the stations to be used on a site. To select a station, mark it in the left list box and click "add". To remove a station mark it on the right list box and click "delete".

6.8.5 Pages



This dialog shows all pages for the site.

Note : only “data” pages and “external link” pages can be deleted or added to a site- all other pages are pages that are always present on a site.

Deleting a data page will delete the associated “archive list” page.

The “Up” and “Down” buttons can be used to change the sequence of the pages, which changes the sequence of entries in the “Station List”, “Data List” and “Archive Menu” page.

Following page types exist:

6.8.5.1 Map Page

The map page is the default start page for a site. It shows (if a map has been loaded to the page) the stations as icons on a map, and the status of the station (status of last transfer). If no Map has been loaded, the stations and their status is listed.

A Map Page has following “Page Elements”:

One element of type Bitmap which contains the image of the map to be used, or is used to configure parameters for using Google Maps

Elements of type “Station” with sensors that are to be displayed in the overview table

Elements of type “Station Icon” with sensors that are to be displayed on the map (if a map has been configured) on “scroll over” the station icon with the mouse

Elements of type “Map link”: a Map Link is a collection of absolute positions or GPS coordinates on a map to define a polygon that links to another map page. This can be used to configure multiple map pages in different resolutions.

Elements of type “Mobile Trail” to display mobile station data (Mobile NIRS) on Google Maps.

When a station is added to a SmartWeb site, a “Station” and a “Station Icon” page element are added to the start page (“main” map page) with all active sensor channels of the respective station.

These elements can be edited or removed from the page configuration

See [Edit Page](#), [Edit Map](#), [Page Elements](#).

6.8.5.2 *Station List Page*

This “menu page” contains a list of all stations configured for this site. This page does not have page elements that can be edited.

6.8.5.3 *Data List Page*

This “menu page” contains a list of all data pages configured for this site. This page does not have page elements that can be edited.

6.8.5.4 *Archive Menu Page*

This “menu page” contains a list of all “Archive List” pages. This page does not have page

6.8.5.5 *Other Page / Contact*

This is the “contact” page for the site. It contains one Page Element of type “Text”. This text is placed “as is” on the page and may contain any valid html tags.

6.8.5.6 *Station Page*

This page shows information about a station, the sensors of the station, and the last measurement values for each sensor.

It may contain “page elements” for

- station information
- one (or more) tables with sensors to display the last sensor value for a sensor
- “Analog Gauge” displays for sensor values to display the last sensor value graphically, e.g. as “Round Gauge”, “Wind Rose”, “vert. Bar Graph”, “Color Code” or “Pictogram”.
- Line- and/or Bar-Diagrams showing values for the last 1,2,3,4, 6, 12 or 24 hours

6.8.5.7 *Data Page*

A data page shows measurement values of sensors configured for this page in diagrams and tables. Page Elements are Line Diagrams, Bar Diagrams and Tables. Sensors can be configured from all stations that are configured for the site. Diagrams and Tables can be configured from all sensors that are configured to the page.

6.8.5.8 *Archive List Page*

This “menu” page lists all “Archive Pages” for the site. There is an Archive List page for every Data Page.

6.8.5.9 *Archive Page*

An Archive Page is a “Data page” that has been closed, i.e. the time interval for the page is in the past - and no more data is added to this page.

6.8.5.10 *External Link*

A link to a web-site extern to the SmartView3 generated site. This will appear on the main menu.

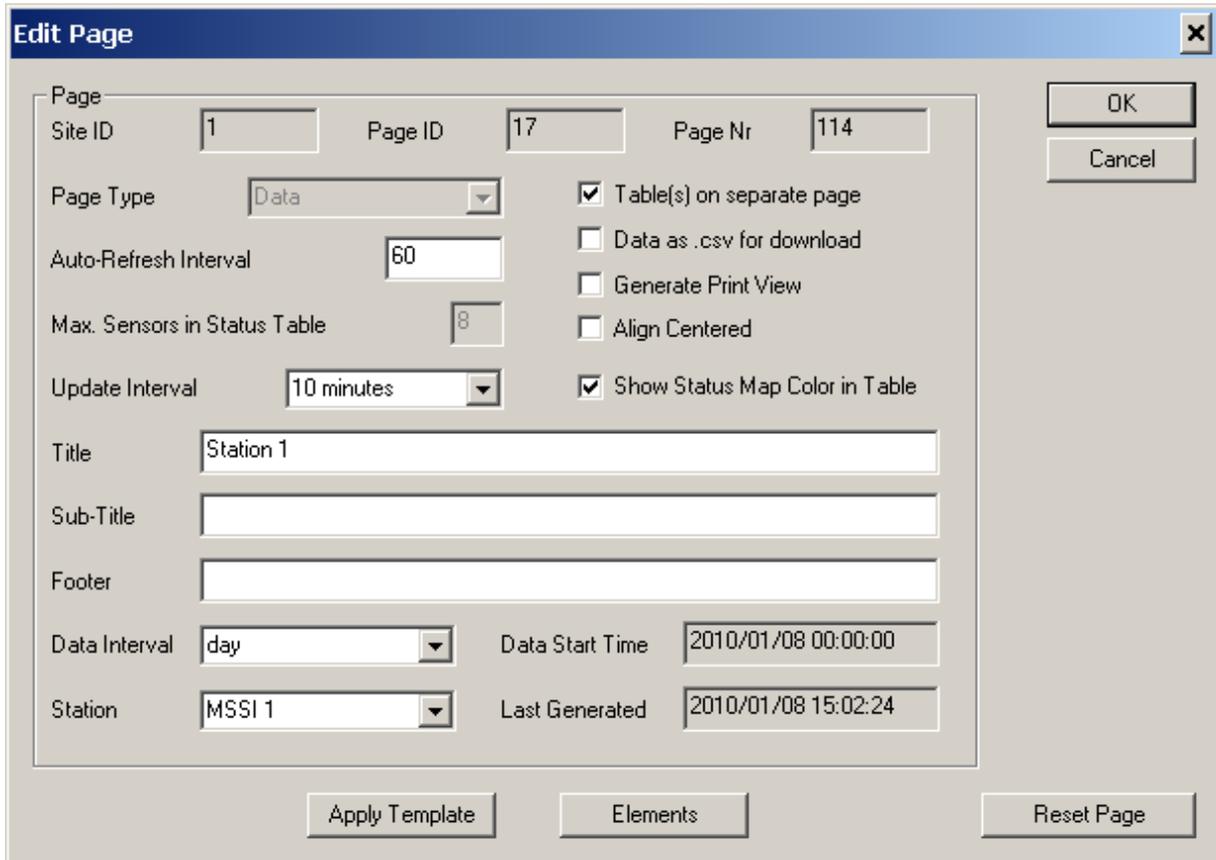
6.8.5.11 *Group Status List*

This “menu” page lists all group status pages.

6.8.5.12 *Group Status*

A group status page, showing cam pictures (if applicable) and last sensor values for multiple pages

6.8.6 Edit Page



- **Table(s) on separate page:** if checked, tables are placed on a separate html page (data page only)
- **Data as .csv for download:** if checked, data for all sensors of a data table are included as .csv file for download from the page
- **Generate Print View:** if checked, a separate html page for printing without site header/footer and menu, and with white background is generated, and a link to this page is shown on the corresponding page.
- **Align Centered:** align elements (diagrams, tables etc) centered on page
- **Show Status Map Color in Table:** if selected, all values sensors in tables that have a [status map](#) assigned will be shown with the appropriate color as background of the table cell.
- **Auto-Refresh Interval:** For pages of type “Map”, “Station” or “Data” the auto-refresh interval (in seconds) can be configured. An interval of 0 seconds disables auto refresh for the page.
- **Max. Sensors in Status Table:** (overview page only) this parameter sets the maximum number of sensors that are displayed on a status table. If the stations contain more than that number of sensors, multiple tables are created.
- **Update Interval:** minimum time interval between page updates
- **Title:** the title for this page
- **Sub Title:** the sub title for this page
- **Footer:** the footer for this page
- **Data Interval:** the data interval for a data page
- **Station ID:** the associated station id for a page

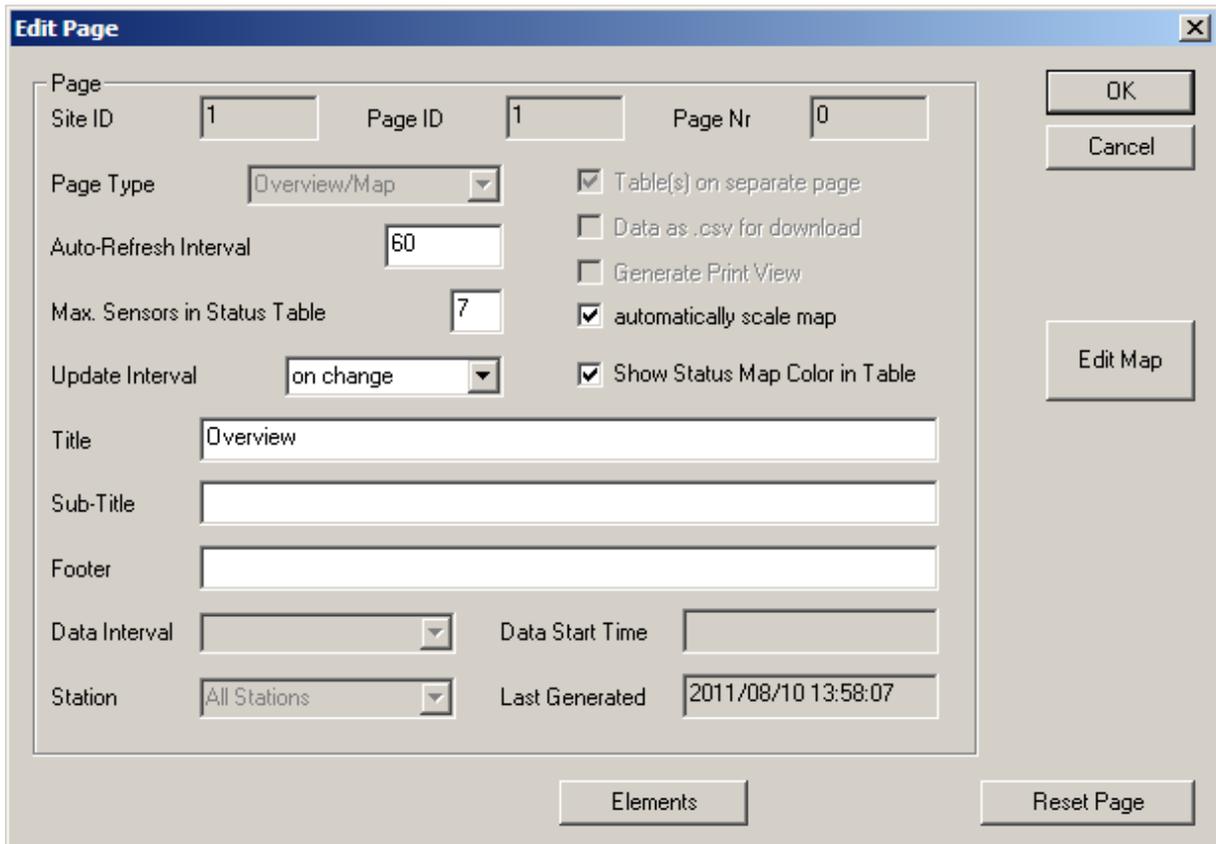
Buttons:

- **Apply Template:** you can (re-) apply a page template to data or station pages. The appropriate dialogs (see “Getting started” or “adding data pages” above) are displayed.
- **Elements:** show/edit the elements (diagrams, tables etc) for the page, and change the sequence of elements on the page

- **Reset Page:** resetting a page will cause SmartWeb to re-generate the page. For data pages, all “archive” pages with all available data for the page/station are re-generated.

6.8.7 Edit Map Page

6.8.7.1 Map Page Attributes



The 'Edit Page' dialog box contains the following fields and options:

- Page: Site ID (1), Page ID (1), Page Nr (0)
- Page Type: Overview/Map (dropdown)
- Auto-Refresh Interval: 60 (text input)
- Max. Sensors in Status Table: 7 (text input)
- Update Interval: on change (dropdown)
- Title: Overview (text input)
- Sub-Title: (empty text input)
- Footer: (empty text input)
- Data Interval: (dropdown)
- Data Start Time: (empty text input)
- Station: All Stations (dropdown)
- Last Generated: 2011/08/10 13:58:07 (text input)

Checkboxes on the right side:

- Table(s) on separate page
- Data as .csv for download
- Generate Print View
- automatically scale map
- Show Status Map Color in Table

Buttons on the right side: OK, Cancel, Edit Map. Buttons at the bottom: Elements, Reset Page.

For map pages, the following attributes can be set:

- **Max. Sensors in Status Table:** determines, how many sensor values are shown in the overview table next to each other. If more than this number of sensor channels is configured for a station, the values are distributed over multiple tables.
- **Automatically scale map:** if selected, the map is scaled automatically to the size of the browser window (using JavaScript) whenever the page is loaded in the browser.
- **Show Status Map Color In Table:** show the status map color and text in the overview table instead of only showing the “raw” value (if a status map is configured for the sensor channel).

6.8.7.2 Place Station Icons on the Map

The button “**Edit Map**” opens a dialog to position the station icons on the map:



This is the map editor window (Map page only). Click on the white square of the station and move it (by holding the left mouse button) to the desired position on the map, and release the mouse button. If the map is bigger than your screen, you may need to move the station icon, and scroll the dialog, and then move the station icon further.

Note: if “use GPS coord” is selected for the bitmap (map) element of the map page, the station icons are placed using the GPS coordinates of the station (see [Station Settings](#)) and map bitmap (see [Edit Bitmap \(Map on Map Page\)](#))– and cannot be moved manually.

To load (or change) the map : edit the “Bitmap” page element of the “Map” page.

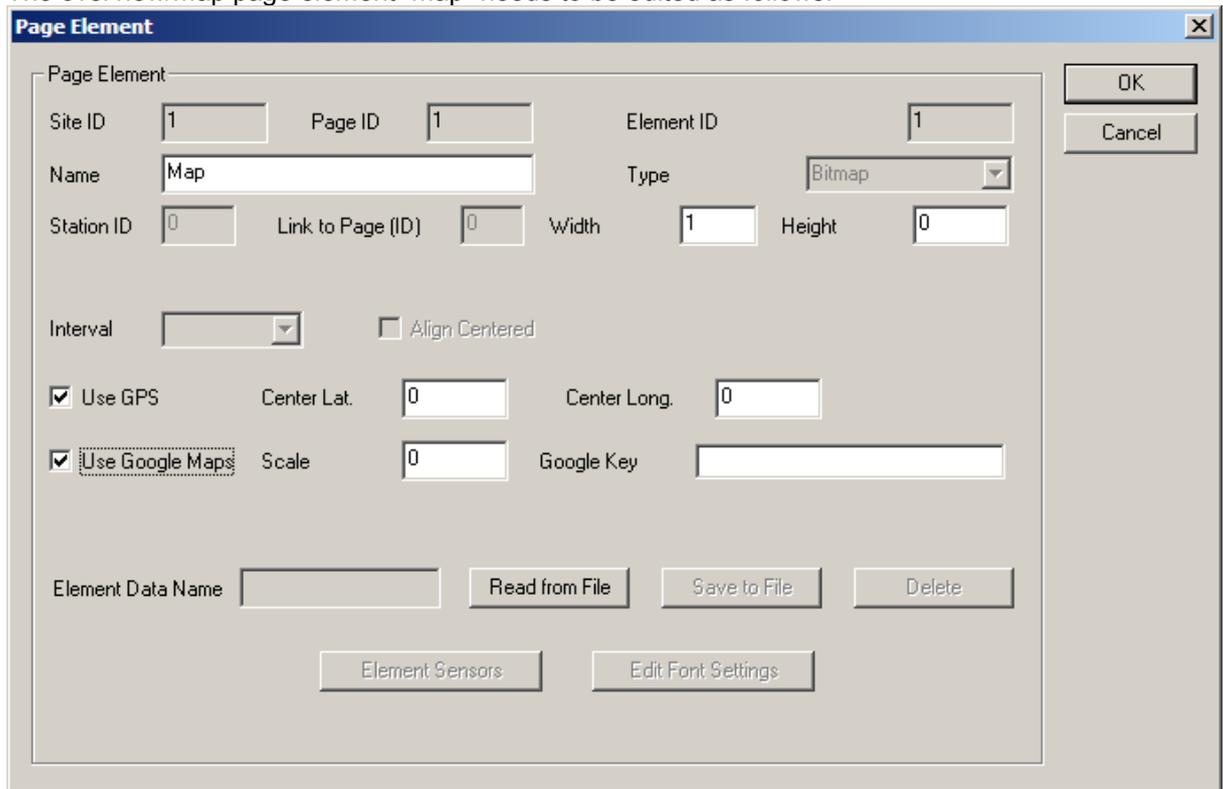
Note: the bitmap is stored in the database. The bitmap file should not be too big to minimize the time it takes to load the file in the browser, and to avoid problems with storing the file in the database. A reasonable size for the bitmap (e.g. max. 800 pixel wide) should be chosen, and the file should be in a compressed image format like .png or .jpg.

6.8.7.3 Use Google Maps

In order to use Google Maps to display the stations and (if applicable) to display data from mobile stations as a “Mobile Trail”, following items need to be configured:

- 1.) The “Site URL” – i.e. the URL under which the website can be reached in the internet (see Edit Site Dialog above). Google Maps can only be used if the website can be accessed via Internet because the Google Server needs to be able to read the .kml file containing the station data and mobile sensor data.
- 2.) For all stations, the latitude and longitude for the station need to be configured in the “edit station” dialog

3.) The overview/map page element “map” needs to be edited as follows:



The screenshot shows the 'Page Element' dialog box with the following settings:

- Site ID: 1
- Page ID: 1
- Element ID: 1
- Name: Map
- Station ID: 0
- Link to Page (ID): 0
- Width: 1
- Height: 0
- Interval: (dropdown menu)
- Align Centered:
- Use GPS:
- Center Lat.: 0
- Center Long.: 0
- Use Google Maps:
- Scale: 0
- Google Key: (empty text field)
- Buttons: Read from File, Save to File, Delete, Element Sensors, Edit Font Settings

“Use GPS” and “Use Google Maps” must be selected

The “Center Latitude” and “Center Longitude” should be set to the initial center point to be displayed

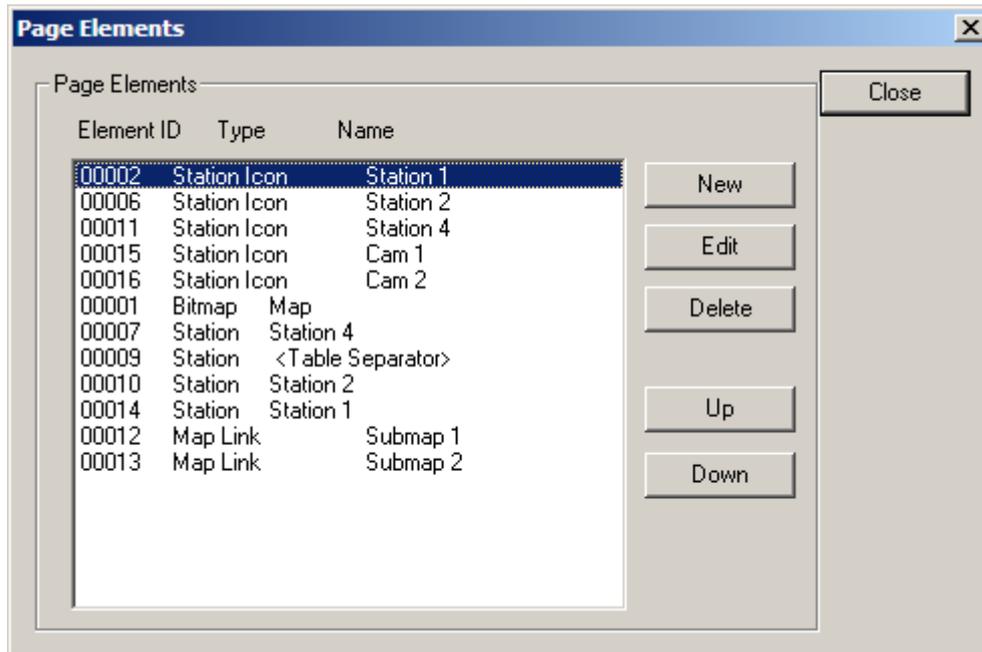
The “Scale” value can be set to the initial scale for the map (default is 12)

Note: if the user changes the center latitude/longitude and scale settings by zooming/moving the map in the browser window, the actual settings will be preserved using cookies – so the values set here are only used as initial values when the page is displayed the first time (or cookies are deleted/disabled).

Width and Height can be set to set the size for the map. If Height is smaller than 400, it is set to 400, if width is smaller than 100, width will not be set for the map and thus the map width will resize with the browser window.

Google Key: here, a “Google Maps API Key” can be configured. Google recommends using this key to monitor the application’s Map API usage. See <https://developers.google.com/maps/signup>

6.8.7.4 Map Page Elements



A Map Page may contain following “Page Elements”:

- One element of type **Bitmap** which contains the image of the map to be used
- One or more element of type “**Station Icon**” with sensors that are to be displayed on the map (if a map has been configured) on “scroll over” the station icon with the mouse
- One or more element of type “**Station**” with sensors that are to be displayed in the overview table
- One or more element of type “**Map link**”: a Map Link is a collection of absolute positions or GPS coordinates on a map to define a polygon that links to another map page. This can be used to configure multiple map pages in different resolutions.

When a station is added to a SmartWeb site, a “Station” and a “Station Icon” page element are added to the start page (“main” map page) with all active sensor channels of the respective station.

These elements can be edited or removed from the page configuration. “Station Icons” and “Station” Elements can be configured independently.

Measure values for the “element sensors” configured for the Station Icon element are shown on the popup display when the user moves the mouse over the station icon on the web page.

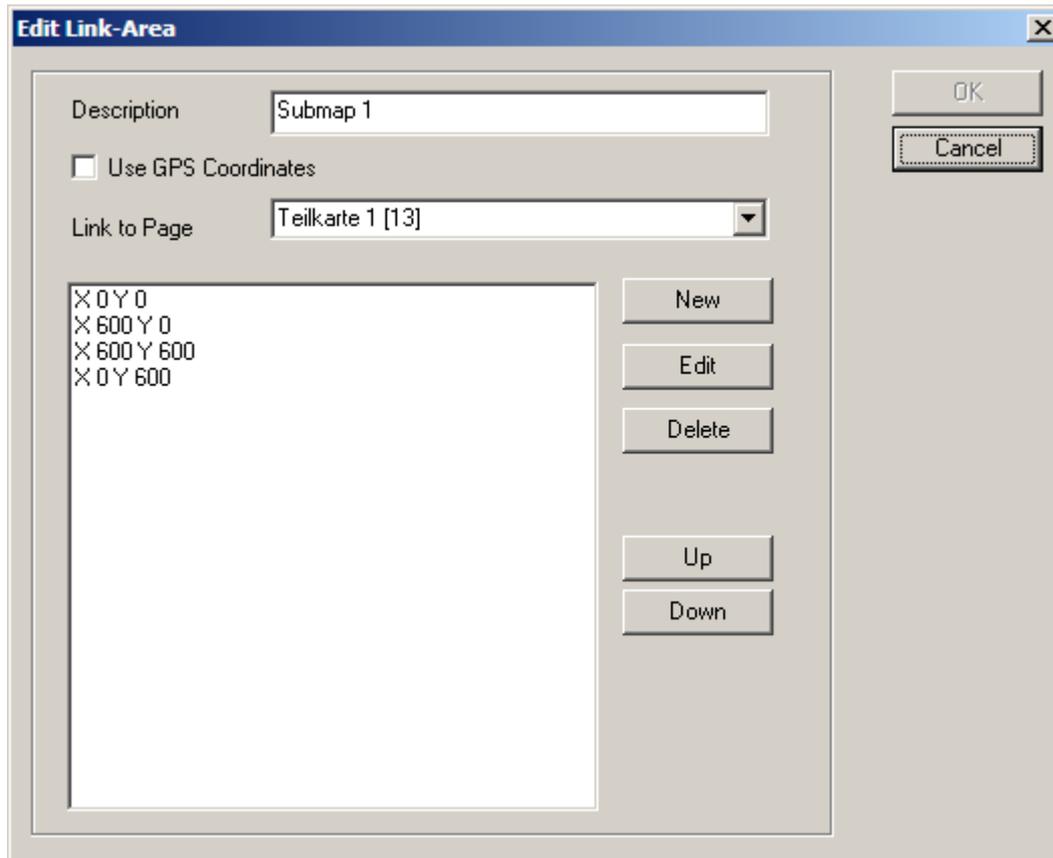
The “element sensors” configured for the “Station” page elements are shown in one or more “overview” tables.

A special “table separator” Station page element can be added to create separate tables (i.e. to group stations).

6.8.7.5 Links to subordinate maps

Page elements of type “map link” can be used to define areas on a map that are used as link to a subordinate map, i.e. if the user clicks with the mouse on the specified area the linked map is displayed.

A “map link” element is defined by 3 or more X/Y coordinates or GPS coordinates that form a polygon – i.e. the last point is automatically connected to the first point to form a closed area.



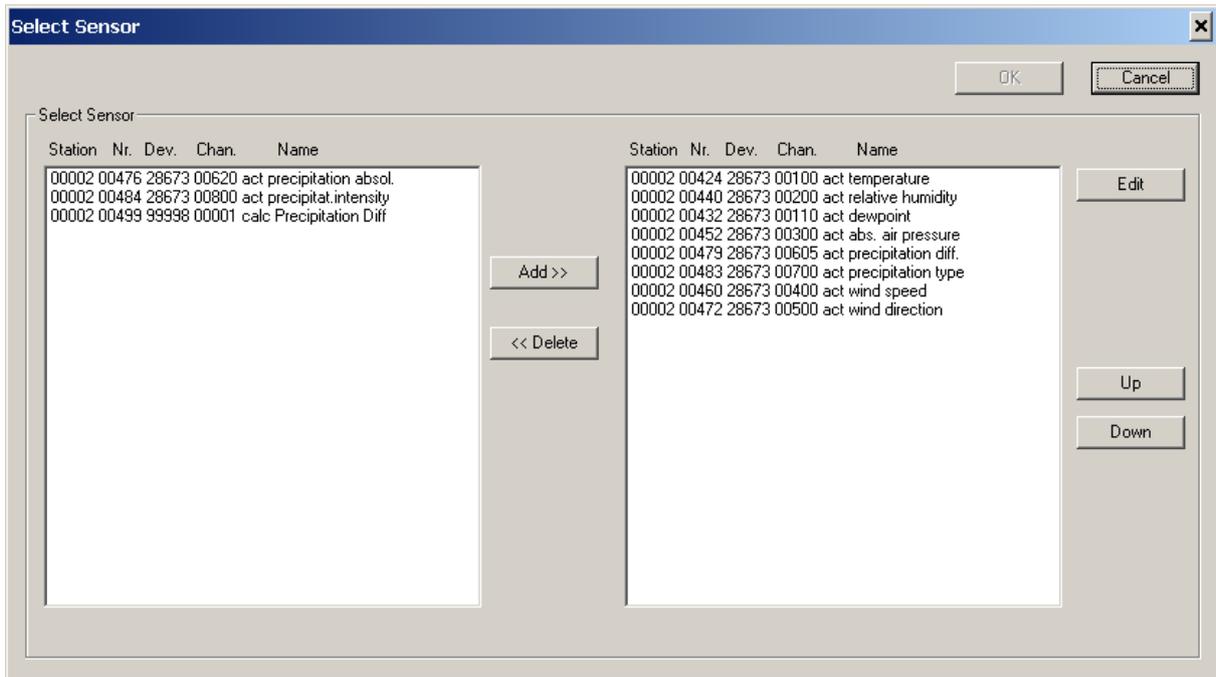
The Description of the map link element is displayed when the user moves the mouse over this area on the map page.

If “Use GPS Coordinates” is selected, GPS (latitude/longitude) coordinates are used instead of absolute X/Y coordinates on the map. Note that in order to use GPS coordinates the GPS coordinates for the bitmap map element must be configured.

Link To Page specifies to which other map page (must be added to the web site) the area defined by the coordinates links to.

To check the configured polygon, the specified area can be shown on the [Place Station Icons on the Map](#) dialog by selecting the map link element from the list box on the right hand side of the dialog.

6.8.8 Select Sensor



This dialog shows sensors to be selected. This dialog is used wherever Sensors can be selected within SmartView3 (e.g. Sensors for a data page, sensors for diagrams or tables, sensors to be exported etc.).

Multiple sensors can be selected from the left side (list of available sensors).

Note: if you edit a template page element, a similar dialog to select logical sensor types (instead of “real” station sensors) is displayed.

If the page is associated with a specific station, the sensor-channels of that station are displayed on the left hand side. If the page is not associated with a specific station, all sensor channels of all stations of the web site are displayed on the left hand side.

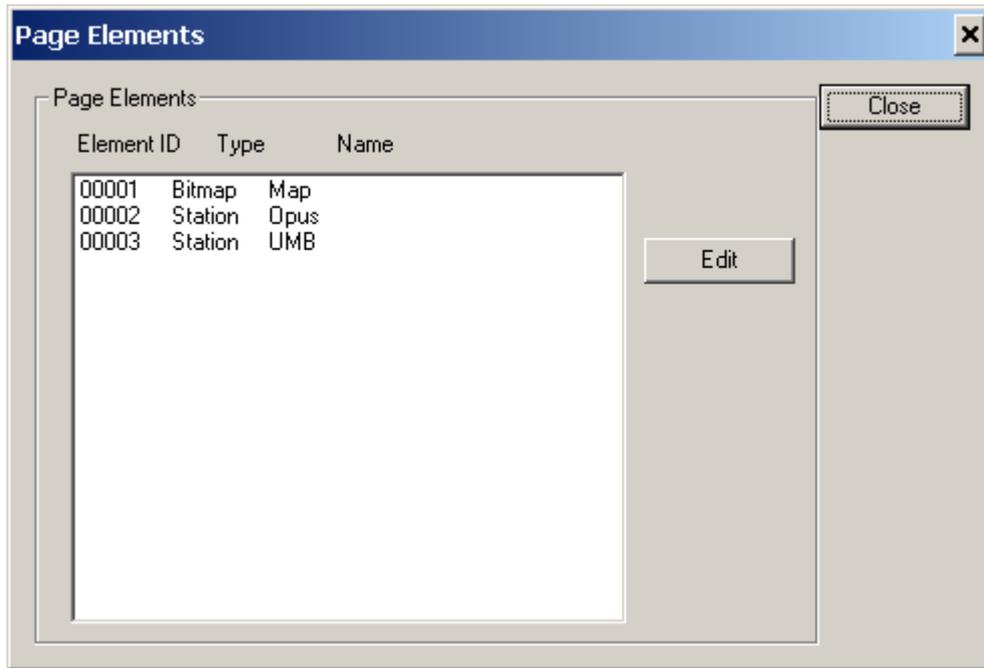
Sensors can be added to a line diagram (up to the “number of sensors per line diagram”; or if the maximum of 4 units per line diagram has been reached). One sensor can be added to a bar diagram or “analog gauge”.

The sequence of the selected sensors can be changed by selecting a sensor and using the “up/down” button.

6.8.9 Page Elements

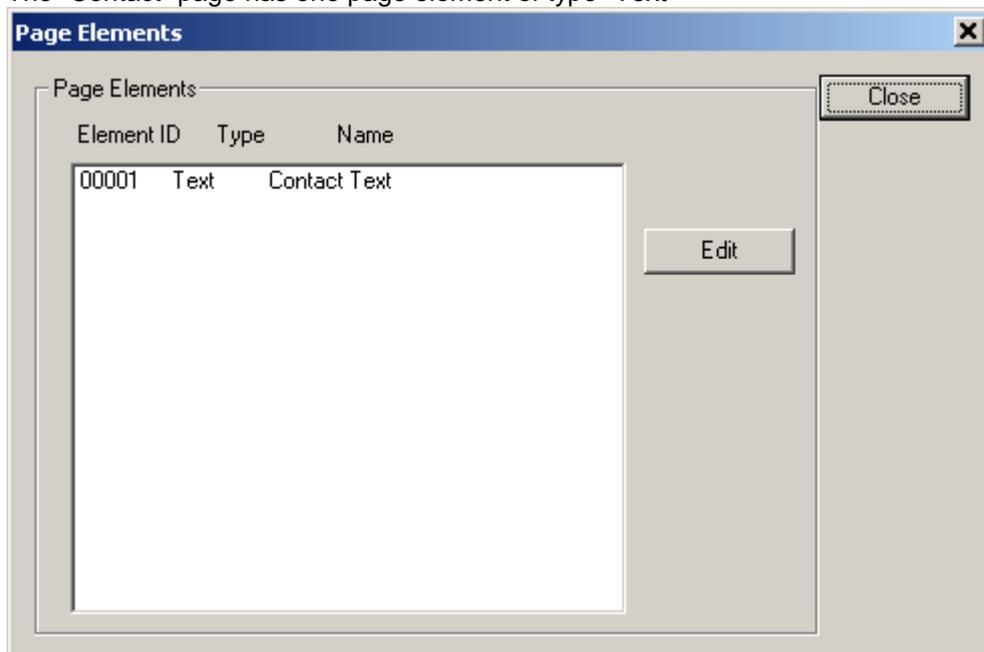
Only “Map”, “Contact”, “Data” and “Station” pages contain page elements.

- The “Map” page has one element of type “Bitmap” and one element of type “Station” for each station.



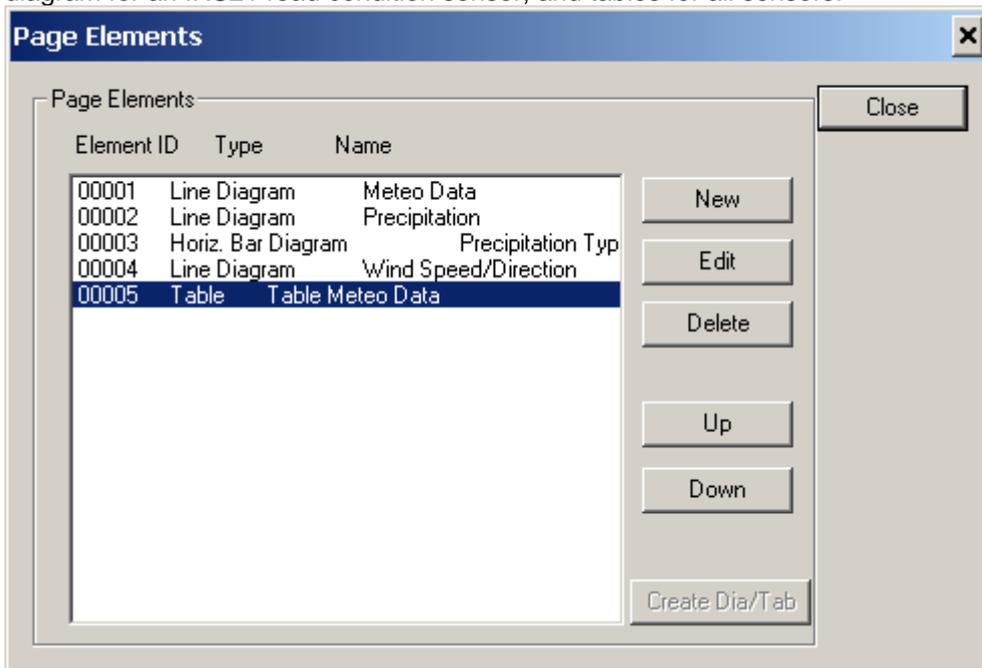
The sensors assigned to the “station” element determine, which sensor values are displayed when you “scroll over” the station icon with the mouse (map display). They determine which sensors (and in which order) are shown on the overview table as well.

- The “Contact” page has one page element of type “Text”

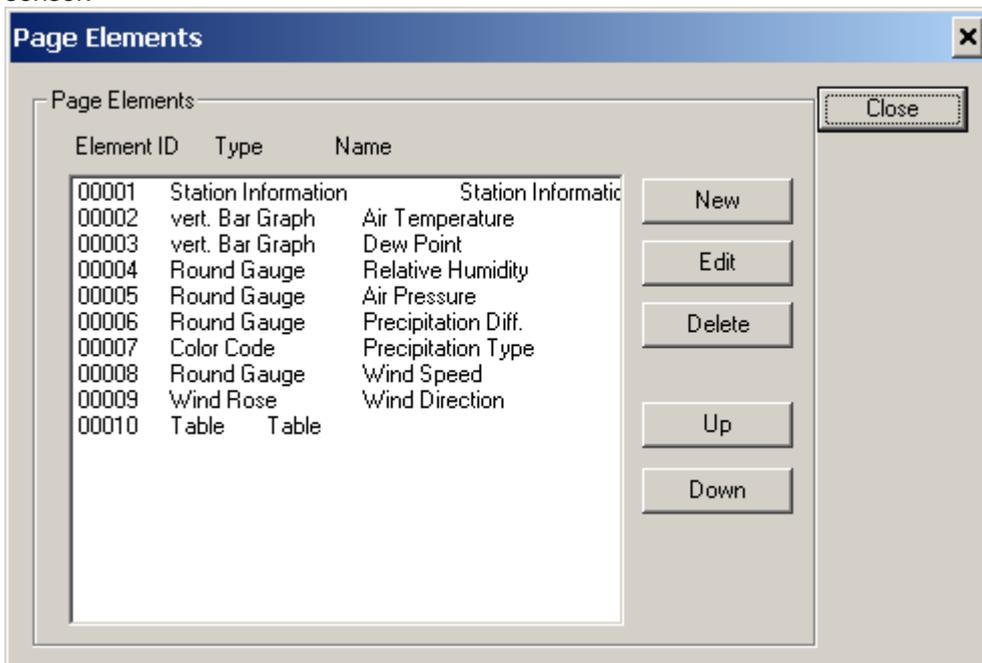


- A “Data” page can have one or more page elements of type “Line Diagram”, “Bar Diagram”, “Table”, “Text” and/or “Report”.
If a data page does not have any page elements, default elements can be created by clicking “Create Dia/Tab”.
This will create line diagrams for all sensors except an IRS21 road condition sensor, a bar

diagram for an IRS21 road condition sensor, and tables for all sensors.



- A “Station” page always contains a page element of type “Station Information”. You can select which station information items to be displayed by editing this page element item.
It also always contains a “Table” element to display the last (current) sensor value for each configured sensor.
It may contain one or more “Report” page elements with specific time intervals (day/month/week).
It may also contain one or more “Text” page elements.
A “Station” page may contain “analog gauge” displays like “Round Gauge”, “vert. Bar Graph”, “Wind Rose”, “Color Code” or “Pictogram” to display the last (current) sensor value for a sensor.



The sequence of the page elements can be changed by selecting an element and using the “up/down” button.

6.8.9.1 Page Element Types

Following page element types exist:

Station Icon:

An Icon for a station (and its sensor channels) on the map page.

Station:

A station and its sensor-channels on a group status page or the “overview” table on a map page.

Bitmap

A bitmap file - used with Site Elements for the site logo, and for the map page for the map.

Line Diagram

A line diagram with up to 4 different Units/Y-Axis (data page only)

Horiz. Bar Diagram (color-bar)

A horizontal bar diagram with different colors depending on the sensor value (data page only)

Table

A table with sensor values (data page only)

Text

A text element (station page, data page, and other/contact page)

File

A file - used for Site Elements CSS file and Javascript File.

Round Gauge

A round gauge display similar to a speedometer.

Compass/°

A compass display to display the wind direction – in °.

Compass/Cardinal

A compass display to display the wind direction – with cardinal points

Vert. Bar Graph

A vertical bar graph similar to a thermometer.

Bar-Graph

A bar graph showing values from different sensor channels for a given timestamp (e.g. for statistical/vehicle data).

Color Code

A color code display where a value is mapped to a color (similar to the horizontal bar diagram).

Pictogram

A pictogram display where a value is mapped to a pictogram.

New Line

A “New Line” page element to separate analog gauges – so the next gauge will be displayed on a new line.

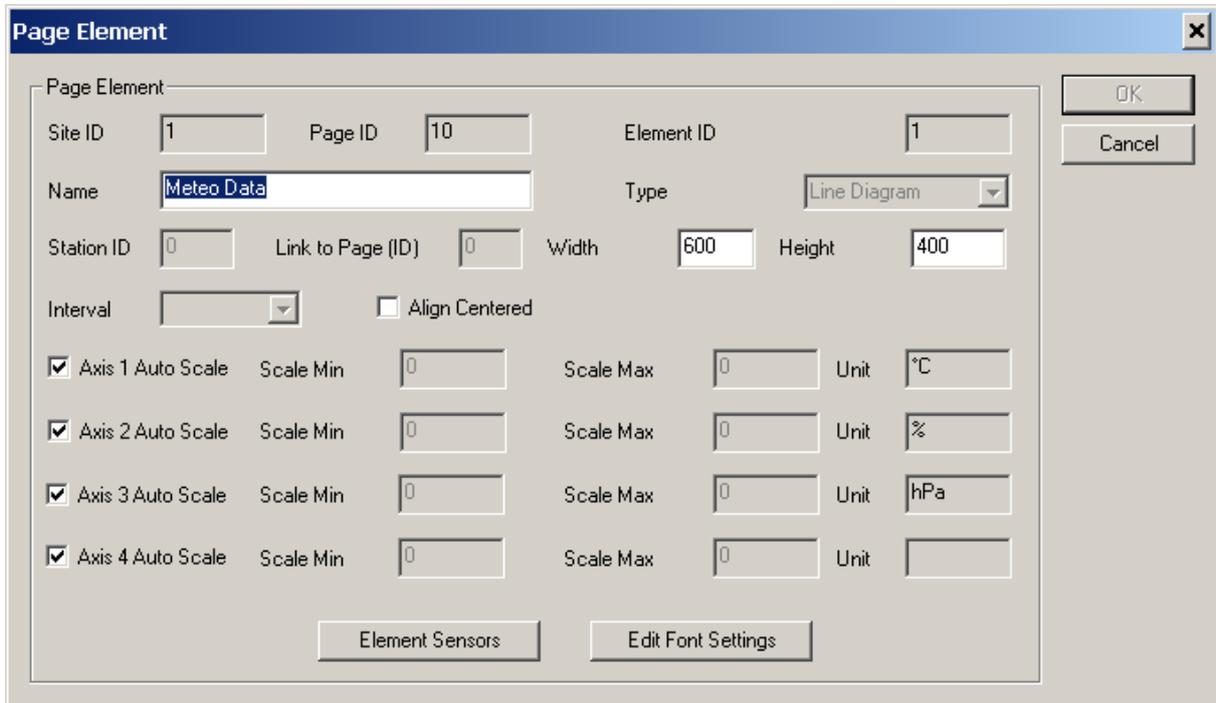
Report

A “Report” page element shows data for the selected sensors for a specified time interval. Report page elements are similar to the “Report” function available per station in SmartView3, see [Chapter Reports](#).

6.8.10 Edit Page Element

Depending on the Page Element Type (see above) the Edit Page Element Dialog shows different input fields :

6.8.10.1 Edit Line Diagram:



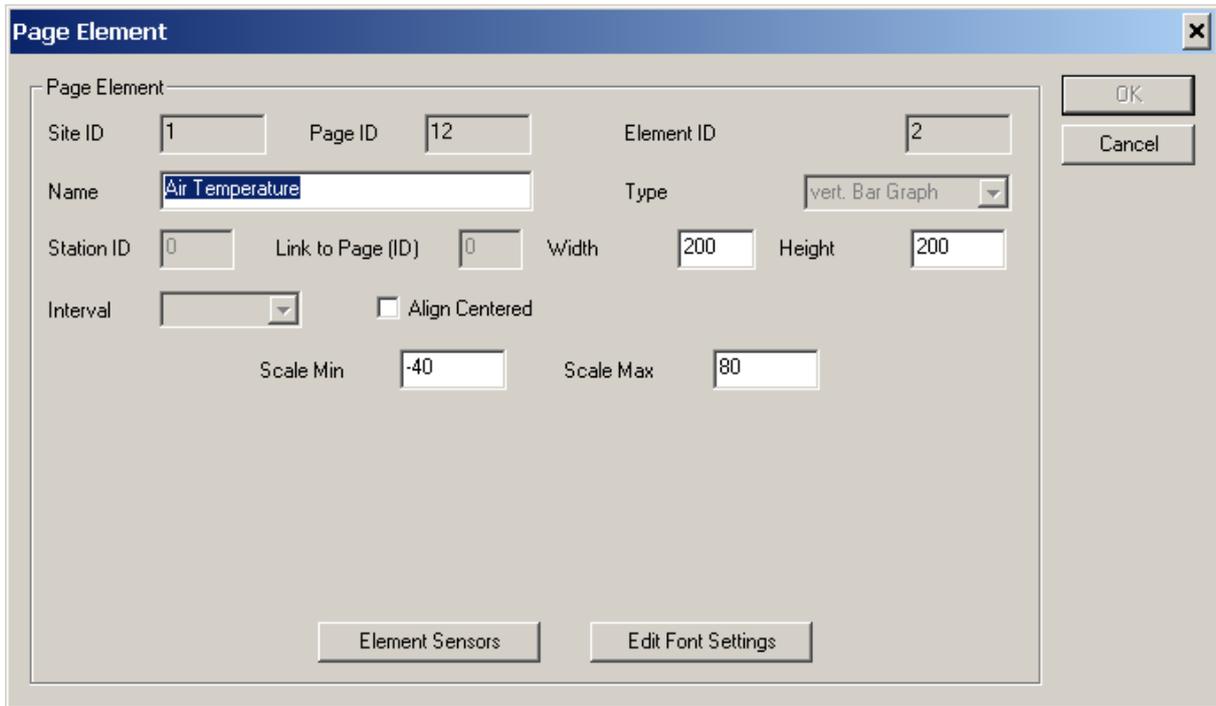
- **Name:** the name of the page element
- **Width:** the width of the element
- **Height:** the height of the element
- **Interval:** data interval for the element (only for “Report” elements on station page).
- **Align Centered:** align element centered on page.
- **Axis x Auto Scale:** Line Diagram only: auto scale diagram to min/max values in interval
- **Scale Min:** if Auto Scale is off, the minimum value for y-axis of the diagram
- **Scale Max:** if Auto Scale is off, the maximum value for y-axis of the diagram
- **Unit:** the unit of the axis of the diagram

Buttons:

- **Element Sensors:** show/edit the element sensors. See [Select Sensor](#)
- **Edit Font Settings:** for diagram/analog gauge only; See “[Edit Font Settings](#)”

Note: for line diagrams on station pages the “interval” can be set to the last 6, 12 or 24 hours.

6.8.10.2 Edit “Round Gauge” or “vert. Bar Graph”,

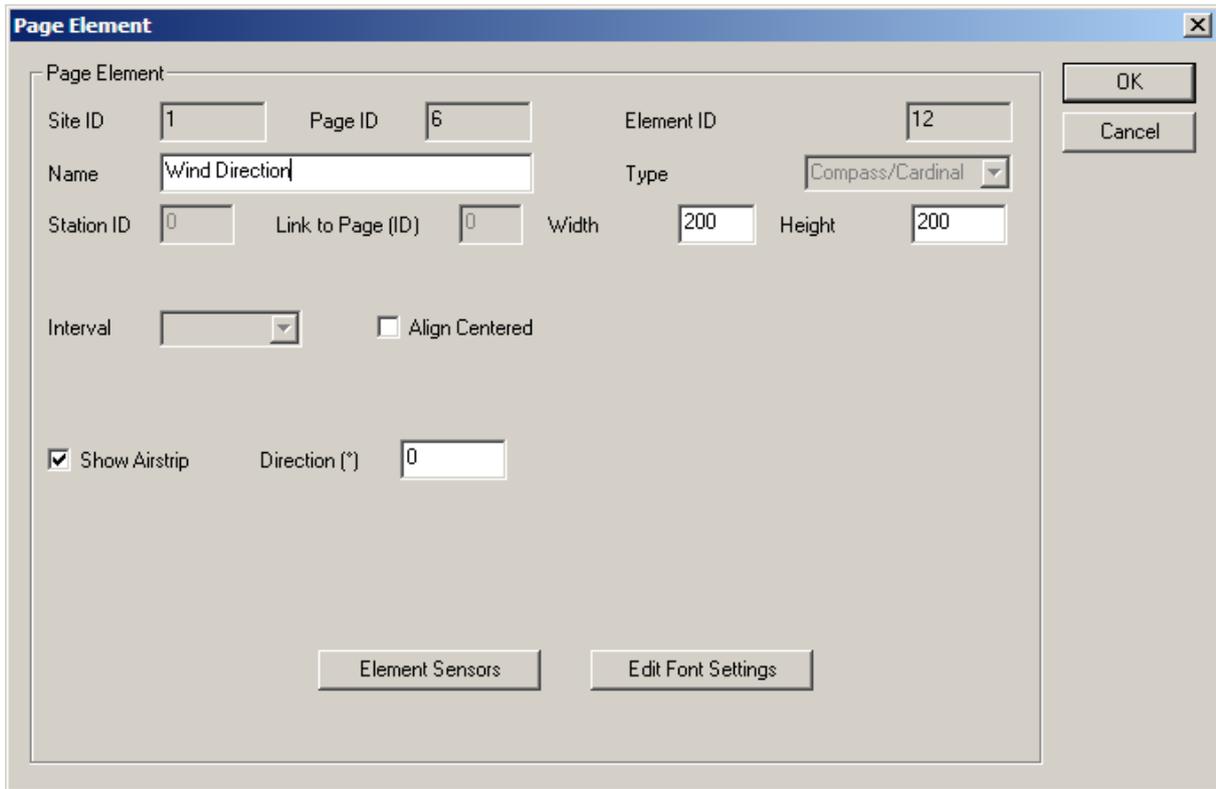


- **Name:** the name of the page element
- **Width:** the width of the element
- **Height:** the height of the element
- **Align Centered:** align element centered on page
- **Scale Min:** the minimum value for the scale of the display
- **Scale Max:** the maximum value for the scale of the display

Buttons:

- **Element Sensors:** show/edit the element sensors. See [Select Sensor](#)
- **Edit Font Settings:** for diagram/analog gauge only; See “[Edit Font Settings](#)”

6.8.10.3 Edit Compass

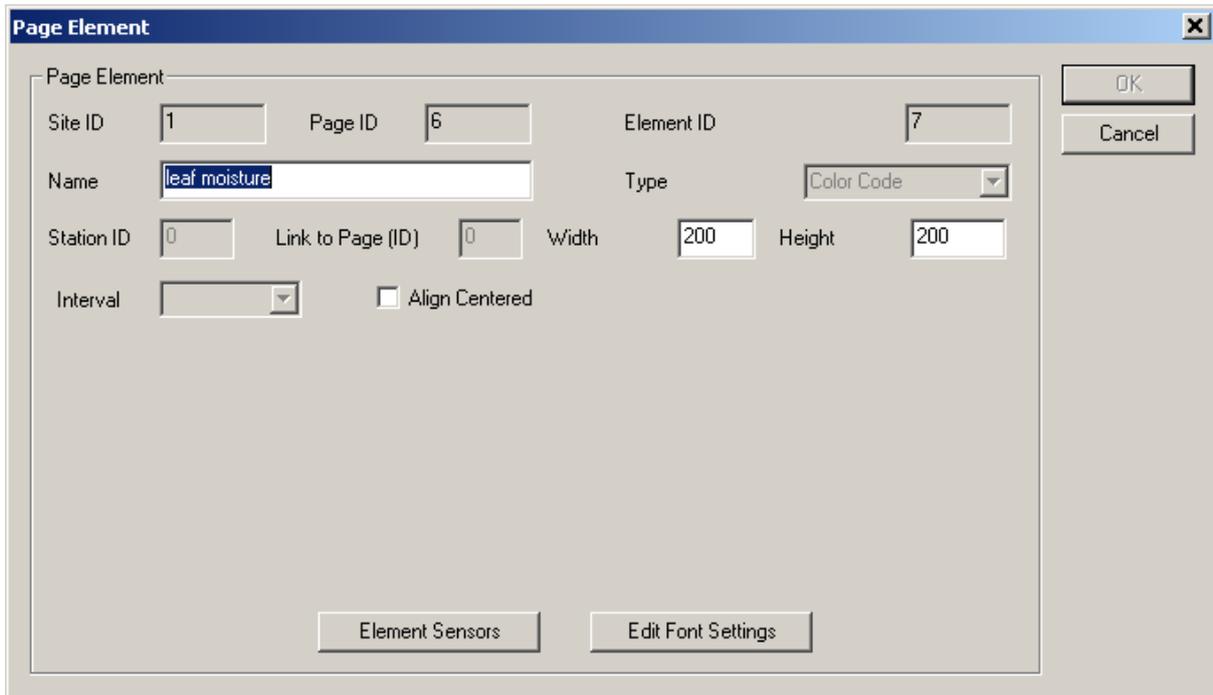


- **Name:** the name of the page element
- **Width:** the width of the element
- **Height:** the height of the element
- **Align Centered:** align element centered on page
- **Show Airstrip:** if this box is checked, an “airstrip” is shown in the center of the compass, aligned in the angle specified as “**Direction**”.

Buttons:

- **Element Sensors:** show/edit the element sensors. See [Select Sensor](#)
- **Edit Font Settings:** for diagram/analog gauge only; See “[Edit Font Settings](#)”

6.8.10.4 Edit vert. Bar Diagram, Color Code or Pictogram



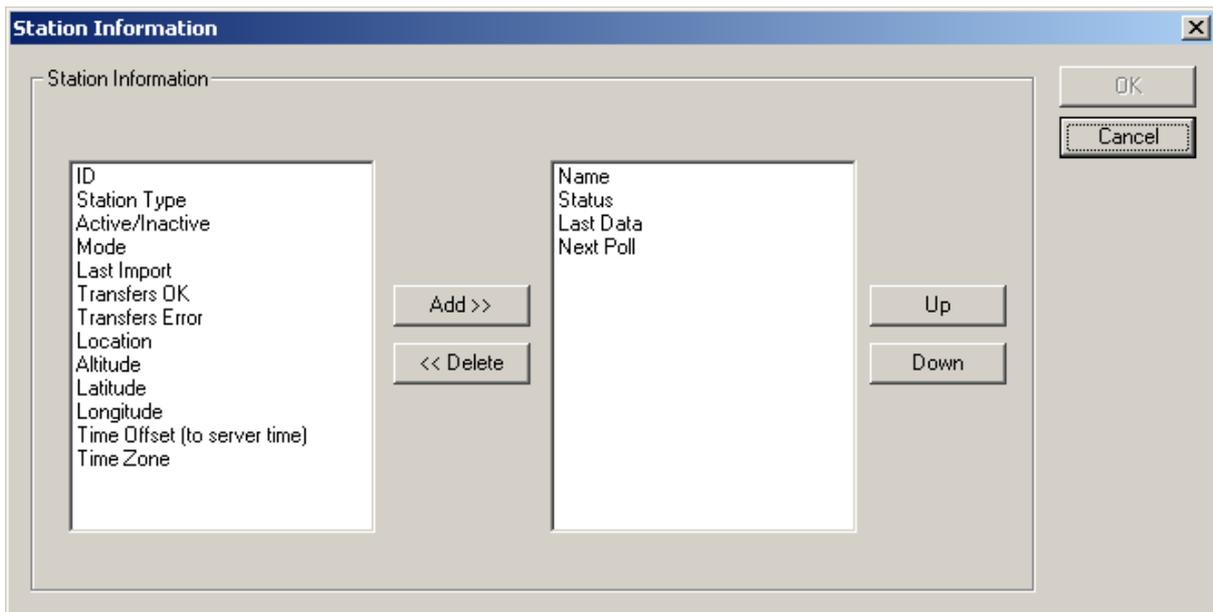
- **Name:** the name of the page element
- **Width:** the width of the element
- **Height:** the height of the element
- **Align Centered:** align element centered on page

Buttons:

- **Element Sensors:** show/edit the element sensors. See [Select Sensor](#)
- **Edit Font Settings:** for diagram/analog gauge only; See [Edit Font Settings](#)

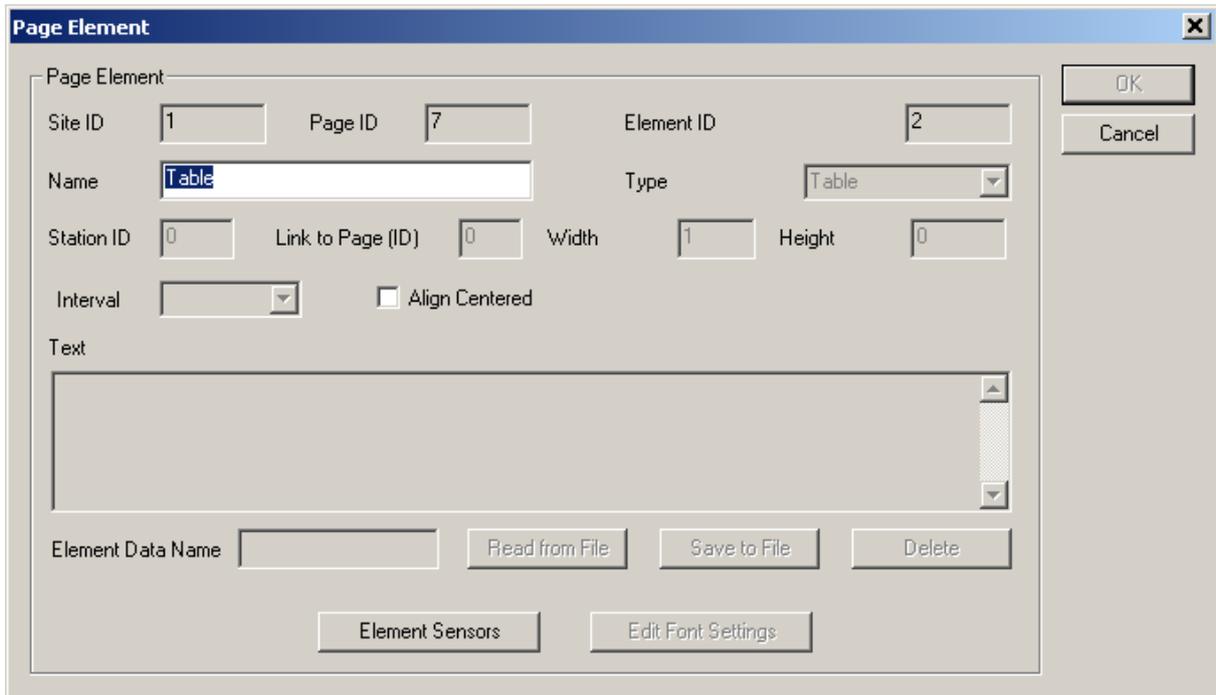
Note: to assign specific colors and/or pictograms to values for these diagram types, [Status Mapping](#) must be configured for the “Element Sensor” of this diagram.

6.8.10.5 Edit “Station Information”



Select which station information is included in the station information table on the station page. For NTCIP stations, the additional elements “NTCIP station meta data” and “NTCIP module table” can be selected.

6.8.10.6 Edit "Table":



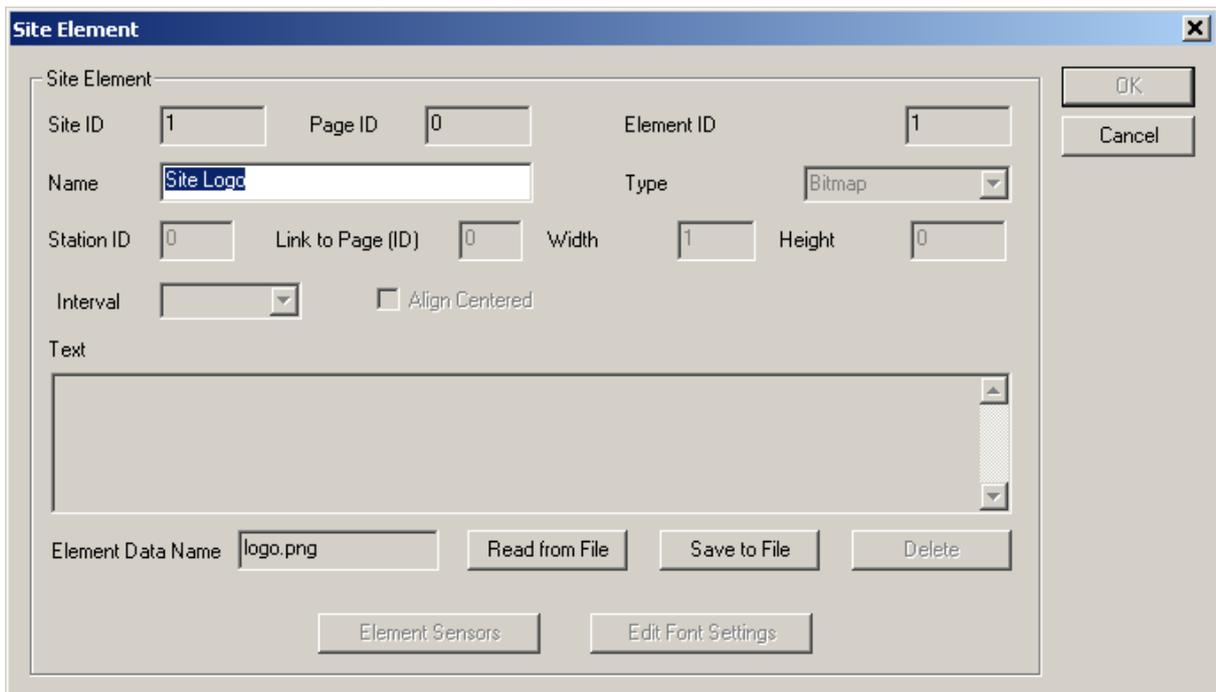
- **Name:** the name for the table
- **Align Centered:** align element centered on page

Buttons:

- **Element Sensors:** show/edit the element sensors. See [Select Sensor](#)

Note: to display a descriptive text for a value, [Status Mapping](#) may be configured for the "Element Sensor" in a table.

6.8.10.7 Edit Bitmap (Icons/Logo):



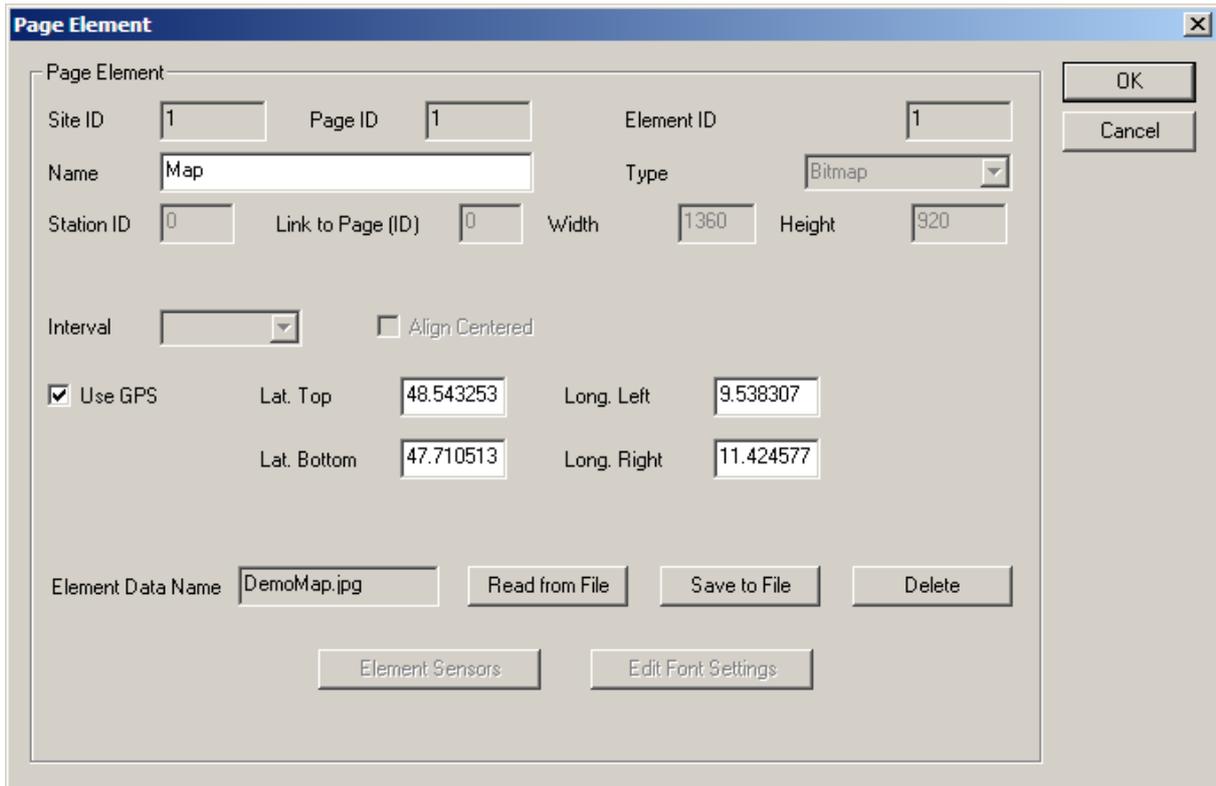
- **Text:** (Text element only) Text for the element - may contain any valid html tags

- **Element Data Name:** Bitmap and File only - the file name

Buttons:

- **Read from File:** read Bitmap or File from hard disc
- **Save to file:** save Bitmap or File to hard disc
- **Delete:** delete the data (file)

6.8.10.8 *Edit Bitmap (Map on Map Page)*

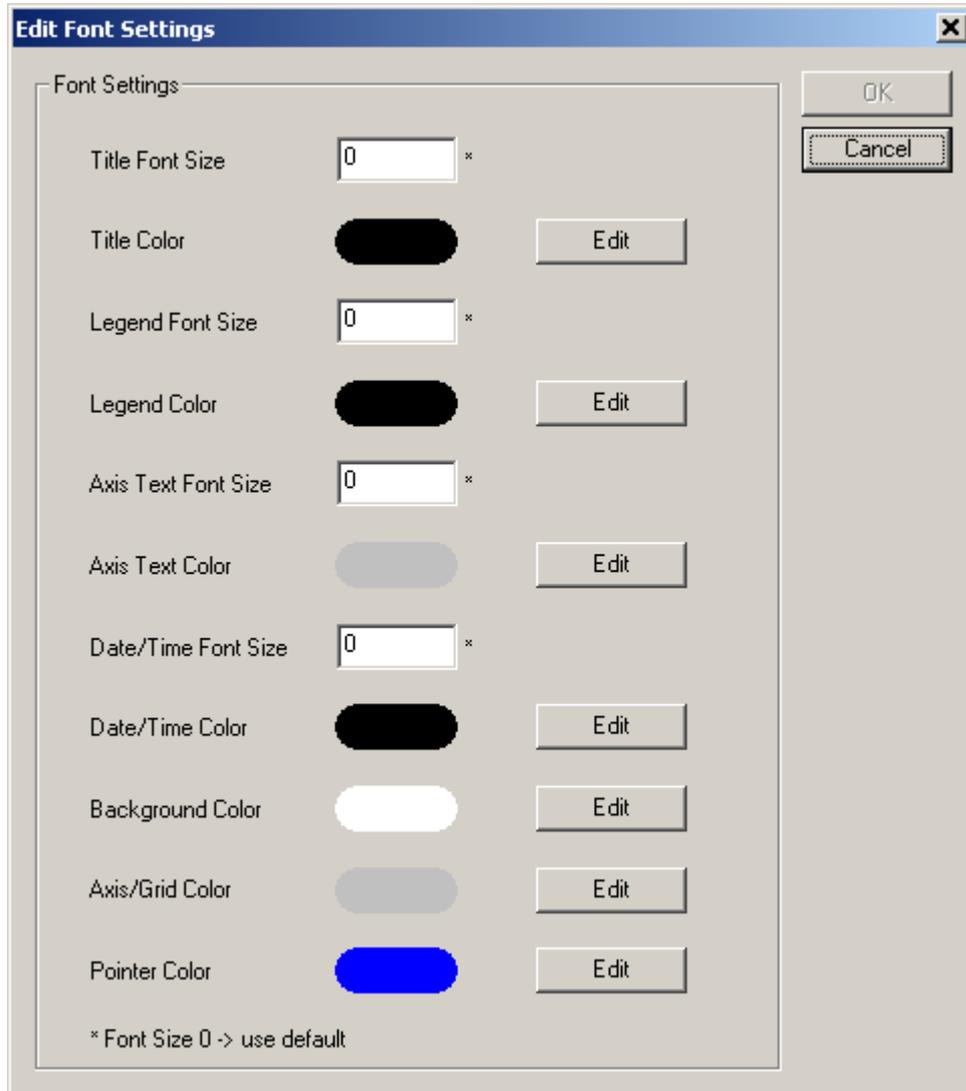


On map pages, following attributes can be set for the bitmap:

- **Use GPS:** if active, the GPS coordinates for a station (Latitude/Longitude) are used to position the station icon on the map instead of manually placing the station icon using the [Edit Map](#) dialog. When active, the GPS Coordinates for the top left and bottom right corner of the map need to be configured below.
- **Lat Top:** Latitude for top of the map (top left corner)
- **Long Left:** Longitude for left side of the map (top left corner)
- **Lat. Bottom:** Latitude for the bottom of the map (bottom right corner)
- **Long. Right:** Longitude for the right hand side of the map (bottom right corner)

6.8.11 Edit Font Settings

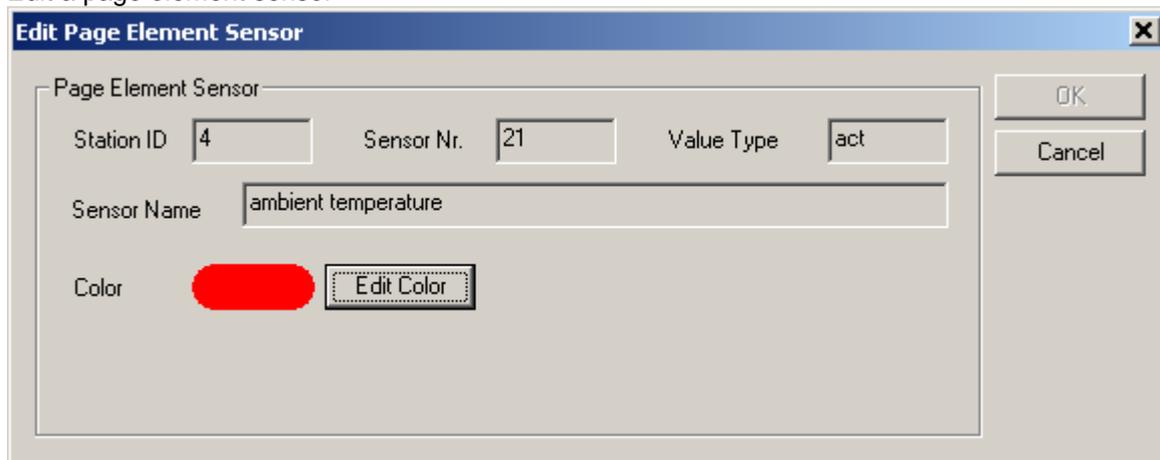
This dialog allows configuration of font and color settings for diagrams.



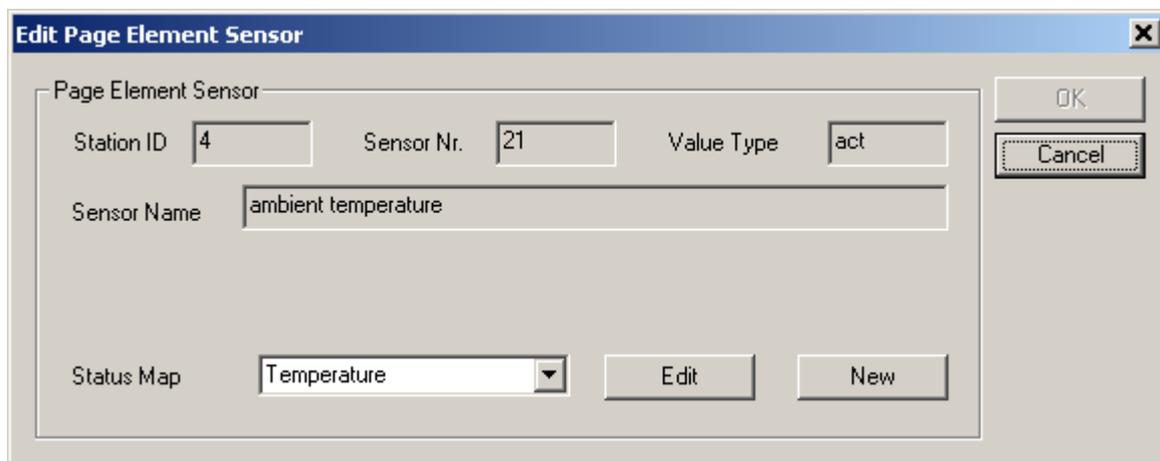
- **Title Font Size:** the size for the title text. 0 = use default size. For “analog gauge” diagrams the default size is calculated depending on the size (height) of the diagram.
- **Title Color:** the color for the title text.
- **Legend/Value Font Size:** for “Line Diagrams” and “horiz. Bar Diagrams”: the size of the font used for the diagram legend text. For “analog gauge” diagrams the size of the font used for the value text.
- **Legend/Value Color:** the color for the legend or value text.
- **Axis Text Font Size:** the size for the axis (line diagram) or scale (analog gauge) text.
- **Axis Text Color:** the color for the axis (line diagram) or scale (analog gauge) text.
- **Date/Time Font Size:** the size for the date/time range (line and vert. bar diagram) or date/time (analog gauge) text.
- **Date/Time Color:** the color for the date/time range (line and vert. bar diagram) or date/time (analog gauge) text.
- **Background Color:** the background color for the diagram.
- **Axis/Grid Color:** the color used to draw the grid or scale for the diagram or gauge.
- **Pointer Color:** the color used to draw the pointer of an analog gauge.

6.8.12 Edit Page Element Sensor

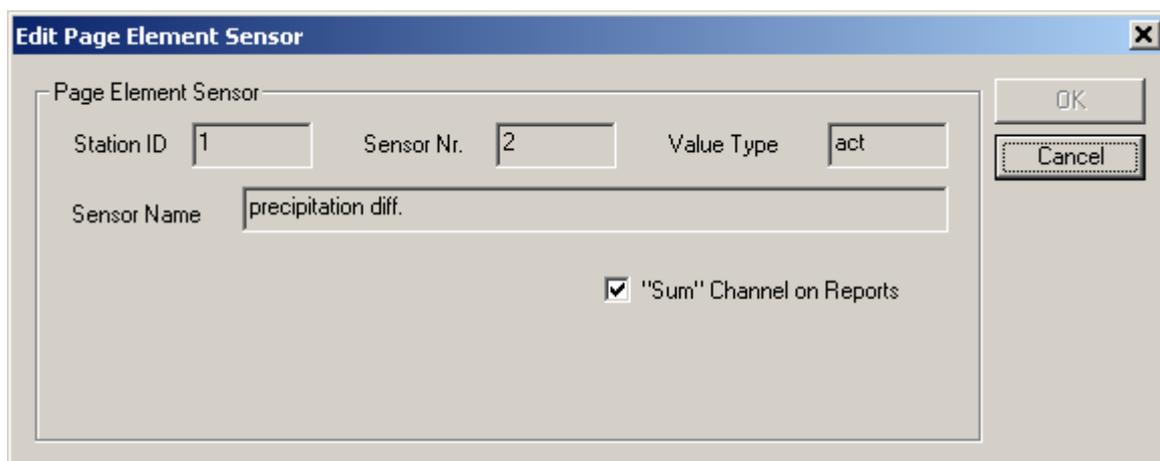
Edit a page element sensor



For a line diagram sensor the color of the curve in the line diagram can be specified.



For a “horizontal bar diagram“, “color code“, “table” or “pictogram”, “[status mapping](#)” is used to specify which color/text/pictogram is assigned to a specific sensor value.



For “reports” a sensor/channel can be configured to show sum values instead of average values.

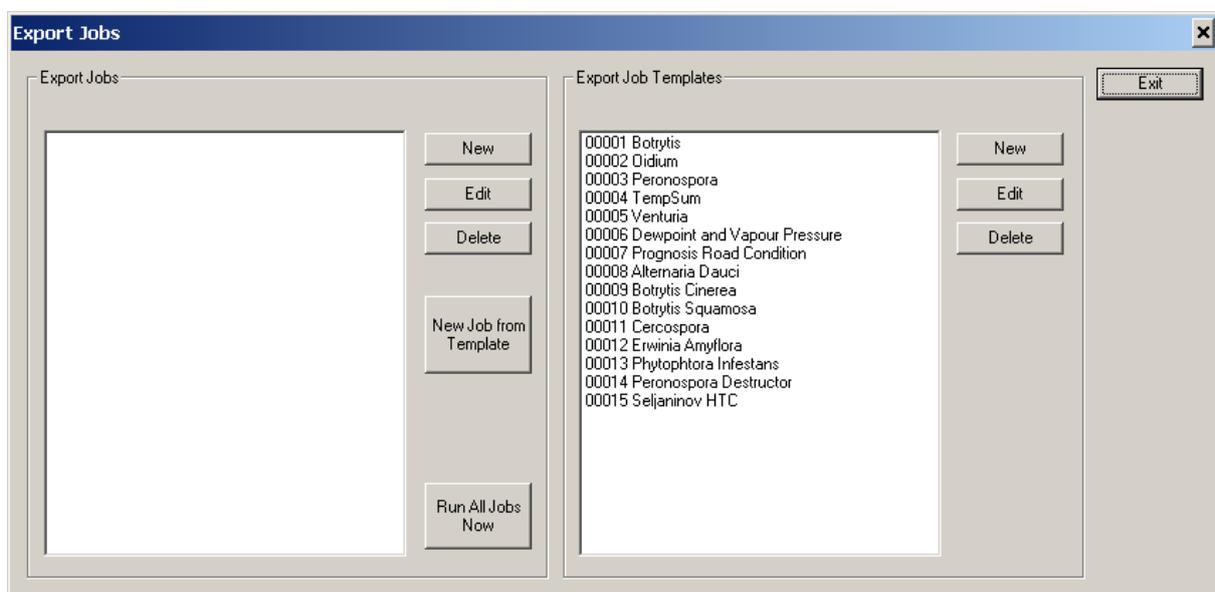
7 Configure Export/Import

Export/Import tasks are configured as “Export Jobs” in SmartView3. There are “manual” Export/Import jobs, or Export/Import jobs that are processed automatically.

The difference between “manual” and “automatic” is, that “manual” jobs are processed within SmartView3, and only run when you select the job from the list of manual jobs via “file->export/import” in Smartview3, and click the “Run Job” button. All paths (for export file, import file, or external programs) refer to the PC where you run SmartView3.

“Automatic” Export/Import jobs are configured in SmartView3 via “Edit->Export/Import”, and are processed by the SmartCom program – so all paths (for filenames or programs) refer to the PC where SmartCom runs – which could be different from the PC where you run SmartView3. “Automatic” Export/Import jobs are run “as configured”, e.g. every day or week or month etc. (see below).

If you click “Export/Import” from the “Edit” menu (or “Manual Export/Import” from the “File” menu), the following dialog is shown:



On the right side, template export jobs are shown. There are pre-defined template export/import jobs for the plant disease model calculations available from Lufft. You can create your own Export Job Templates.

Export Job Templates use “logical” sensor types instead of “real” station sensors. All other attributes for a template job are the same as for a “real” export/import job.

You can either create a new export job “from scratch”, or you can create a new job using a template job.

7.1 Create an Export/Import job using a Template Job

If you want to use a template job, select the template job to be used on the right side, and click “New Job From Template”.

A dialog to select the station for the new job is displayed. If you plan to export data from multiple stations in one job, you will need to manually configure the job “from scratch”.

If not all sensors of the station have a logical sensor type assigned, a dialog to assign the logical sensor types is shown:

Please Assign UNIQUE (logical) Sensor Types

Edit (log.) Sensor Types

temperature [act] °C	[2] Air Temperature
dewpoint [act] °C	[5] Dew Point
relative humidity [act] %	[10] Relative Humidity
abs. air pressure [act] hPa	[30] Air Pressure
wind speed [act] m/s	[19] Wind Speed
wind direction [act] °	[18] Wind Direction
precipitation diff. [act] l/m ²	[24] Precipitation Diff.
precipitation absol. [act] mm	[23] Precipitation Abs.
precipitation type [act] logic	[25] Precipitation Type
precipitat.intensity [act] l/m ² /h	[26] Precipitation Intensity
Precipitation Diff [calc] mm	[24] Precipitation Diff.

OK Cancel

Then a dialog to assign the station sensors to the template job is shown:

Assign Station Sensors to Template

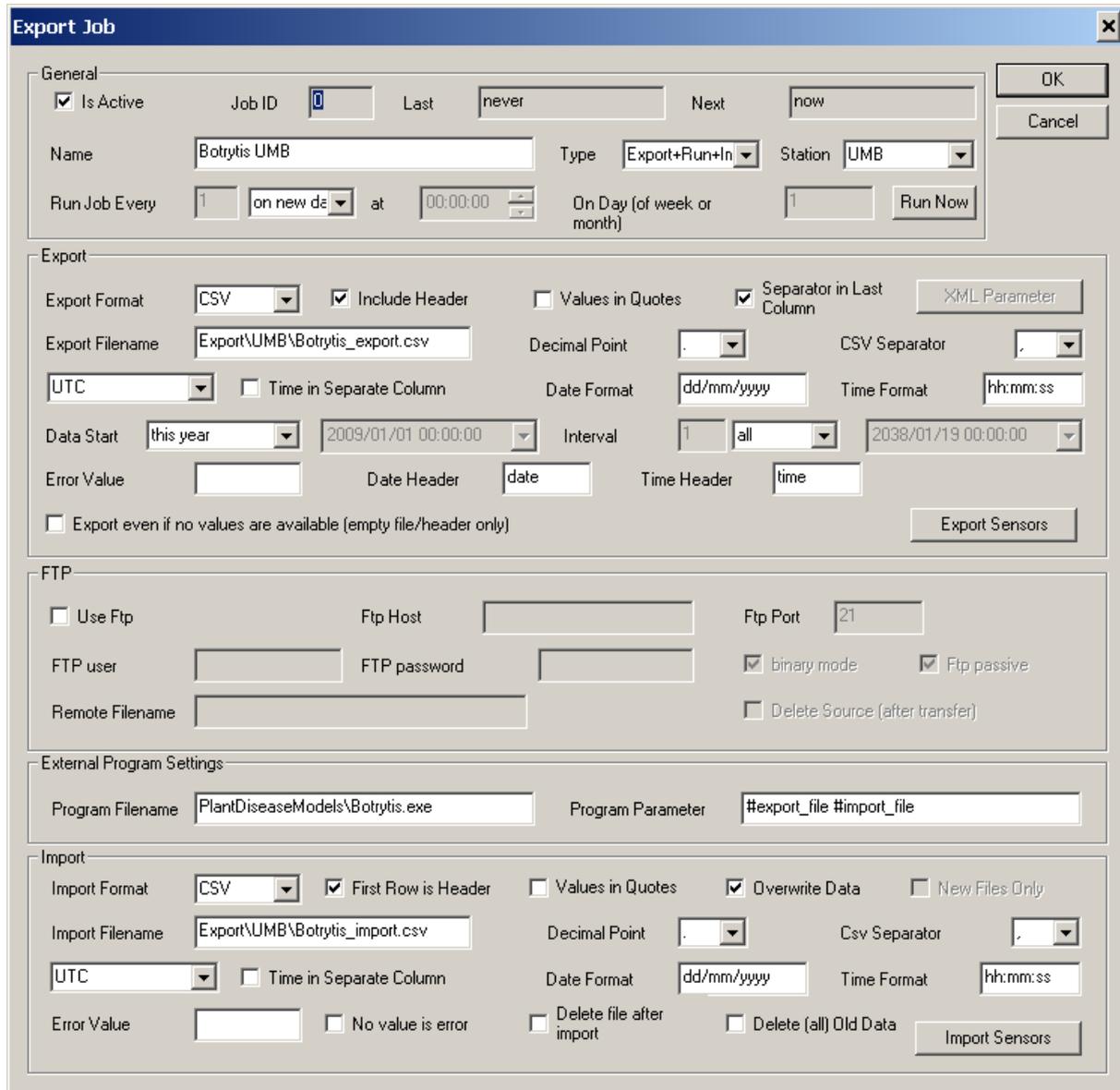
Air Temperature [temp_air] °C	Sensor Nr: 424 temperature °C act
Ground Temperature 1 [temp_ground] °C	No Sensor Assigned
Relative Humidity [rel_humidity] %	Sensor Nr: 440 relative humidity % act
Precipitation Diff. [precipitations] l/m ²	Sensor Nr: 479 precipitation diff. l/m ² act
Leaf Wetness [leaf_moisture]	No Sensor Assigned
Wind Direction [wind_direction] °	Sensor Nr: 472 wind direction ° act
Wind Speed [wind_speed] km/h	Sensor Nr: 460 wind speed m/s act
Solar Radiation [daylight] W/m ²	No Sensor Assigned
Botrytis Sporulation	Create Sensor
Botrytis Infection	Create Sensor

OK Cancel

If (which usually is the case) there are no appropriate import sensors for the station available, the sensors will be created. For the pre-defined job templates (the plant disease models), this will be done completely automatically.

The resulting export job is shown next, and can be customized if needed.

Note: if you plan to use the plant disease models provided by Lufft, you need to place them in a folder “PlantDiseaseModels” below the program folder, or you will have to change the path for the “Program Filename” of the template job (or the resulting job) accordingly.



Export Job

General

Is Active Job ID: Last: Next:

Name: Type: Station:

Run Job Every: on new day at On Day (of week or month):

Export

Export Format: Include Header Values in Quotes Separator in Last Column XML Parameter

Export Filename: Decimal Point: CSV Separator:

 Time in Separate Column Date Format: Time Format:

Data Start: Interval:

Error Value: Date Header: Time Header:

Export even if no values are available (empty file/header only)

FTP

Use Ftp Ftp Host: Ftp Port:

FTP user: FTP password: binary mode Ftp passive

Remote Filename: Delete Source (after transfer)

External Program Settings

Program Filename: Program Parameter:

Import

Import Format: First Row is Header Values in Quotes Overwrite Data New Files Only

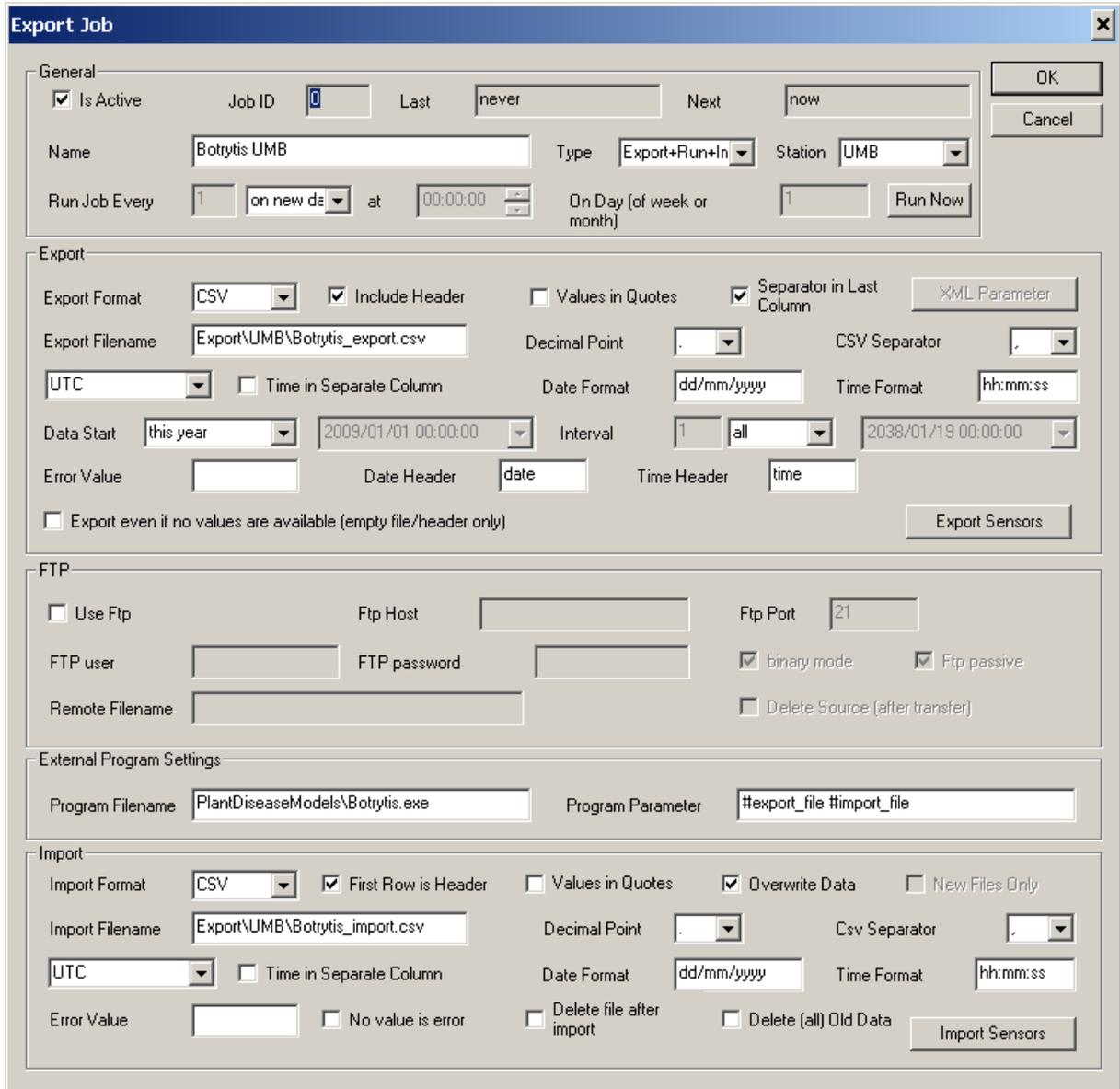
Import Filename: Decimal Point: Csv Separator:

 Time in Separate Column Date Format: Time Format:

Error Value: No value is error Delete file after import Delete (all) Old Data

Details of this dialog are described in the next chapter.

7.2 Export Job Dialog



General parameter:

- ➔ Is Active: the Export/Import job is active (or not active).
- ➔ Name: a name for this job
- ➔ Type : type of job; can be “Export”, “Export+Run”, “Export+Run+Import”, “Run+Import”, “Import”, “Run”, “FTP”, “Export+Import” or “Run (external export)”
 - Export:** data for the specified “Export Sensors” (see below) are exported in either .csv or .xml format.
 - Export+Run:** data is exported, and an external program is called.
 - Import:** data for the specified “Import Sensors” (see below) are imported from a file in .csv format
 - Export+Run+Import:** data is exported in .csv format, an external program (e.g. to calculate forecasts or “derived sensor values”) is run (which writes its result into a new file in .csv format), and the resulting data is imported (from the .csv file the external program wrote).
 - Run+Import:** the external program is called, and then the specified file(s) is/are imported
 - Import:** the specified file is imported. The filename may contain “wildcard” characters “*” or “?”, e.g. “C:\Import*.csv”
 - Import:** the specified file(s) is/are imported. The filename may contain “wildcard” characters

“*” or “?” , e.g. “C:\Import*.csv”

Run: the specified program is executed (no export or import is done)

FTP: the specified file(s) is/are downloaded from the server to the location specified as “import filename”. No export or import is done. The filename may contain “wildcard” characters “*” or “?”.

Export+Import: data is exported to and imported from the specified file name. No program is called in between export and import. May be used to scale/change sensor values and re-import the values as a different sensor (e.g. scale generic mV or mA sensor value to a specific sensor with proper name/unit etc.).

Run (external export): the specified external program is run. Export sensor can be configured, but no export file is written. The external program is responsible for reading the appropriate sensor values from the database itself (used for custom specific export functions, e.g. export via SOAP client).

Cam Picture: export (and transfer via FTP) cam pictures (a cam station has to be assigned to the job).

- ➔ **Station:** the station associated with this export job. If a station is selected, only sensors from this station can be selected as “export” or “import” sensors. If no station is selected, sensors from all stations can be used in export and import in this job.
- ➔ **Run Job Every / at / on day** (of week or month) : for “automatic” jobs only, you can specify the interval the job is run (e.g. every hour, every week etc). For “manual” jobs, this input fields are disabled
- ➔ **Run Now:** clicking this button will reset the “next run” time to now.

Export Settings :

- ➔ **Export Format:** CSV, XML or TLS trace file
- ➔ **Include header:** write a line with column names as first line of the export file
- ➔ **Values in quotes:** (CSV only) put all values in quotes (“...”)
- ➔ **Separator in last column:** (CSV only) write a separator character at the end of the last column
- ➔ **XML Parameter:** (XML only) displays a dialog to configure the XML output format (see below)
- ➔ **Export filename:** name of the export file. The name may include the tags (see note below) which will be replaced by the actual date when the job is run, or (for cam picture exports) by the time the picture was transferred.
- ➔ **Decimal point:** (CSV only) – the character to be used as decimal point in numbers (“.” or “,”)
- ➔ **CSV separator:** (CSV only) – the character to be used as separator between columns (“,” “;” or “TAB”)
- ➔ **UTC/ Local Time (no DST offset) / Local Time (with DST offset):** Timezone information used for timestamps in export.
- ➔ **Time in separate column:** (CSV only) use separate columns for date and time in export file
- ➔ **Date format:** (CSV only) format string for date. yyyy = 4 digit year, yy = 2 digit year, mm = month, dd=day – or “special format” **UTC-TIMESTAMP** -> date/time is an UTC-Timestamp (integer value).
- ➔ **Time format:** (CSV only) format string for time. hh=hour, mm=minute, ss=second
- ➔ **Data start:** start time of data in export : first available, last_hour, yesterday, last week, last month, last year....or fixed start date/time
- ➔ **Interval:** the time interval of data to be exported : hour/day/week/month/year/all or fixed end date/time
- ➔ **Error value:** string to be used to indicate an error value
- ➔ **Date header:** header for date column
- ➔ **Time header:** header for time column
- ➔ **Export Sensors:** opens a dialog to configure the sensors to be exported

FTP:

- ➔ **Use ftp:** for jobs of type “Export” or “Export+Import”, the export file will be transferred to a server using ftp after the export file has been written. For jobs of type “Import” the import file will be transferred from a server using ftp before it is processed.
- ➔ **Ftp host:** DNS name or IP address of ftp server
- ➔ **Ftp port:** port to be used for ftp (default : 21)
- ➔ **Ftp user:** ftp user name
- ➔ **Ftp password:** password for ftp user

- ➔ **Binary mode:** transfer file as binary
- ➔ **Passive mode:** use ftp passive mode
- ➔ **Remote filename:** name of file on ftp server. The filename may contain tags (see below).
- ➔ **Delete Source (after transfer):** delete the source file after it has been transferred successfully

External Program Settings

- ➔ **Program filename:** name of the external program (including path)
- ➔ **Program parameter:** parameter to be used for the external program. The special tags “#export_file” and “#import_file” will be replaced by the name of the export or import file respectively

Import

- ➔ **Import format:** only CSV is supported as import format at the moment
- ➔ **First row is header:** the first row in the import file contains a header (e.g. with column names).
- ➔ **Values in quotes:** the values in the import file are in quotes
- ➔ **Overwrite data:** if this checkbox is checked, new imported data will overwrite data for the same time that is already stored in the database.
- ➔ **New Files Only:** only import files that have a “last modified” timestamp newer than the timestamp this job was run last.
- ➔ **Import filename:** name of the import file. The name may include the tags (see note below) which will be replaced by the actual timestamp when the job is run.
Note: for Jobs type “Import”, “Run+Import”, wildcards are supported in the filename. For jobs type “FTP” the value of “import filename” only indicates the folder where the files are to be transferred to – please use in this case an appropriate folder name (e.g. c:\download*.*)
- ➔ **Decimal point:** the character used in the import file as decimal point (“.” or “,”)
- ➔ **Csv separator:** the character used in the import file as csv separator (“,” or “;” or “TAB”).
- ➔ **UTC/ Local Time (no DST offset) / Local Time (with DST offset):** Timezone information used for timestamps when data is imported (timestamps are always converted to UTC when stored in database).
- ➔ **Time in separate column:** date and time are separated (by a csv separator character) in the import file
- ➔ **Date format:** (CSV only) format string for date. yyyy = 4 digit year, yy = 2 digit year, mm = month, dd=day – or “special format” **UTC-TIMESTAMP** -> date/time is an UTC-Timestamp (integer value).
- ➔ **Time format:** (CSV only) format string for time. hh=hour, mm=minute, ss=second
- ➔ **Error value:** string that is used to indicate an error value
- ➔ **No value is error:** if there is no value for a sensor (column) for a given time in the import file, it is treated as an error value.
- ➔ **Delete file after import:** delete the import file after it has been successfully imported.
- ➔ **Delete (all) Old Data:** delete all values for import sensors before writing new values to database (for prognosis/forecast import).
- ➔ **Import Sensors:** opens a dialog to configure the sensors to be imported (see below).

Note: the first column in an import file must always be the date (in the format specified). If date and time are in a single import column, the date/time string must always start with the date string. If date and time are in separate columns, the first column must be the date column, and the second column must be the time column.

Note: following tags in export filenames and ftp remote file names are supported (and will be replaced by the appropriate values when the job is run – in these examples 2011/10/12 13:45:30)

<timestamp> : timestamp in format yyyyymmddhhmmss, e.g. 20111012134530

<date>: date in format yyyyymmdd, e.g. 20111012

<year>: year in format yyyy, e.g. 2011

<month>: month in format mm, e.g. 10

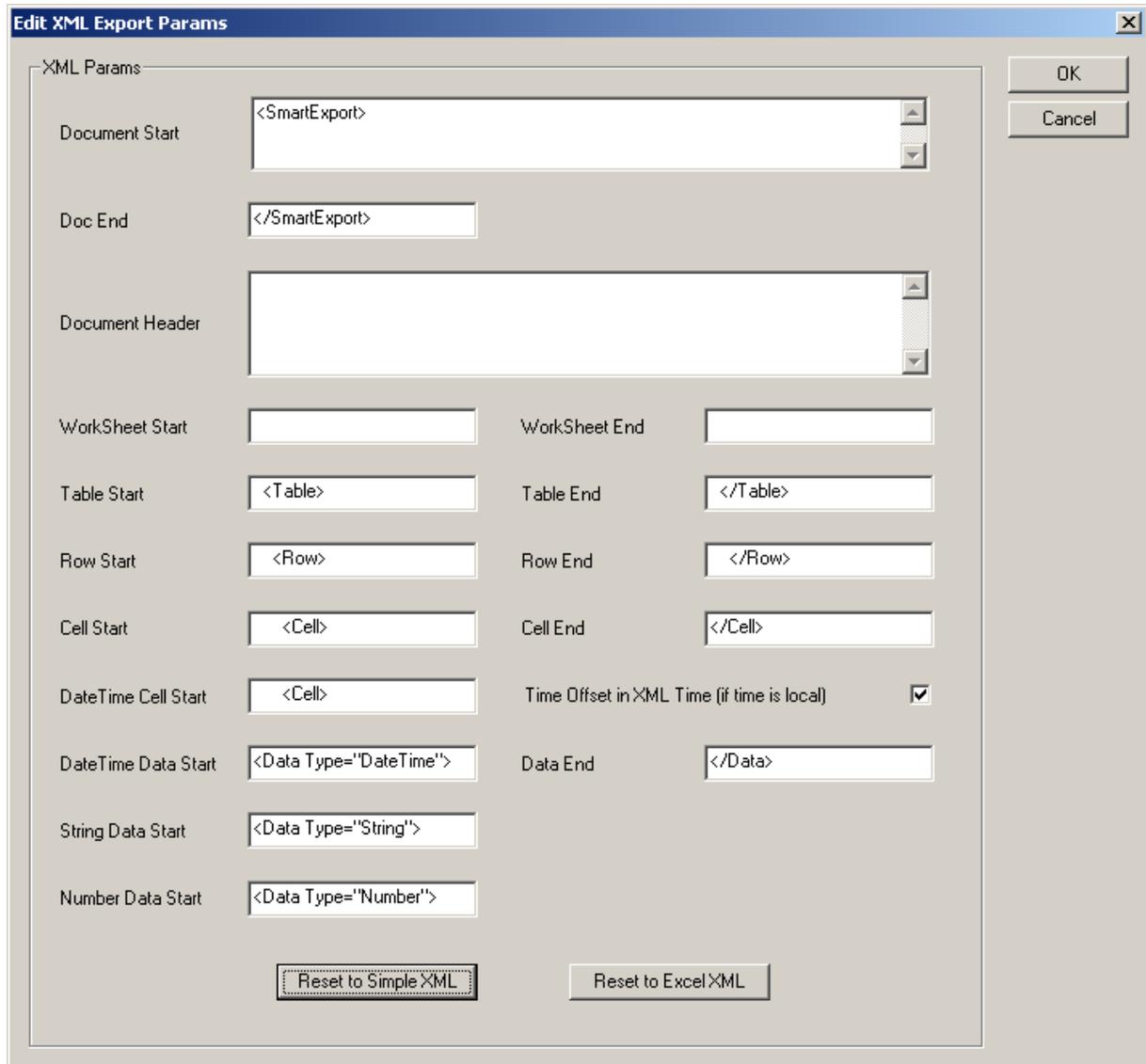
<day>: day of month in format dd, e.g. 12

<hour>: hour of the day in format hh, e.g. 13

<min>: minute in format mm, e.g. 45

<sec>: second in format ss, e.g. 30

7.3 XML Parameter Dialog



This dialog allows to configure the XML output format for XML Export. The exported XML document always has the following structure :

- XML Header (fixed)
 - **Document Start**
 - **Document Header** (if specified) – must be a valid XML construct
 - **WorkSheet Start** (if specified)
 - **Table Start** (if specified)
 - **Row Start**
 - **DateTime Cell Start – DateTime Data Start - Data End – Cell End**
 - or
 - **Cell Start – String/Number Data Start – Data End – Cell End**
 - **Row End**
 - **Table End** (if specified)
 - **WorkSheet End** (if specified)
- **Document End**

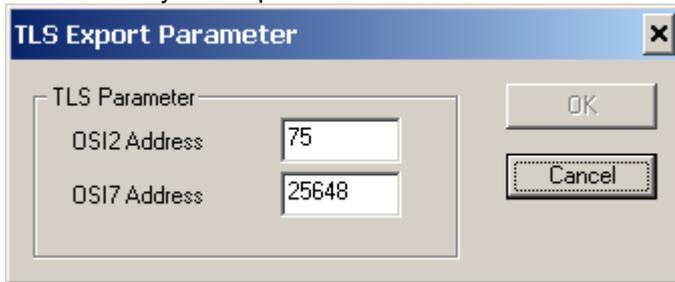
The “Time Offset in XML Time” option controls, if the XML formatted date/time will include the time offset to local time (if Time is local is configured for the Export Job) as specified by the XML standard, or not. Note: Microsoft Excel does not support the time offset in the XML Date Time string.

Reset to Simple XML : will set all XML tags to produce a simple XML output

Reset to Excel XML : will set all XML tags so the XML file can be imported to Microsoft Excel

7.4 TLS Parameter

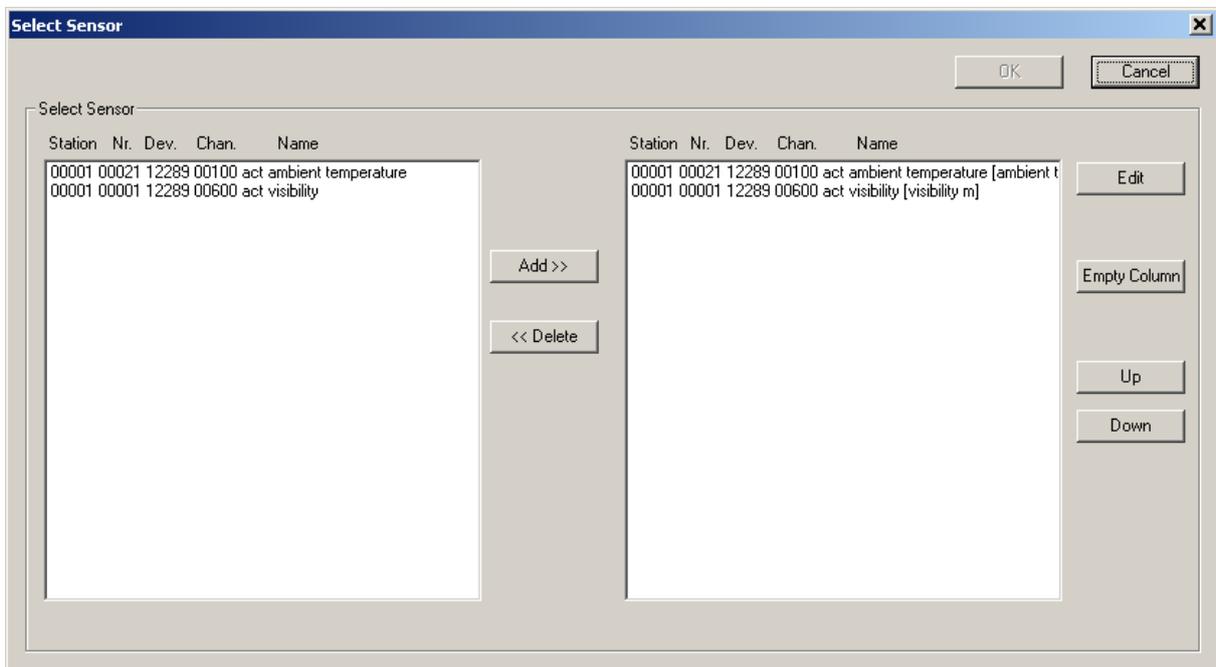
If the export format has been set to “TLS trace file”, the TLS OSI2 and OSI7 address for the station “simulated” by this export file can be set under “TLS Parameter” (same button as XML Parameter).



Note: the file that is created by this type of export contains one TLS TC57 (Inselbus) data telegram with “result values” (measure values) for function group (FG) 3 sensors for one timestamp. TLS sensor type and channel assignments are part of the export sensor settings (see below). The values need to be scaled or converted to the appropriate TLS data types or coding as appropriate.

7.5 Export Sensors

The “Select Sensor” Dialog is displayed to select the sensors to be exported:



Station	Nr.	Dev.	Chan.	Name
00001	00021	12289	00100	act ambient temperature
00001	00001	12289	00600	act visibility

Station	Nr.	Dev.	Chan.	Name
00001	00021	12289	00100	act ambient temperature [ambient t
00001	00001	12289	00600	act visibility [visibility m]

If a station was configured for the export job, only sensors from that station are available on the left side to be selected for the export. A sensor may be selected multiple times.

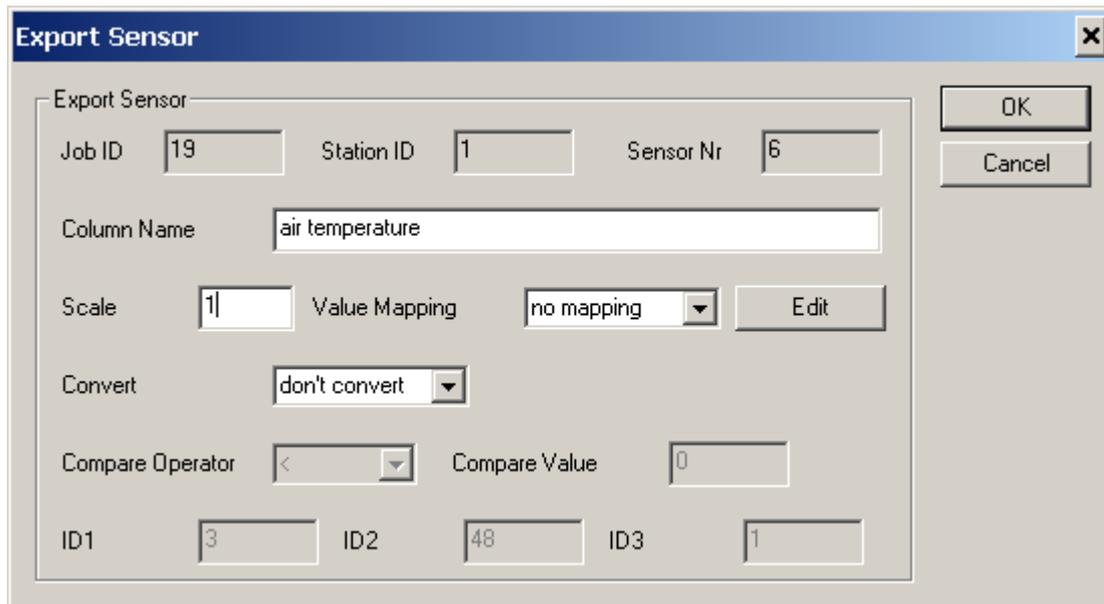
Empty columns can be inserted into the export by clicking “empty column” on the right side.

Note: for template jobs, an appropriate dialog to assign logical sensor types instead of “real” sensors is displayed

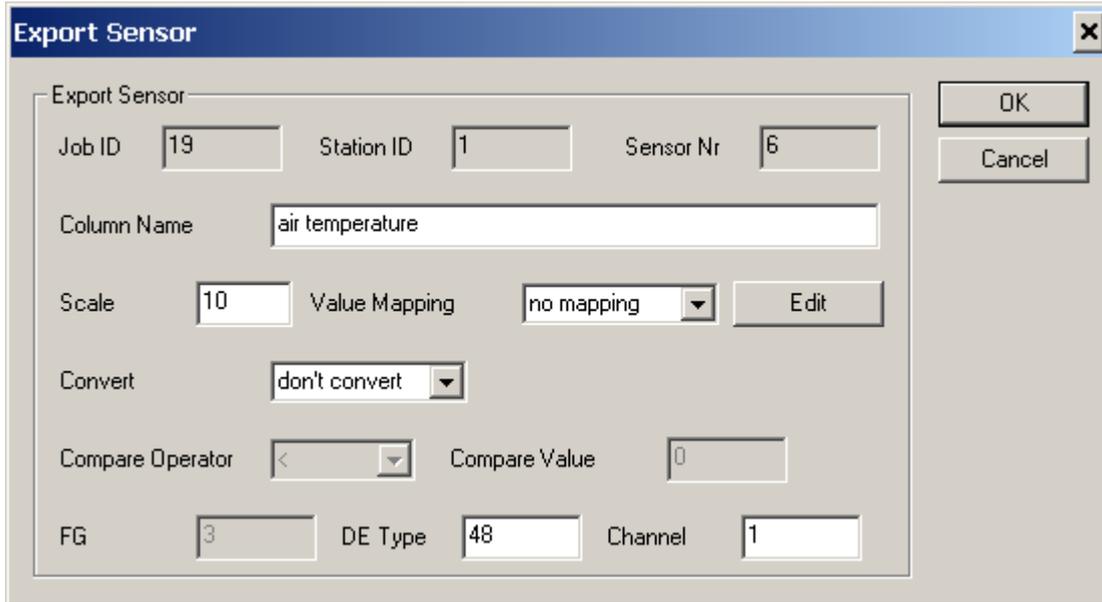
The sequence of the sensors can be changed by selecting a sensor and using the “up/down” buttons.

For each sensor you add to the export, the “Export Sensor” Dialog is displayed to set following options for the sensor:

Add sensors to be exported in the order they should appear in the export file (which is the order they are displayed on the left side).



- **Column Name:** the name of the column (default : sensor name and unit). This name will appear for the column in the first line if “include header” is specified in the Export Job settings.
- **Scale:** scaling factor for the measure value (is applied before any value mapping is done if configured).
- **Value mapping:** value mapping (offset and scale or table mapping) to be applied to exported values
- **Convert:** the measure values for the exported sensor can be converted as follows :
 - **Don't convert:** the value will be written as “floating point” value
 - **To bool:** the value will be converted to a bool value (false = 0, true =1) depending on “Compare operator” and “Compare value”
 - **To int:** the value will be converted to a (signed) integer value
- **ID1/ID2/ID3 or FG/DE-Type/DE-Channel:** these input fields are only active for export format “TLS trace file” or job type “run (external program)”. For export format “TLS trace file” the field labels are “FG/DE-Type/Channel” (see below) and are used to assign the appropriate TLS information to the sensor values. For export jobs of type “run (external program)”, the values of these fields (if any) depend on the external program and are described in the appropriate documentation for that program.



Export Sensor

Export Sensor

Job ID: 19 Station ID: 1 Sensor Nr: 6

Column Name: air temperature

Scale: 10 Value Mapping: no mapping Edit

Convert: don't convert

Compare Operator: < Compare Value: 0

FG: 3 DE Type: 48 Channel: 1

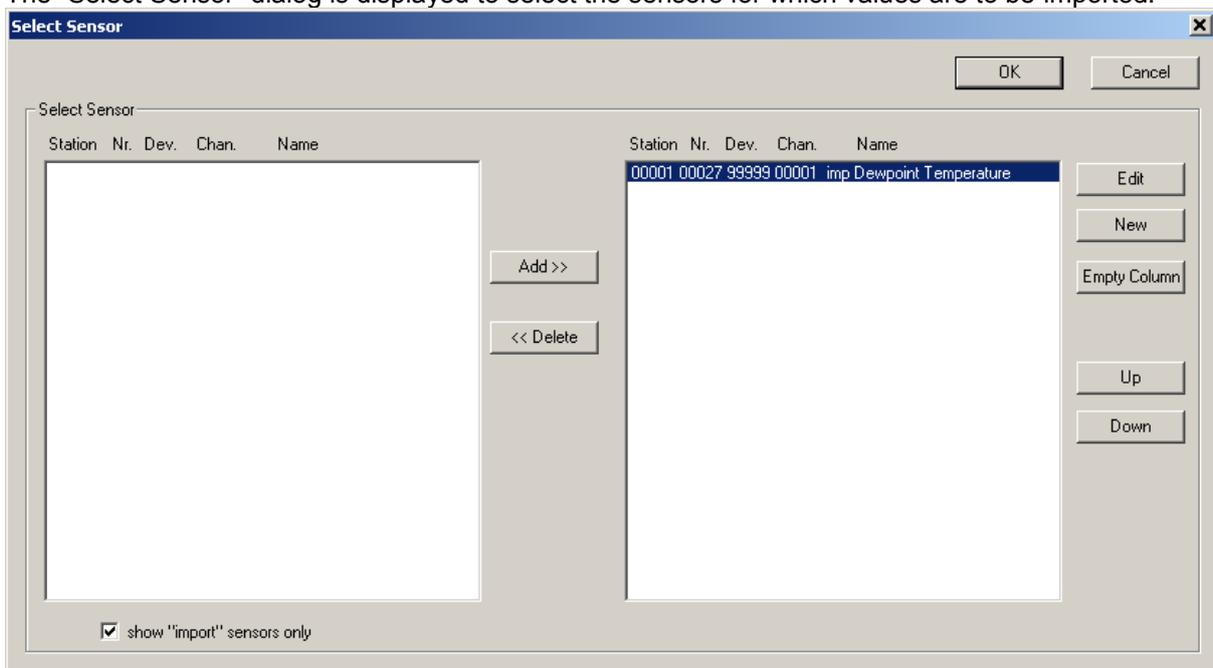
OK Cancel

Note for export format "TLS trace file": the sensor values need to be scaled to the appropriate TLS data formats/units (e.g. temperatures in TLS are in 1/10 °C, so they need to be scaled by 10, water film in TLS is in 1/100 mm so they need to be scaled by 0.1 if the "source sensor" is in µm) or converted (e.g. road condition coded in "Lufft def" need to be converted to TLS DE Type 70 coding using an appropriate value mapping).

The valid range for each TLS DE Type is verified when the data is exported. If there is a range violation, the value will not be exported, and an appropriate error message is written to the Smartcom error log.

7.6 Import Sensors

The "Select Sensor" dialog is displayed to select the sensors for which values are to be imported:



Select Sensor

Select Sensor

Station Nr.	Dev.	Chan.	Name
00001	00027	99999	00001 imp Dewpoint Temperature

Add >> << Delete

Edit New Empty Column Up Down

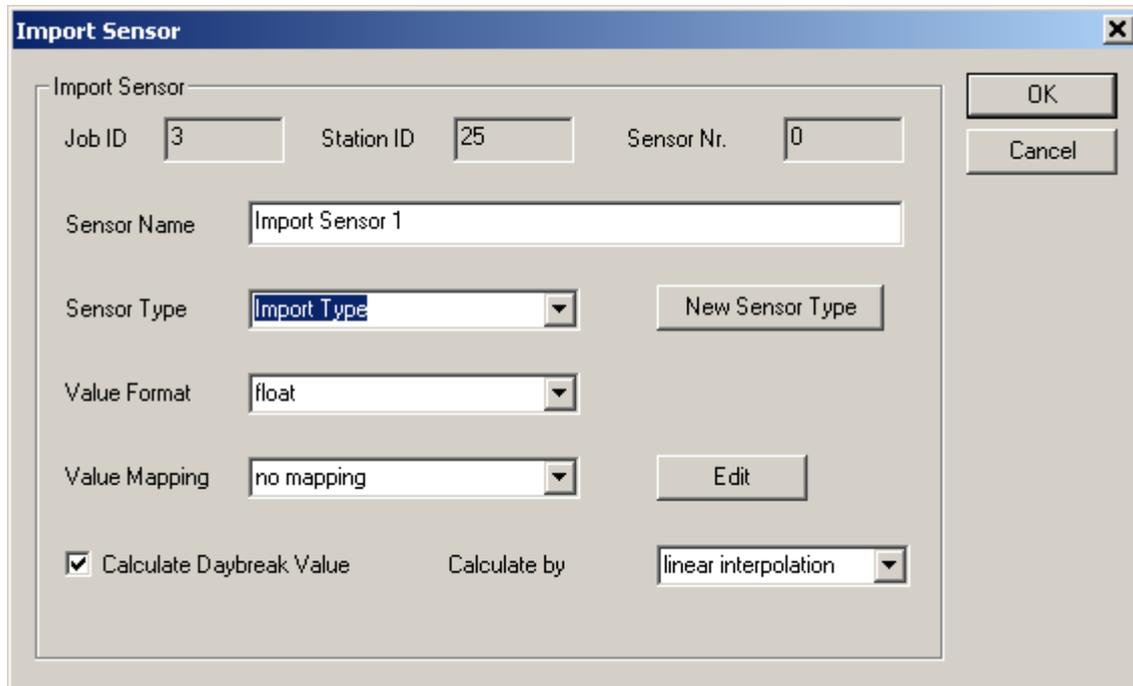
show "import" sensors only

OK Cancel

If a station is configured for the export job, only sensors of that station are displayed to be selected. If **show "import" sensors only** is checked (which is the default), only "import" sensors (that have been created using "New") are displayed for selection.

Note: for template jobs, an appropriate dialog to assign logical sensor types instead of “real” sensors is displayed

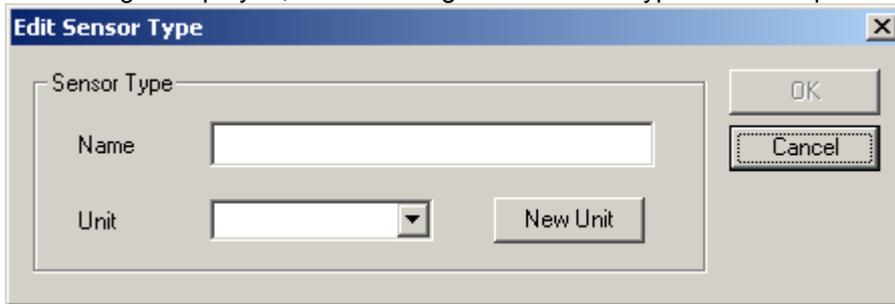
For every selected sensor (or when clicking “New”), the “Import Sensor” dialog is displayed:



- **Sensor Name:** the name of the sensor
- **Sensor Type:** the type of the sensor. Select the type from the listbox, or click “New Sensor Type” to create a new type (see below). Unit information is associated with the Sensor Type
- **Value Format:** the format of the value to be imported: float, bool or int
- **Value Mapping:** the value mapping (offset and scale or table mapping) to be applied to values when imported
- **Calculate Daybreak Value:** calculate a “day break” value (local time with DST, as interval start value for days (e.g. diagrams in day/week/month interval) if there is a value from the day before available.
- **Calculate by:** calculation type of daybreak value : linear interpolation, last (day before) value or next (current day) value for value at daybreak.

7.6.1 New Sensor Type

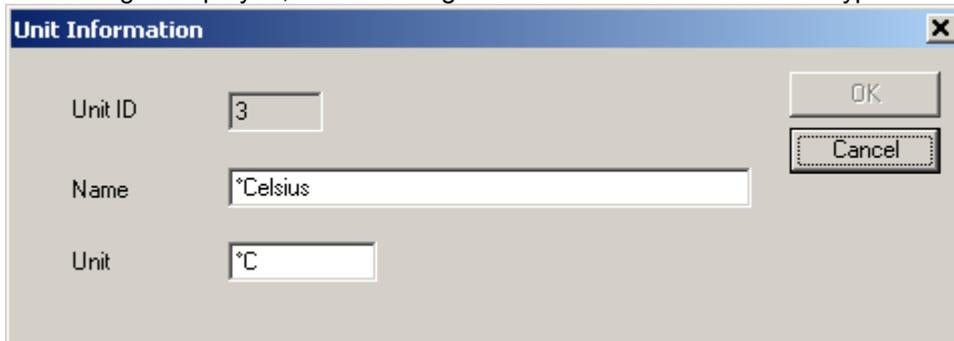
This dialog is displayed, when clicking “New Sensor Type” in the “Import Sensor” dialog:



- **Name:** the name of the sensor type
- **Unit:** the unit for this sensor type. Select the Unit from the listbox, or click “New Unit” to create a new Unit (see below).

7.6.2 New Sensor Unit

This dialog is displayed, when clicking “New Unit” in the “Edit Sensor Type” dialog :



- **Name:** the name for the Unit
- **Unit:** the unit (symbol or abbreviation) for the unit

7.7 Dew Point Calculation

Note: from Version 1.4.11 on, there is a predefined export job “template” to configure the DewPoint calculation, and the DewPoint calculation now reports the vapour pressure as well. See [Create an Export/Import job using a Template Job](#) on how to use an export job template.

The following describes how to set up an export job for dewpoint calculation manually:

Dew point calculation is done by the program “Dewpoint.exe”. The calculation is done using an “Export/Import” Job type “Export+Run+Import” :

Export Job [X]

General

Is Active Job ID: [] Last: [never] Next: [now] [OK] [Cancel]

Name: [Dewpoint and Vapour Pressure UMB] Type: [Export+Run+In] Station: [UMB]

Run Job Every: [1] [on new da] at [00:00:00] On Day (of week or month): [1] [Run Now]

Export

Export Format: [CSV] Include Header Values in Quotes Separator in Last Column [XML Parameter]

Export Filename: [Export\UMB\Dewpoint_and_Vapour_] Decimal Point: [.] CSV Separator: [,]

[UTC] Time in Separate Column Date Format: [yyyy/mm/dd] Time Format: [hh:mm:ss]

Data Start: [last export] [2009/01/10 15:28:00] Interval: [1] [all] [2038/01/19 00:00:00]

Error Value: [] Date Header: [date] Time Header: [time]

Export even if no values are available (empty file/header only) [Export Sensors]

FTP

Use Ftp Ftp Host: [] Ftp Port: [21]

FTP user: [] FTP password: [] binary mode Ftp passive

Remote Filename: [] Delete Source (after transfer)

External Program Settings

Program Filename: [dewpoint.exe] Program Parameter: [#export_file #import_file]

Import

Import Format: [CSV] First Row is Header Values in Quotes Overwrite Data New Files Only

Import Filename: [Export\UMB\Dewpoint_and_Vapour_] Decimal Point: [.] Csv Separator: [,]

[UTC] Time in Separate Column Date Format: [yyyy/mm/dd] Time Format: [hh:mm:ss]

Error Value: [] No value is error Delete file after import Delete (all) Old Data [Import Sensors]

Following parameter must be set for the dew point calculation :

Export:

- Export Format: CSV (default)
- Include Header: No!
- Values in Quotes: No (default)
- Separator in Last Column: No (default)
- Export Filename: a valid Filename
- Decimal Point : '.' (Point) (default)
- CSV Separator: ',' (Comma) (default)
- Timezone: must be the same for export and import, but does not matter for dew point calculation (best set to UTC) (default)
- Time in Separate Column: No (default)
- Date Format : yyyy/mm/dd (default)
- Time Format: hh:mm:ss (default)
- Data Start: last export
- Interval : all
- Error Value: (none/default)
- Date Header: date (default)
- Time Header: time (default)

- Export even if no values are available : no (default)
- Export Sensors : dew point calculation needs the following 2 sensor types being exported in this sequence :
 - 1.) Temperature in °C
 - 2.) rel. Humidity in %

External Program Settings:

- Program Filename: Dewpoint.exe (assuming the program file is in the same folder as SmartCom.exe)
- Program Parameter : #export_file #import_file (default)

Import:

- Import Format: CSV (default)
- First Row is Header: No!
- Values in Quotes: No (default)
- Overwrite Data: No (default)
- Import Filename: a valid filename
- Decimal Point : '.' (point, default)
- CSV Separator : ',' (comma, default)
- Timezone: same settings as for Export above – UTC recommended (default)
- Time in Separate Column: no (default)
- Date Format: yyyy/mm/dd (default)
- Time Format: hh:mm:ss (default)
- Error Value: (none/default)
- No value is error: no (default)
- Import Sensors: dew point calculation will write three “column” with measure values to the output file, which contain
 - 1.) dew point temperature in °C
 - 2.) saturated vapour pressure
 - 3.) water (actual) vapour pressure

7.8 Integrate “plant disease models”

To integrate plant disease models like “oidium” or “botrytis”, you can use the pre-defined “Template” jobs as described in [Create an Export/Import job using a Template Job](#).

8 Alarms

SmartView3 can notify a group of recipients if an alarm condition occurs.

Alarm conditions are:

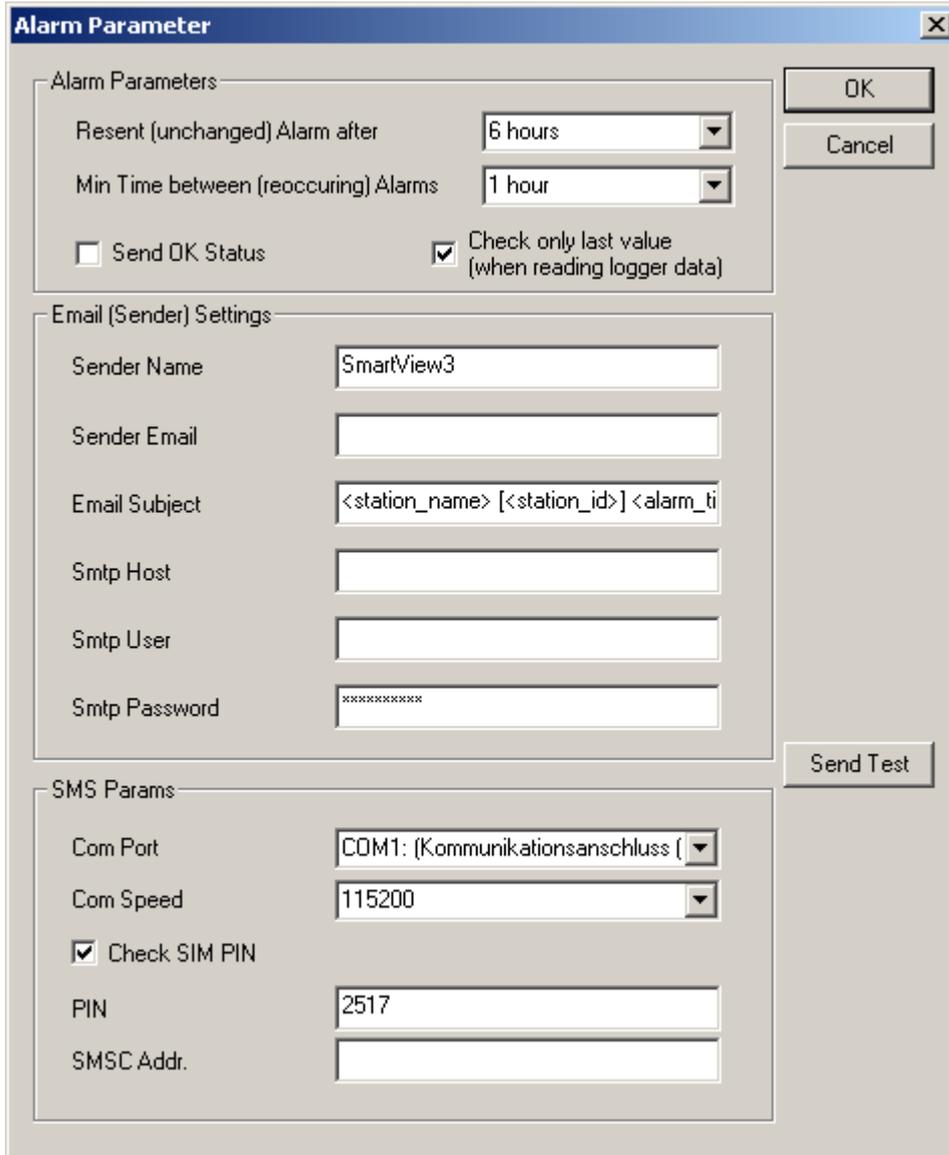
- An error occurred when polling a station (station could not be polled)
- An error occurred when reading values for a specific sensor (the sensor could not be read)
- An error occurred when processing an export/import job
- A sensor value exceeded configured minimum/maximum values
- A sensor value matched a "status" alarm or warning condition

Alarms can be sent as Email, or (through an attached GSM modem or mobile phone) as SMS message.

Alarms are configured via menu "Edit->Alarms".

If this menu item is selected the first time, the "Alarm Parameter" dialog is displayed to configure the settings needed to send an email.

8.1 Alarm Parameter

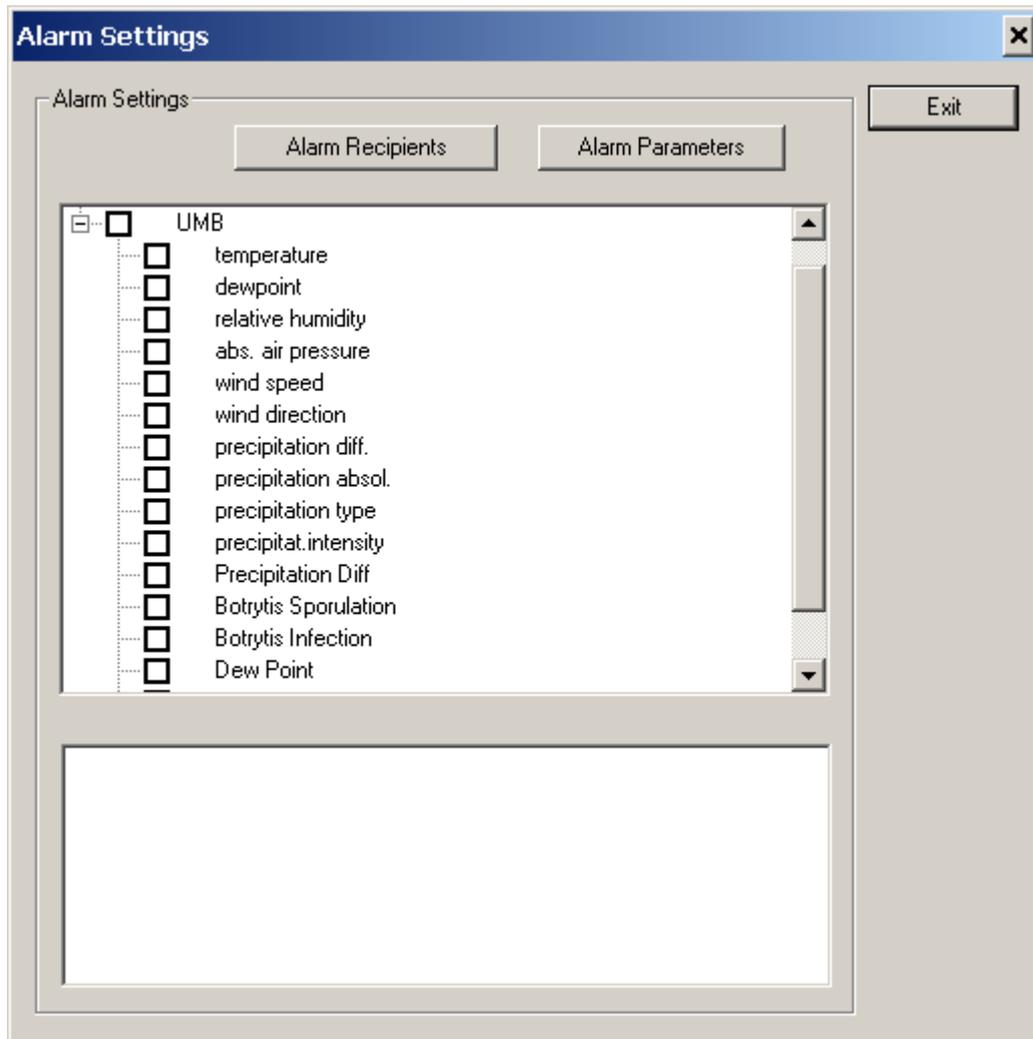


- **Alarm Parameters:**
 - **Resent (unchanged) Alarm after:** specifies the time period after which an alarm condition **that did not change** (e.g. the sensor value is still above the configured maximum) will be sent again.
 - **Min. Time between (reoccurring) Alarms:** specifies the minimum time period that has to expire before a specific alarm (for a station/device/channel/reason) will be sent again **if the alarm does occur again** (e.g. the sensor value was back below the configured maximum, and went up above the configured maximum again).
 - **Send OK Status:** send an “OK” alarm if the alarm condition is cleared (e.g. the value is below the configured maximum)
 - **Check only last value (when reading logger data):** when reading data from a data logger memory, or when importing more than one data row for a sensor, only the last (newest) sensor value is checked for alarm condition. Otherwise all read/imported values are checked for alarm condition.
Note: if all read/imported values are checked, only the first occurrence of an alarm condition is reported depending on the “Min Time between alarms” setting.
- **Email (Sender) Settings:**
 - **Sender Name:** the sender name as it will appear in the email send by SmartView3
 - **Sender Email:** the senders email address – i.e. the email address of the smtp account you use to send the email

- **Email Subject:** the subject line that will be used for all alarm emails: Following “Tags” are supported (and will be replaced by the appropriate values when the alarm email is sent) :
 - <station_name>: the name for the station that caused the alarm
 - <station_id>: id for the station that caused the alarm
 - <alarm_time>: time when the alarm occurred
 - <alarm_reason>: reason for the alarm (error/warning/alarm...)
- **Smtip Host:** the Smtip (email) host used to send the email
- **Smtip User:** the user used to send the email (and to log on to the smtp server)
- **Smtip Password:** the password for the smtp account.
- **SMS Params:**
 - **Com Port** on which the modem or mobile phone is attached. A list of available Com ports is displayed for selection.
Note: this can be a “real” com port or a virtual com port, e.g. if the mobile phone is connected via Bluetooth (most mobile phones that support Bluetooth will appear as a Bluetooth com port even if no special drivers for the mobile phone are installed)
 - **Com Speed:** connection speed for com port. Note: setting the speed is important if the gsm modem is set to operate on a specific speed (e.g. not set to “auto speed”), or if the gsm modem does not support the pre-configured speed if 115200 baud.
 - **Check SIM PIN:** specifies whether the SIM Pin is checked/set via appropriate AT commands before the modem/mobile phone is used by the application.
Note: SIM PIN checking is usually only necessary for serial attached gsm modems. Mobile phones usually require to enter the PIN manually before the mobile phone can be used at all.
 - **PIN:** the SIM PIN to be used (if “Check SIM PIN” is enabled)
 - **SMSC Addr:** the Address (phone number) of the SMS Service Center of the mobile service provider. Usually, this can be left empty – the pre-configured SMSC address (usually pre-configured with the SIM card) will be used per default.

If you have entered this basic information, the Alarm Settings dialog is displayed :

8.2 Alarm Settings



Here you can activate/deactivate alarms for stations and sensors of a station, and for export jobs, by clicking in the appropriate check box.

Alarms are always send to an “alarm recipient group”, i.e. to one or more (email) recipients.

If you did not configure any alarm recipients yet, the Alarm Recipient dialog is displayed (see below).

Alarms can be activated for a “station”, or for a specific “sensor” of a station.

Error Alarms:

Activating alarm for a station will cause alarms being generated for error conditions, like if a station could not be polled, or if a sensor of a station reported an error – and are send to the “alarm recipient group” configured for the station. “Error” alarms for a specific sensor (e.g. a device reported an error condition for a sensor) are only generated (and send to the alarm group configured for the station) if alarms are activated for the station AND the sensor.

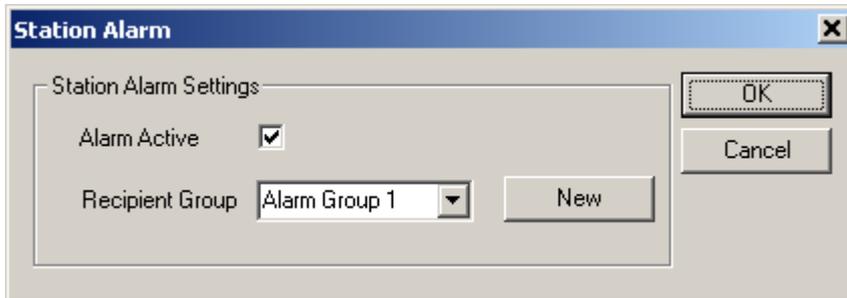
Value Alarms:

Activating alarms for a sensor will cause alarms being generated because a sensor value was below a specified minimum value, a sensor value was above a specified maximum value, or a sensor value was “mapped” to a warning or alarm condition via “[Status Mapping](#)” (see below). Sensor “value” alarms are sent to the recipient group configured for the sensor. Only if alarms are activated for the station as well, error conditions will cause an alarm to be generated (see above).

If you activate alarms for a station, the “Station Alarm” dialog is displayed.

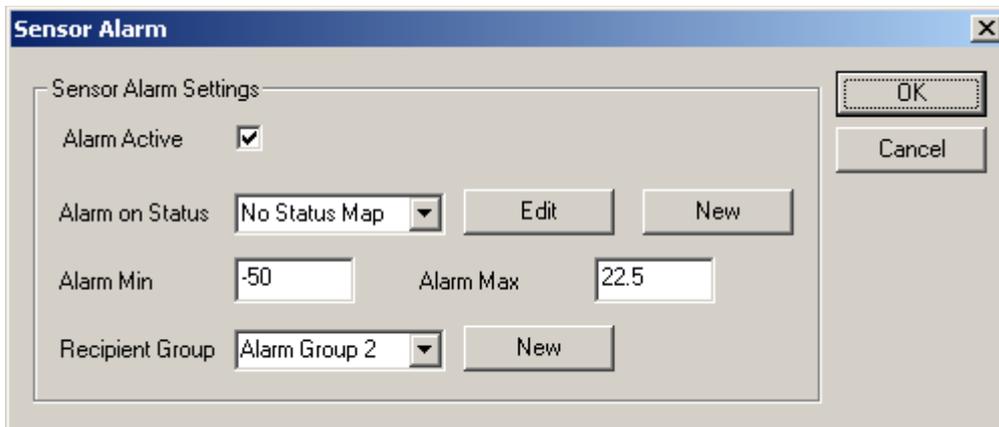
If you activate alarms for a sensor, the “Sensor Alarm” dialog is displayed.

8.2.1 Station Alarm (for error alarms)



You can select the alarm recipient group for alarms for this station from the box, or create a new group. A “station alarm” is generated if a station could not be polled for new data, or if the station reported an error for a specific sensor (if alarms for that sensor are active as well).

8.2.2 Sensor Alarm (for value alarms)



Here you can set/edit the “[status mapping](#)” to be used to determine a warning/alarm condition, or you can set the lower and upper alarm limits for the sensor. Default is the minimum/maximum value a sensor reports.

Besides that, you can select the alarm recipient group for alarms for that sensor, or create a new group.

Note for error alarms on sensors: if alarms are to be sent when an error is reported for a sensor channel, the “station alarm” (see above) for the station must be active, and the alarm processing for the sensor channel must be active. Error alarms for the sensor channel are sent to the recipient group specified for the station/error alarm above. If only error alarms (and no value/status alarms) are to be generated for the sensor channel, the alarm min/max values must be set to the channel min/max values for this sensor channel.

8.2.3 Export Alarm

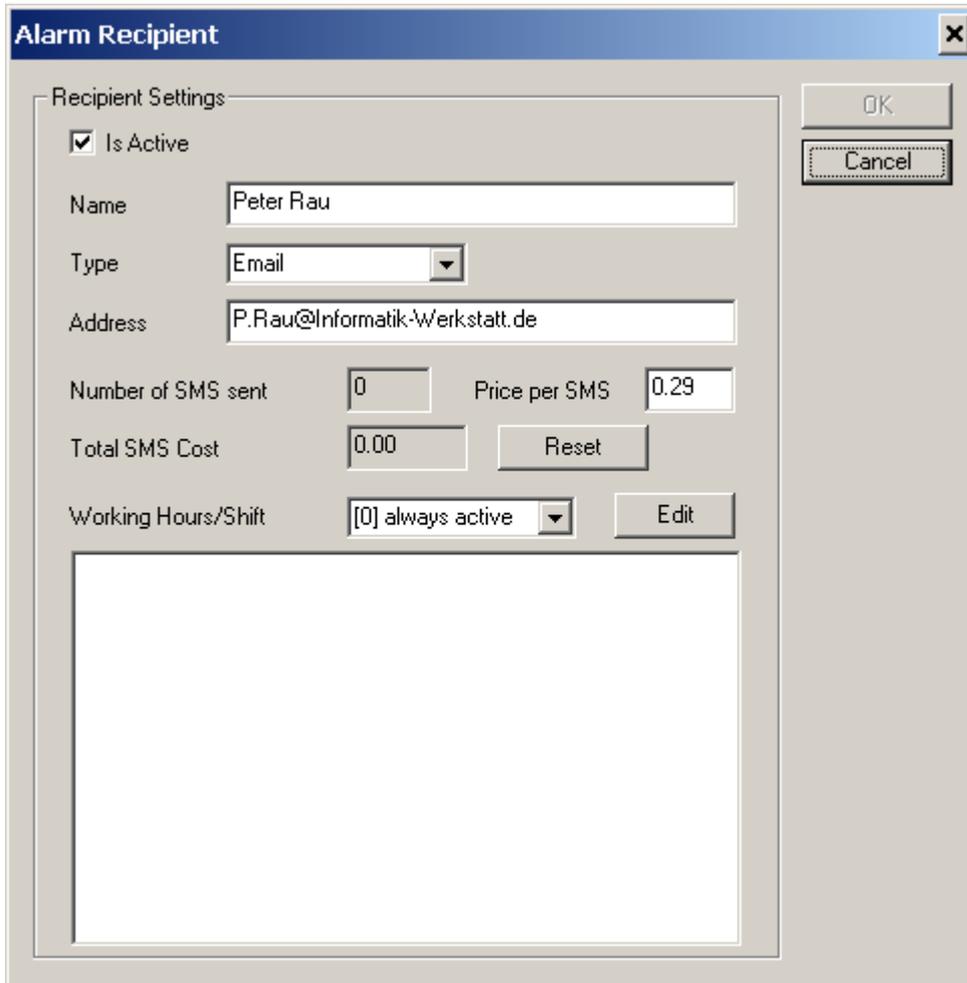


You can select the alarm recipient group for alarms for this Export/Import job from the box, or create a new group.

An “Export/Import” alarm is issued if the export/import did fail, i.e. no data could be read from the import file.

Alarms for imported sensor values can be set using the “Sensor Alarm” for the import sensor (see above).

8.2.4 Alarm Recipient



Enter the name and the email address (for type “Email”) or mobile number (for type “SMS”) for the alarm recipient here.

Note: it is recommended to specify mobile phone numbers in international format, e.g. for a recipient with a German mobile phone it would be +491729876543

This (first) alarm recipient is then added to the first recipient group :

You can assign a “Working Hours” definition to an alarm recipient. An alarm recipient will only receive alarms when “on duty” if a Working Hours definition is assigned.

8.2.5 Working Hours

Working Hours are configured by specifying start/end times for each day of the week. There can be multiple entries for a day of week, to cover “night shifts”.

Working Hours [X]

[1] Night Shift [v] New

OK
Cancel

Description: Night Shift

Save

New
Edit
Delete

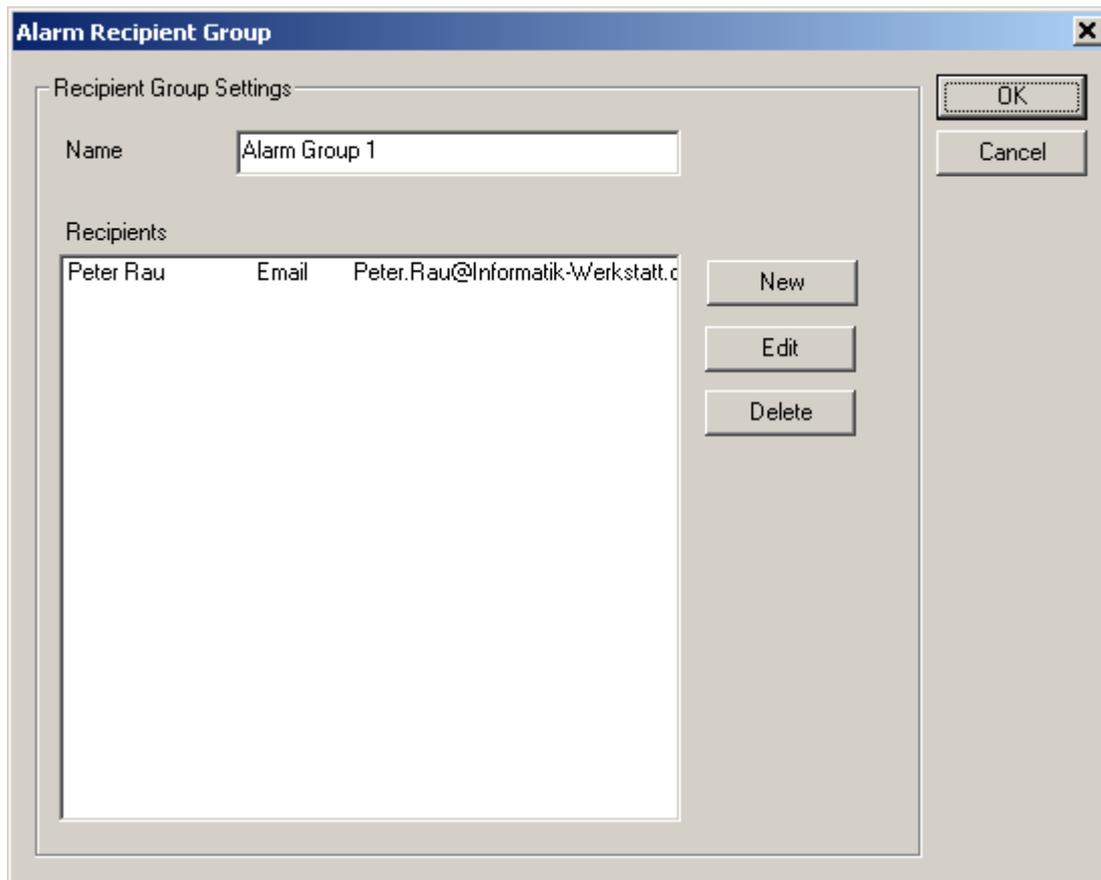
Monday from 00:00:00 to 06:00:00
Monday from 22:00:00 to 23:59:59
Tuesday from 00:00:00 to 06:00:00
Tuesday from 22:00:00 to 23:59:59
Wednesday from 00:00:00 to 06:00:00
Wednesday from 22:00:00 to 23:59:59
Thursday from 00:00:00 to 06:00:00
Thursday from 22:00:00 to 23:59:59
Friday from 00:00:00 to 06:00:00
Friday from 22:00:00 to 23:59:59
Saturday from 00:00:00 to 06:00:00
Saturday from 22:00:00 to 23:59:59
Sunday from 00:00:00 to 06:00:00
Sunday from 22:00:00 to 23:59:59

Edit Working Hours Entry [X]

Monday [v] from 00:00:00 [v] to 06:00:00 [v]

OK
Cancel

8.2.6 Alarm Recipient Group

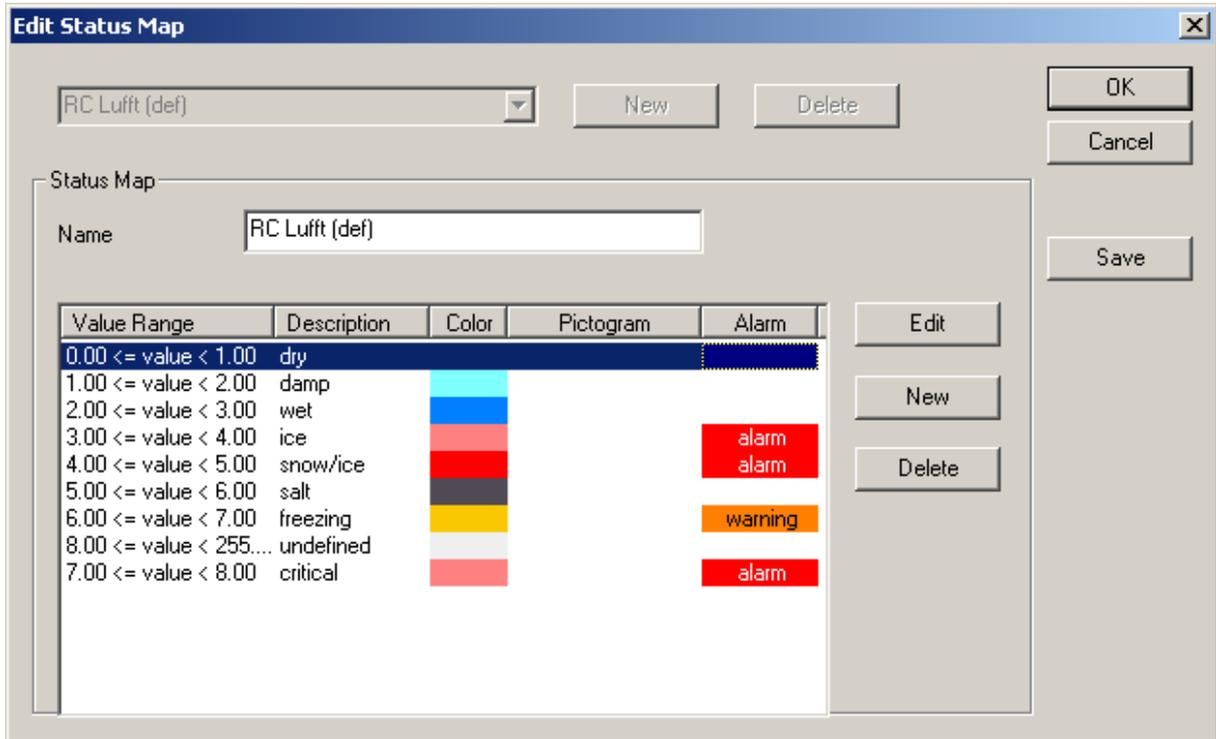


You can add more recipients to this alarm group.

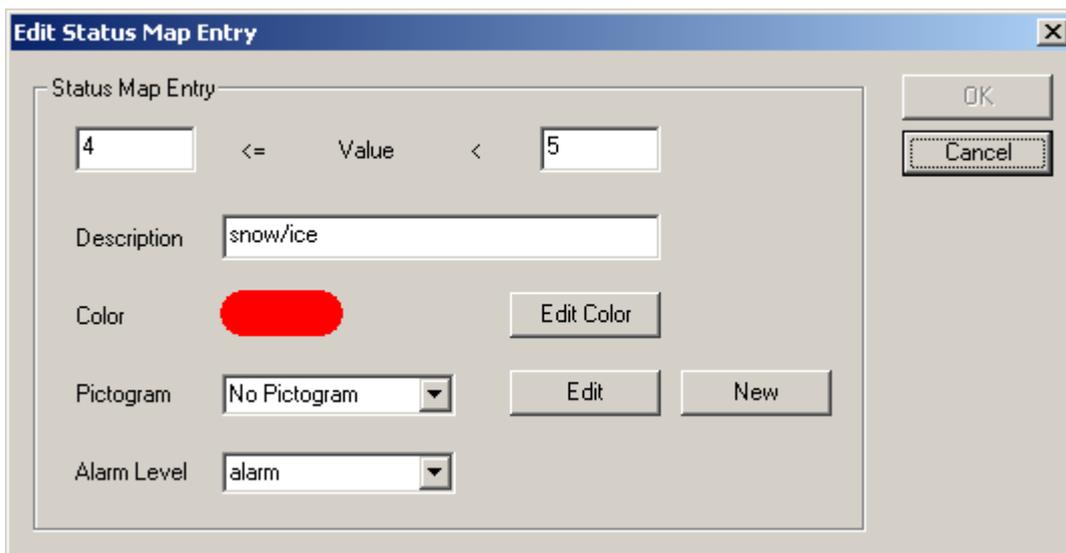
9 Status Mapping

A “Status Map” is used to assign a color, a descriptive text, a pictogram and an alarm condition to a specific value. Status Maps are used in “horiz. Bar Diagrams”, “Color Code” displays, “Pictogram” displays and “Tables”, and in the sensor alarm configuration.

A “Status Map” is assigned to a “Page Element Sensor” using the “[Edit Page Element Sensor](#)” dialog.

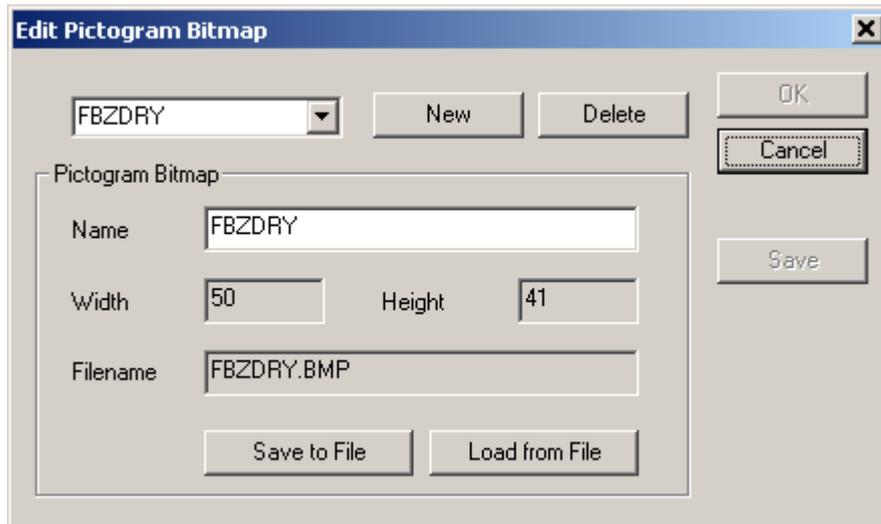


The description, color, and pictogram bitmap are assigned to a value range in “Status Map Entries”.



For “Pictogram” displays a bitmap must be assigned to all entries of a “Status Map”.

To assign a pictogram bitmap to a status map entry, a pictogram bitmap already loaded can be selected from the drop down box, or a new pictogram bitmap can be loaded from the hard drive by clicking “New”.



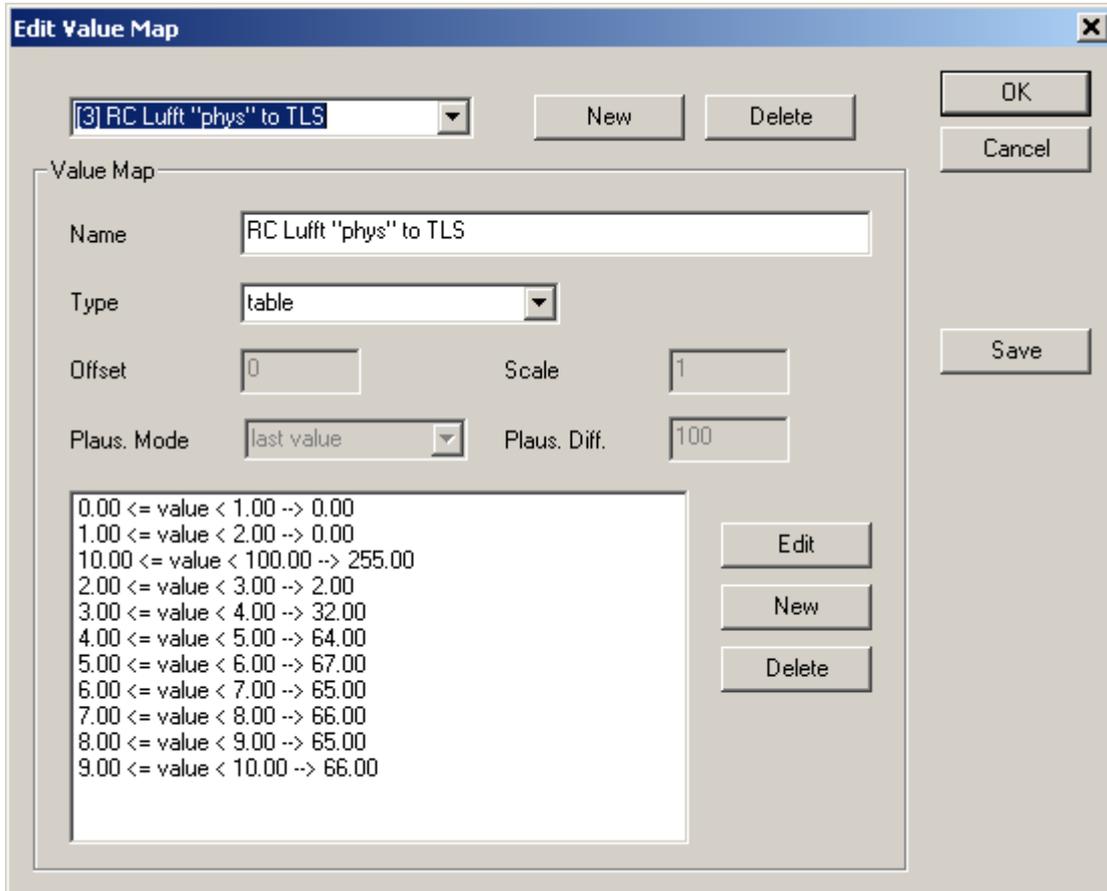
Pictogram bitmaps can be loaded from a file on the hard disc, or written to a file on the hard disc. The name for the pictogram bitmap can be edited.

Note: only bitmap files in "BMP" format are supported at the moment.

10 Value Mapping

Value Mapping can be configured for station sensors (will be applied when sensor values are read), export sensors, and import sensors. The dialog to configure value mapping can be selected from the appropriate dialogs (see above).

Value Mapping can be applied using “offset and scale”, or using a table to map values.



Edit Value Map

[3] RC Lufft "phys" to TLS

New Delete OK Cancel

Value Map

Name: RC Lufft "phys" to TLS

Type: table

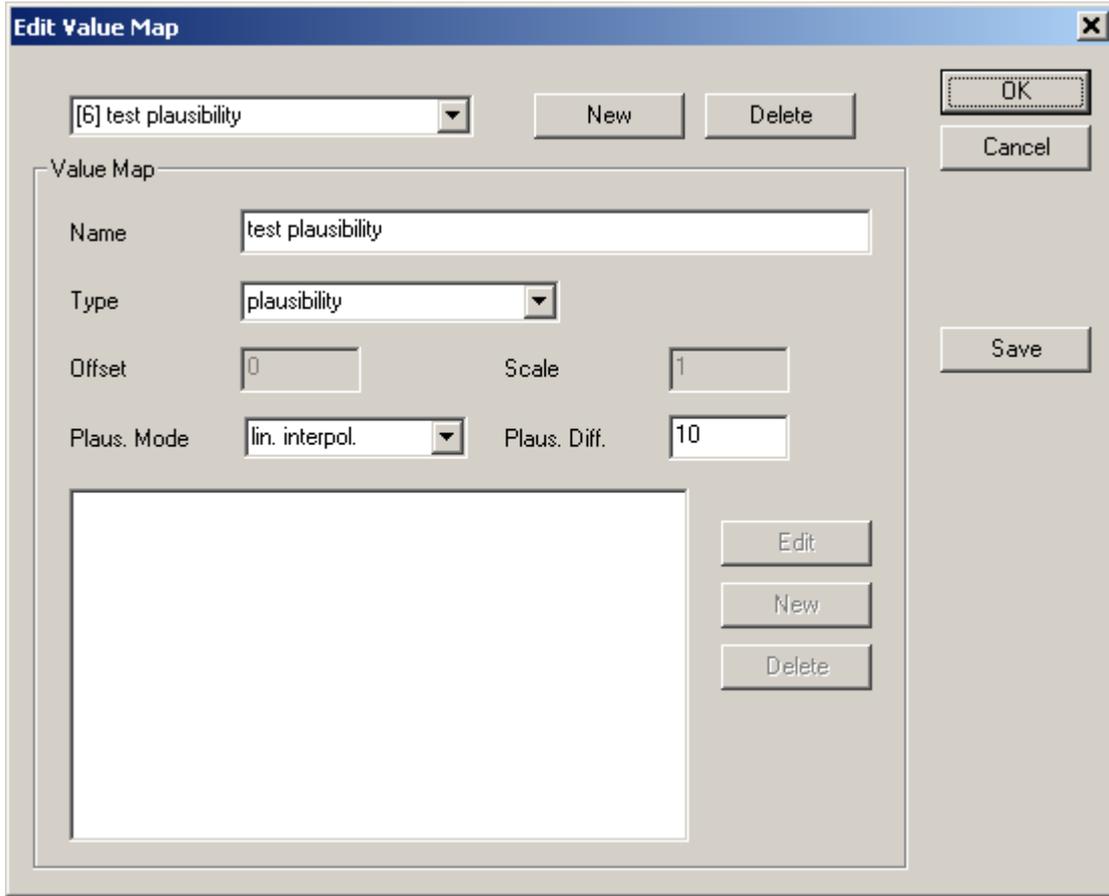
Offset: 0 Scale: 1

Plaus. Mode: last value Plaus. Diff.: 100

0.00 <= value < 1.00 -> 0.00
 1.00 <= value < 2.00 -> 0.00
 10.00 <= value < 100.00 -> 255.00
 2.00 <= value < 3.00 -> 2.00
 3.00 <= value < 4.00 -> 32.00
 4.00 <= value < 5.00 -> 64.00
 5.00 <= value < 6.00 -> 67.00
 6.00 <= value < 7.00 -> 65.00
 7.00 <= value < 8.00 -> 66.00
 8.00 <= value < 9.00 -> 65.00
 9.00 <= value < 10.00 -> 66.00

Edit New Delete Save

A special value mapping “plausibility checking” can also be applied:



The screenshot shows the 'Edit Value Map' dialog box. At the top, there is a dropdown menu showing '[6] test plausibility' and buttons for 'New' and 'Delete'. On the right side, there are 'OK', 'Cancel', and 'Save' buttons. The main area is titled 'Value Map' and contains the following fields:

- Name: test plausibility
- Type: plausibility
- Offset: 0
- Scale: 1
- Plaus. Mode: lin. interpol.
- Plaus. Diff.: 10

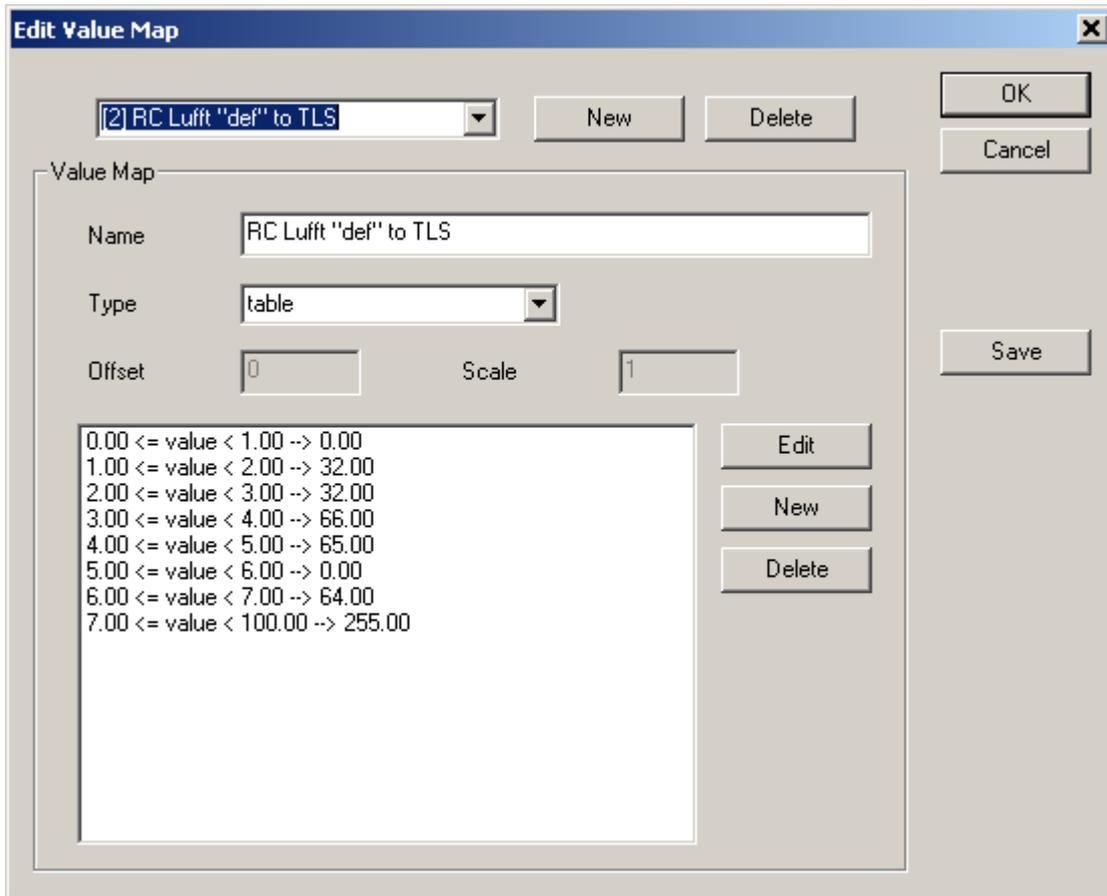
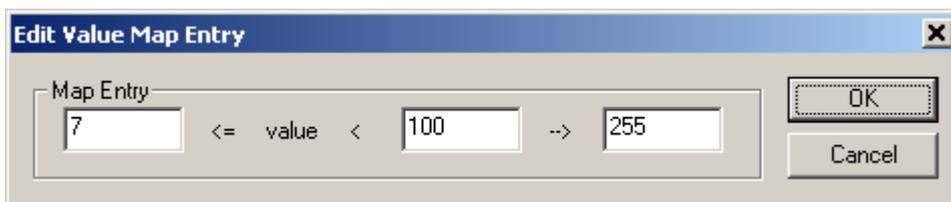
Below these fields is a large empty rectangular area. To the right of this area are three buttons: 'Edit', 'New', and 'Delete'.

To check if the current value is a valid value, the last values for this sensor (within the last 24 hours) are read from the database. If there is no valid value for the sensor within the last 24 hours, no plausibility checking is applied.

There are 3 different plausibility modes:

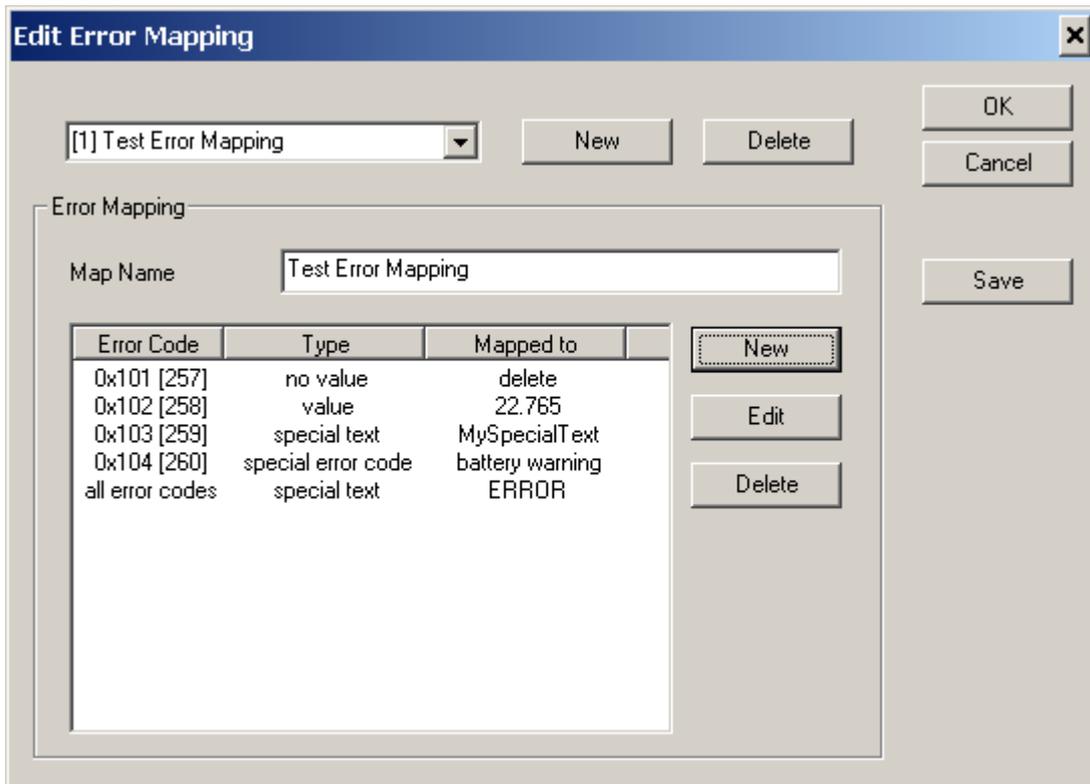
- Error: if the difference between the actual value and the last value for this sensor is larger than "Plaus. Diff", the value is set to "Error"
- Last value: if the difference between the actual value and the last value for this sensor is larger than "Plaus. Diff", the value is set to the last value
- Lin. Interpol.: if the difference between the actual value and the last value for this sensor is larger than "Plaus. Diff", the value is set to "Error". If the next value is a valid value, the last (error) value is updated to a value between the 2 valid values (linear interpolation).

For "table" mapping, values within a specific range can be mapped to a new value. E.g. the Road Condition "Lufft coded" can be mapped to road condition in "TLS" format :

11 Error Mapping

Error mapping allows to map error codes reported with sensor values from the station to be mapped as follows:



Edit Error Mapping

[1] Test Error Mapping New Delete OK Cancel

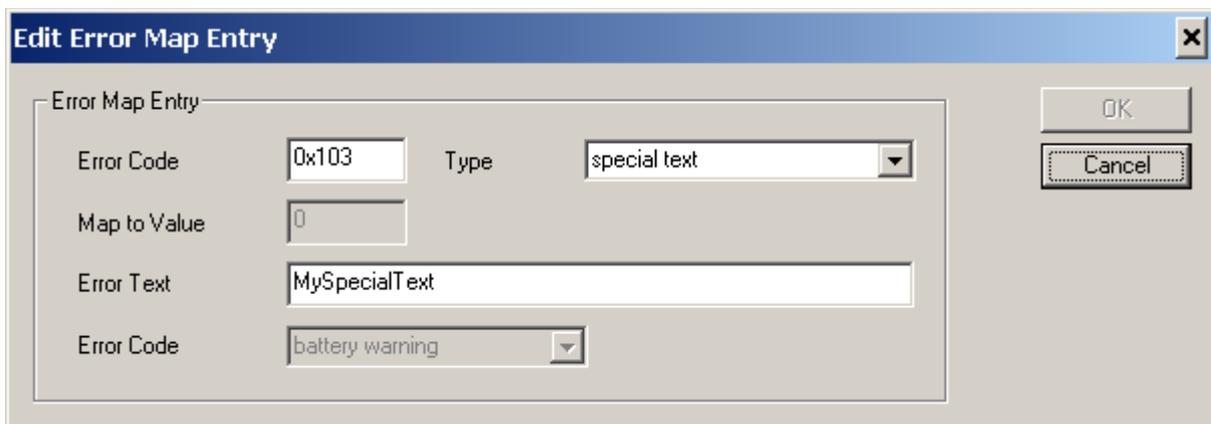
Map Name: Test Error Mapping Save

Error Code	Type	Mapped to
0x101 [257]	no value	delete
0x102 [258]	value	22.765
0x103 [259]	special text	MySpecialText
0x104 [260]	special error code	battery warning
all error codes	special text	ERROR

New Edit Delete

A specific (or all) error codes can be mapped to

- **no value:** the measure value with this error code will be removed (not stored in the database)
- **value:** the measure value with this error code will be set to the specified value (and the error code is re-set to “no error”)
- **special text:** the configured text is displayed on SmartWeb pages for sensor values with this error code.
- **special error code:** the error code for the measure value will be mapped to a special error code. At the moment there is only one special error code for “battery warning”. This causes SmartWeb to show the sensor error and the sensor and station status as “battery warning”, and the station icon on the map page will be blinking in magenta (instead of green)



Edit Error Map Entry

Error Code: 0x103 Type: special text OK Cancel

Map to Value: 0

Error Text: MySpecialText

Error Code: battery warning

There can only be one entry configured for each error code. The error code 0x0 is used to specify an entry that is valid for all error codes. When processing a measure value with an error code, the list is first searched for an entry with the specific error code of the measure value. Only if no entry with this



specific error code can be found, an entry for “all error codes” is searched. If no entry is found, the measure value with the error code is not changed.

Note: Opus2/HP100 and Opus200 stations will always report error code 0x101 if there is a (hardware) problem with the sensor. UMB stations will report the specific UMB error code as documented in the UMB device documentation.

12 User and Privileges

With SmartView3, you can set up users, groups and privileges for groups and users. Only an administrator user (with the appropriate privileges) can add new users and/or groups and edit the privileges of groups and users.

Group privileges are only used to apply default privileges to new users that are created - they are used as a “privilege template” for new users.

A “normal” user can only change its own user settings - i.e. the name and password etc. (not the access privileges).

The following groups are created per default :

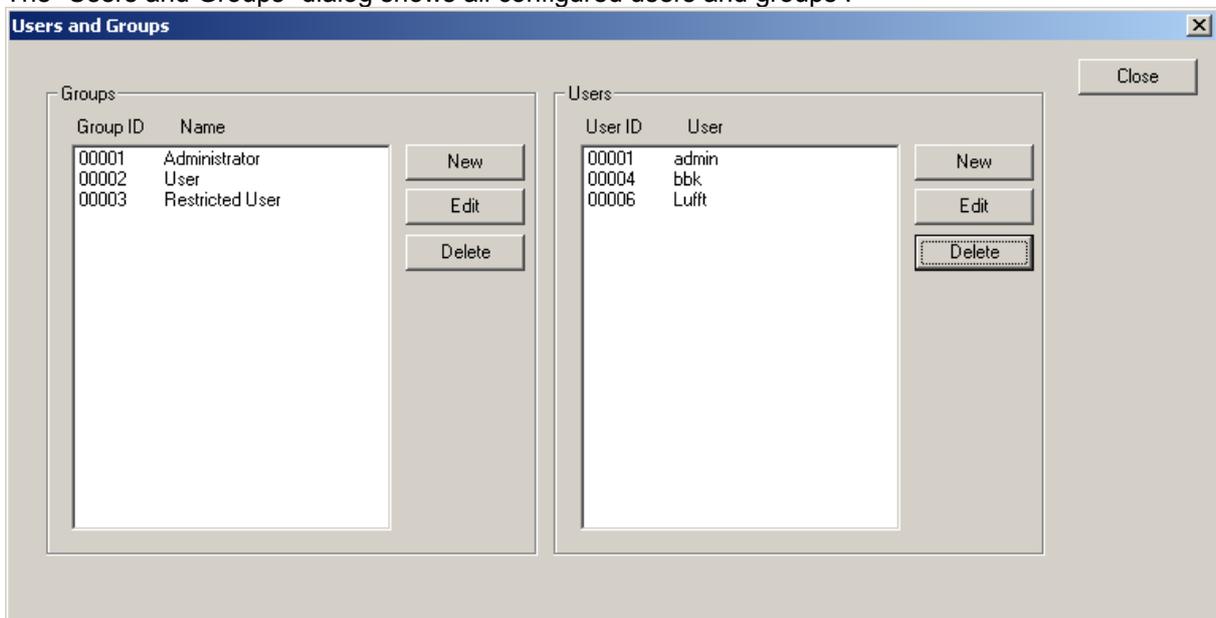
Administrator : access to everything

User : access to station configuration, site configuration and all (html) pages

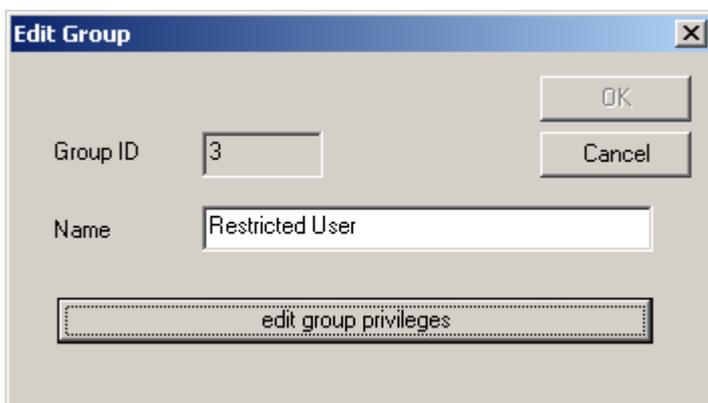
Restricted user : view access to station configuration, site configuration and (html) pages

Note : access to pages on a generated web site relies on “page access” privileges only

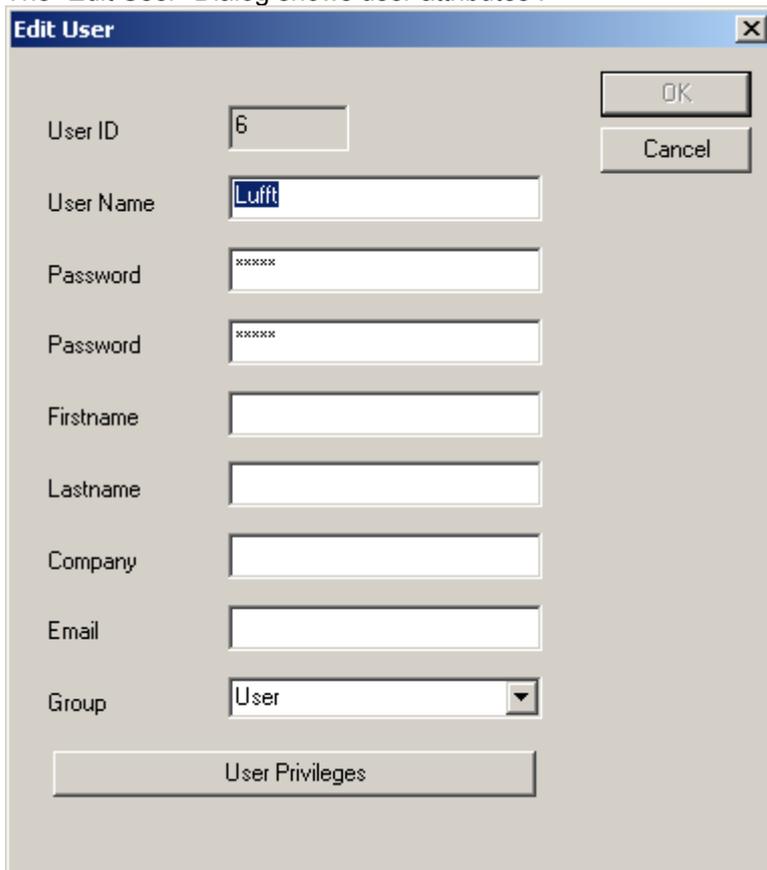
The “Users and Groups” dialog shows all configured users and groups :



The “Edit Group” dialog shows group attributes, i.e. the group id and name :

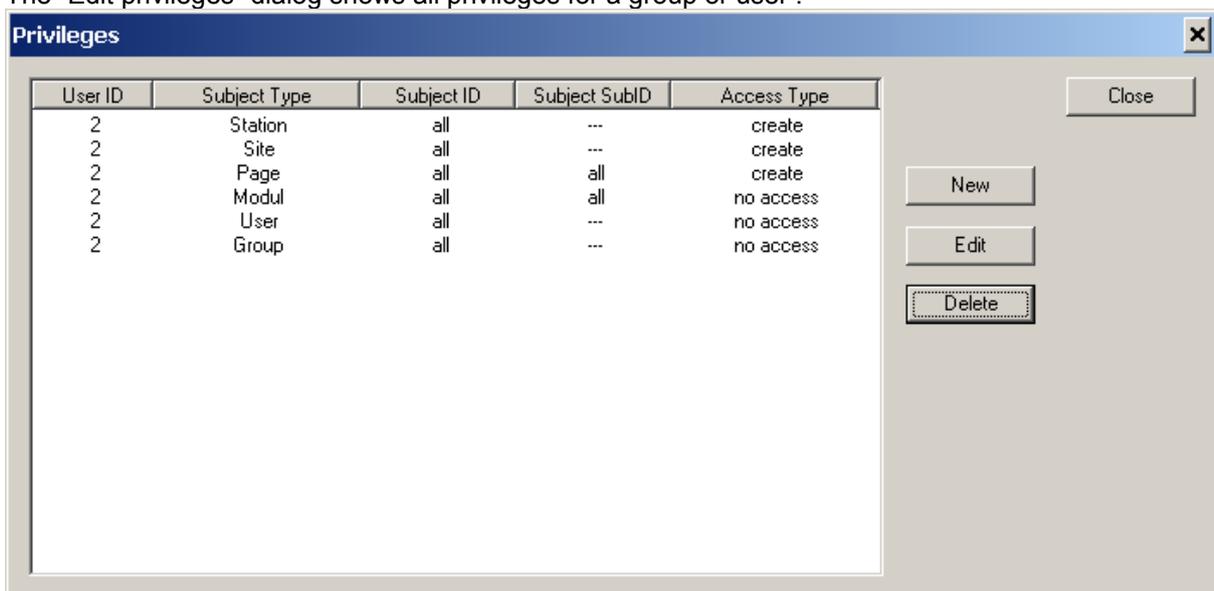


The “Edit User” Dialog shows user attributes :



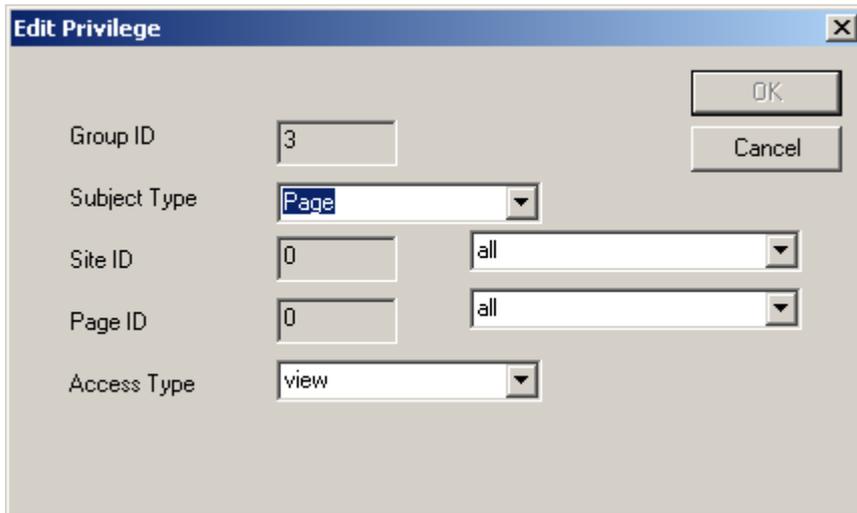
Changing a user’s group will apply the group’s privileges to the user.

The “Edit privileges” dialog shows all privileges for a group or user :



User ID	Subject Type	Subject ID	Subject SubID	Access Type
2	Station	all	---	create
2	Site	all	---	create
2	Page	all	all	create
2	Modul	all	all	no access
2	User	all	---	no access
2	Group	all	---	no access

The Edit privilege button allows to edit (or create) a new privilege :



The screenshot shows a dialog box titled "Edit Privilege" with a close button (X) in the top right corner. The dialog contains several input fields and dropdown menus:

- Group ID:** A text input field containing the number "3".
- Subject Type:** A dropdown menu with "Page" selected.
- Site ID:** A text input field containing "0" and a dropdown menu with "all" selected.
- Page ID:** A text input field containing "0" and a dropdown menu with "all" selected.
- Access Type:** A dropdown menu with "view" selected.

At the top right of the dialog, there are two buttons: "OK" and "Cancel".

The "subject id's" for privileges are shown depending on the privilege Subject (Page, Site, Station etc..)

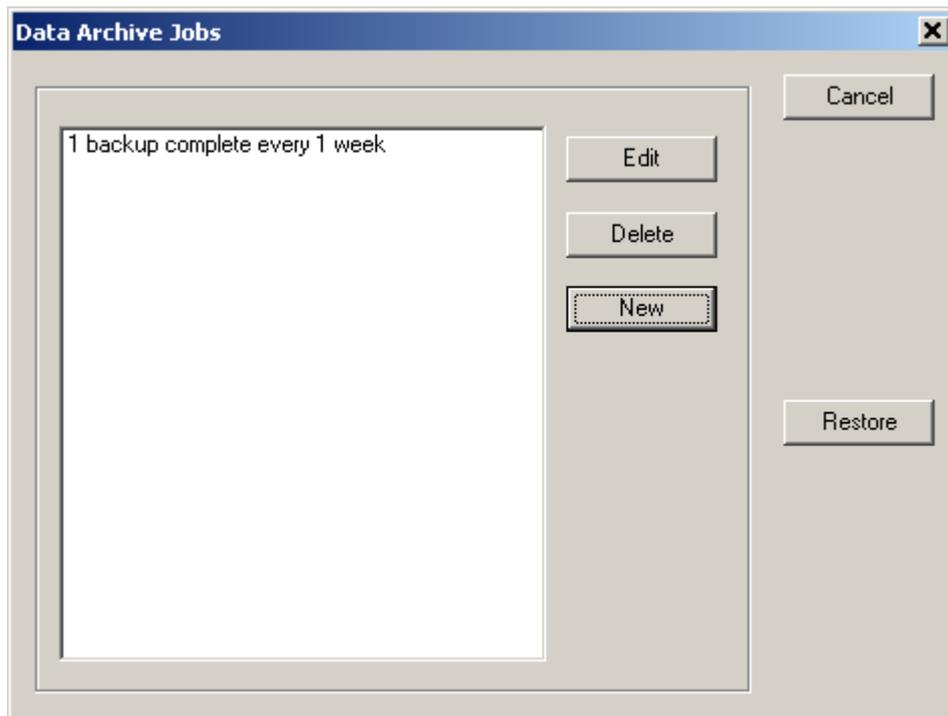
Privileges are always calculated "bottom-up", i.e. if a user has a privilege for a specific page - this privilege is applied. If not the privilege for all pages of a site is applied if it exists. If it doesn't exist, the privilege for all sites/pages is applied.

13 Backup/Archive Data

The Backup/Archive Data module can be used to automatically backup or compress the data in the database. This function utilizes the “mysqldump” utility and the mysql command line utility. It requires that the “mysql program path” is included in the Windows PATH environment variable (see “Installation”).

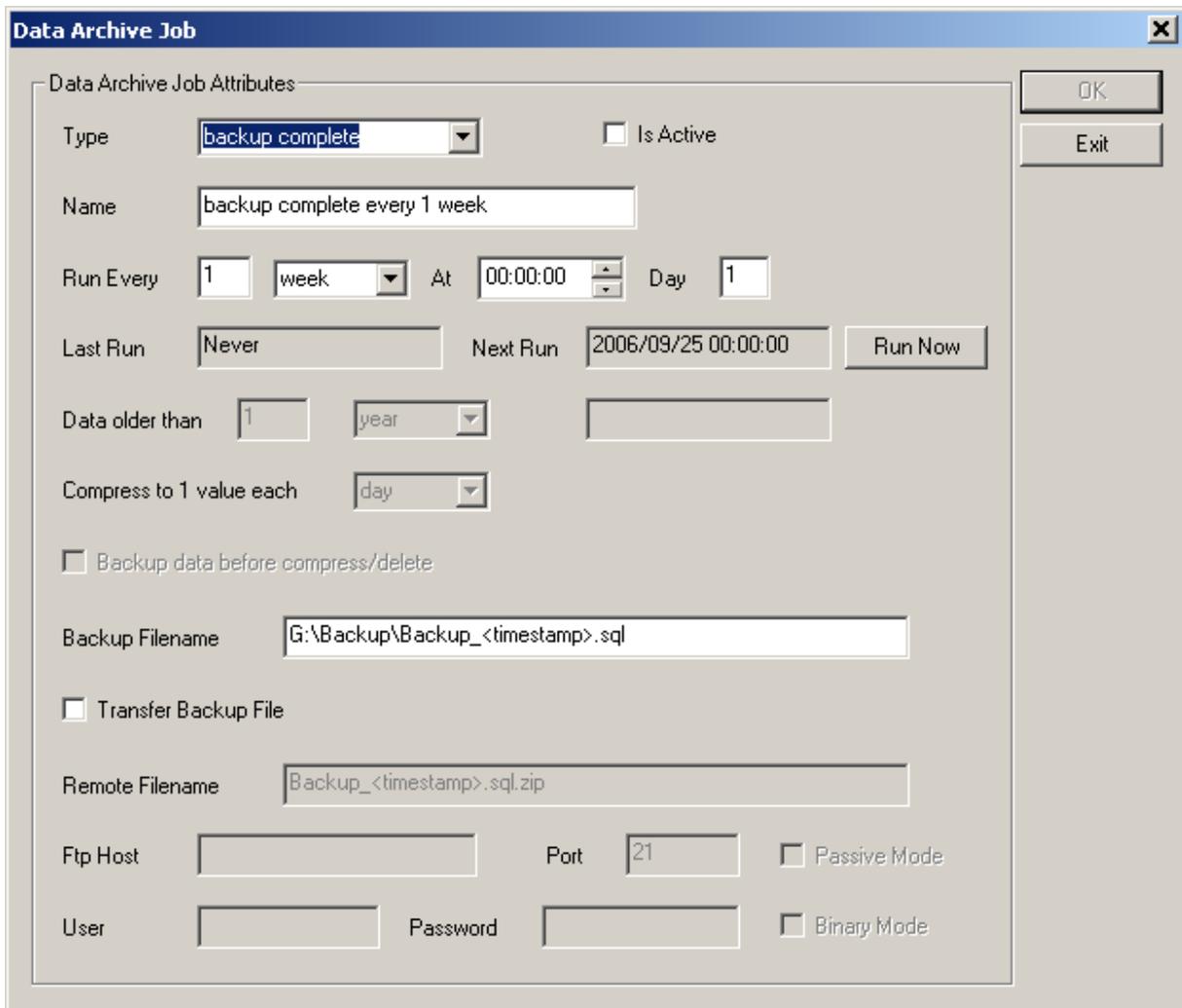
Backup and data compression can be set up through the main menu “Setup”, menu item “Backup/Archive Data”.

A dialog is displayed that lists all jobs configured to the module :



13.1 Configure Backup/Archive Jobs

On “Edit” or “New”, the Data Archive Job dialog is displayed :



- Type:** can be “delete”, “delete pictures”, “compress”, “backup” or “backup complete”:
 - delete:** delete measurement data older than the configured time. The deleted data can be backed up automatically before it is deleted.
 - compress:** compress measurement data older than the configured time to 1 value each configured interval. The deleted data can be backed up automatically before it is compressed
 - backup:** backup all tables. The backup file will only contain “insert” statements for all SmartView3 database tables for all data in the tables, but no “CREATE TABLE” statements will be part of the backup. Existing entries in the database will not be overwritten, e.g. changes made to the database contents after the backup file was created (other than deleted entries) are not overwritten.
 - backup complete:** backup all tables with “DROP/CREATE TABLE” statements. This backup can be used to completely re-create the database. Note: as existing tables are dropped before they are re-created, all changes to the database after the backup file was created are lost.
 - delete pictures:** delete picture data (CAM FTP/HTTP stations) from the database and from the harddrive (if appropriate). The deleted data can be backed up automatically before it is deleted.

The backup files created are text files containing sql statements. They can be rather large in size, so please make sure there is sufficient disc space for the file(s) to be written.

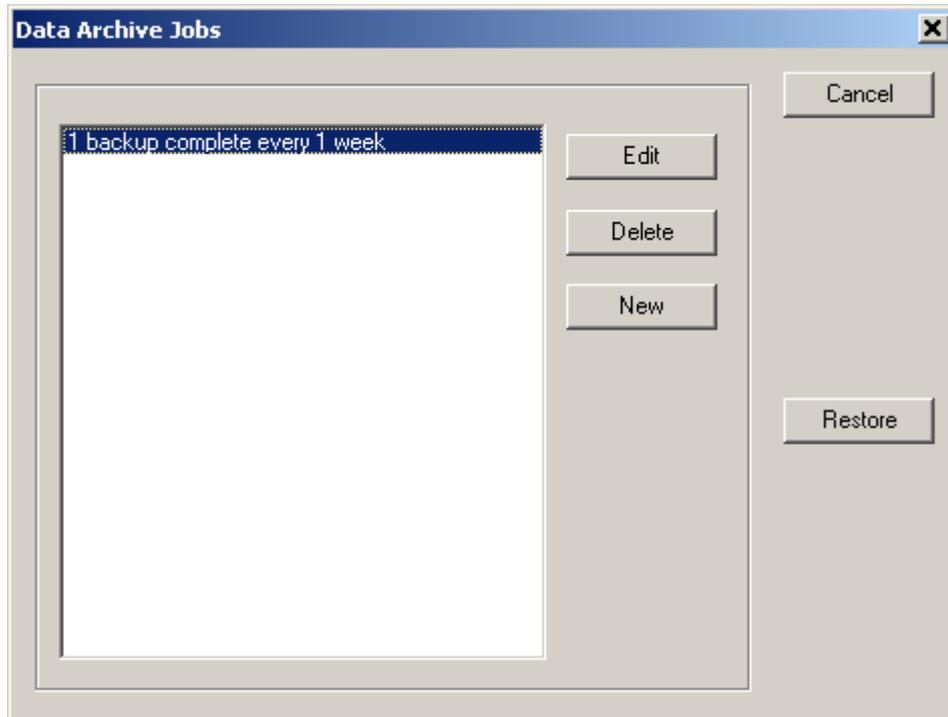
All backup files created can be manually re-loaded to the database (or the database can be re-created manually for “backup complete” type backups) using the “mysql command line” utility and the “source <filename>” command.

Besides the “.sql” file that contains the actual sql statements, a “.sql.info” file is created that contains information about the backup file that is used by SmartView3 when restoring a backup file.

- **Name:** name for the data archive job
- **Run every:** schedule information for this archive job
- **Last Run / Next Run:** time of last run and next run of the job
- **Data older than:** configure time offset for “delete” and “compress” type jobs
- **Compress to 1 value each:** for “compress” type jobs configure the “target” interval for compressed data
- **Backup data before compress/delete:** for “delete” and “compress” type jobs : create a backup of the data before deleting/compressing the data
- **Backup Filename:** name of the backup file. The filename may contain the special tags “<date>” or “<timestamp>” which will be expanded to the appropriate value when the backup file is created.
Note: the filename should always end to .sql in order for the build in restore function to recognize the file.
Note: as the backup file is a text file containing sql statements, it does take up a lot of disc space. Please ensure there is enough space on your drive where you write the backup file !
- **Transfer Backup File:** automatically transfer the backup file to an ftp host
- **Remote Filename:** filename on the ftp host (usually the same name as the Backup file, but you may include a path on the host)
- **Ftp Host:** the FTP host (name or ip address) the file is to be transferred to
- **Port:** the TCP/IP port for ftp on the server
- **Passive Mode:** use ftp passive mode
- **User:** the ftp user
- **Password:** the ftp password
- **Binary Mode:** use binary mode to transfer the file

13.2 Restoring Backup Files

There is a “Restore” button on the “Data Archive Job” Dialog, that can be used to restore a backup file created by SmartView3.



Clicking the restore button, a File Open dialog is displayed that shows all “.sql.info” files in the selected folder.

If the backup was created as part of a “compress” type job, the compressed values are removed from the database before the original values are restored by processing the backup file.

The restore function utilizes the mysql command line utility.

14 Styles.css

The CSS File serves as a central template file for all generated html files. Note that displaying the html files without corresponding CSS file will result in improperly formatted pages with incorrect font assignments.

The default "styles.css" file provided with SmartView3 can be saved to a file, modified, and loaded back into the database using the Edit Site Element dialog - see [Edit Site Element](#).

Very little information regarding formatting (font style, size etc) is embedded in the html files. Most of it is done via the CSS file. For a detailed explanation of available html/CSS tags see the broadly available documentation, e.g. www.selfhtml.org.

Under normal circumstances, it will only be necessary to make very few modifications to the CSS file, e.g. to adapt the colours of the different html elements to your needs.

The relevant sections will be described later in detail.

SmartView3 will probably - in a later versions - include a built in editor, so that "manual" modifications per editor will no longer be needed. If you prefer to run SmartWeb without a site logo or with a logo of different size, some further changes will be needed.

Each CSS File consists of different sections:
CSS files group the formats by name. You will find a section named "divid_main" which holds the format specification for all ordinary text.

14.1 CSS sections used by SmartWeb

divid_main:
this is the section where tables and diagrams are placed

divid_header:
area where the site's header is placed (usually top left)

divid_logo:
Section for the logo space (usually top right)
may be unused if logo is disabled (see below)

divid_navigation:
area where the navigation elements are placed (usually placed middle/left)

divid_time:
this is used for the "generation" time on the bottom of each page.
If you want to make the time invisible, set the colour to the corresponding background colour

divid_print:
this format is used for all "Print Preview" pages

d_ta,d_th,d_td:
these sections are used for the data tables of the application
modify elements whenever modifications to the table's format are needed

p_ta,p_th,p_td:
same as above, used for print preview pages

body:
ordinary html text area - rarely used / unused within SmartWeb

link/visited/hover:

the link tags in web pages (where the html file points to another file) can be formatted individually

- link: an ordinary link
- hover: used if mouse cursor is over the link
- visited: used for a link that has been visited/used

Be careful when modifying the CSS file, errors in the file will cause unpredictable results in the way the html pages are displayed. In case of major malfunctions revert to the CSS version supplied with SmartWeb's installation package and carefully (step by step) repeat the changes made.

Attention:

Special care must be taken if the padding/position data are altered as they are crucial for the page layout.

14.2 Change colours or fonts

You can adjust the following tags freely to suit your needs. Modifications to those tags should be sufficient to adapt the pages to your needs and integrate it into a given corporate design.

The names of the tags should be self-explanatory: font-size font-weight, font-style , font-family, color, background-color, border-style, border-color, border-width (for the tables)

Notes:

font sizes always require a unit, either px (pixel) or pt (point)

colours are entered as hexadecimal rgb triple

examples:

000000 black

808080 grey

ffffff white

ff0000 red

00ff00 green

0000ff blue

There are some predefined text constants for colours, eg black, white, cyan etc that can be used alternatively (see selfhtml.org)

14.3 Change logo size

The site is - out of the box - designed to work with a logo of 175*65 pixel. whenever a logo changes in size, the following values need to be adjusted

divid_header:

margin 5,LOGO_WIDTH+5,5,5

height: LOGO_HEIGHT+5

divid_navigation:

top: set to LOGO_HEIGHT +10

If a setup without logo is required, simply decide what height the header section shall have - e.g. depending on its font size and content... (take this height as LOGO_HEIGHT) and apply the modifications describe above - with a LOGO_WIDTH of 0

Adjustment of the width of the navigation "window" :
modify these values

divid_navigation: width
divid_main margin set the last value to width + xxx

Note:

Whenever special national characters are to be used, make sure the font you select does supply them. Microsoft supplies a font named "Arial Unicode MS" that contains even japanese, korean and simplified chinese characters together with virtually all European special characters in one big font file.

14.4 Examples

Default table, with background of section "divid_main" set to grey:

Time	Temperature °C	Temperature °C	generic (Ohm) Resistance Ohm	generic (Ohm) Resistance Ohm	generic (Ohm) Resistance Ohm	Temperature °C	generic (Ohm) Resistance Ohm
2005/09/26 00:05	24.49	52.86	100.18	199.51	298.63	24.77	428.66
2005/09/26 00:25	24.42	52.86	100.18	199.54	298.63	24.69	428.69

An example with different table options, thus resulting in the following table appearance:

Time	Temperature °C	Temperature °C	generic (Ohm) Resistance Ohm	generic (Ohm) Resistance Ohm	generic (Ohm) Resistance Ohm	Temperature °C	generic (Ohm) Resistance Ohm	generic (Ohm) Resistance Ohm
2005/09/26 00:05	24.49	52.86	100.18	199.51	298.63	24.77	428.66	509.71
2005/09/26 00:25	24.42	52.86	100.18	199.54	298.63	24.69	428.69	509.71

```
.d_ta
{
font-size: 8pt;
color: 0xFF0000;
text-align:right;
border-collapse:collapse;
border-width:3px;
border-style:solid;
border-color:blue;
}
```

```
.d_th
{
color: cyan;
font-weight: bold;
width:100px;
}
```



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```
border-top-width:1px solid black;  
border-collapse:collapse;  
}
```

```
.d_td  
{  
  color: yellow;  
  font-weight: normal;  
  border-top-width:1px;  
  border-top-style:dashed;  
  border-color:white;  
  padding-left:2.5em;  
}
```

15 Appendix

15.1 MySQL Database

15.1.1 Parameters for MySQL

There are many parameters for MySQL that can be used to customize the operation of MySQL. These parameters are described in the MySQL Manual in detail. Please refer to the MySQL Manual for a complete description of all parameters.

The My.ini configuration file is stored in the MySQL directory (usually c:\Programs\MySQL\MySQL Server x.x).

If you plan to use SmartView3 / SmartWeb to create a web site for visualization of your measure values, there is one parameter that should be set in the My.ini file :

max_allowed_packet

This parameter controls the maximum allowed length of an sql statement that may be passed to MySQL. With SmartView3, all data for a site, including logos and bitmaps, are stored in the MySQL database (as hex strings in „blobs“).

The default value for this parameter is 1048576 byte (1 MByte). This will probably be not sufficient to store a bitmap (as we store this data as hex string, it needs double the amount of bytes than the original file).

We recommend to set this parameter to 16MB.

Section :

[mysqld]

max_allowed_packet=16M

other parameters of interest :

datadir=... specifies the path where MySQL keeps the database. If you plan to keep a large number of measure values, you may want to keep the data on a separate hard drive that has sufficient space (see requirements). If you change the datadir parameter, please copy/move all data from the old path to the new path,

If you plan to optimize your database for space, and the hard drive or partition where you keep your database has not enough space left (you need at least as much free space as the database uses, as during optimization MySQL creates a copy of the database files), you may want to specify a different path for the temp files created during optimization/sort using the

tmpdir=

parameter. It is recommended to use a different hard drive for tmpdir in this case, as this speeds up the optimization process.

query_cache_size=1M

As there are quite some queries that are always executed the same way by Collector, setting this parameter is recommended. The default value is 0 (disabled). We recommend to set it to 1M.

15.1.2 Backup

Backup of the MySQL Database can be done either using the mysqldump utility provided with MySQL (see the MySQL manual for a detailed description) - which will dump the database content into a text file which can be used to restore the database and its contents again, or by backing up the MySQL files in the MySQL data folder. The MySQL data folder contains folders for each database, with the name of that database - the collector database is named “collector” by default (if you didn't change that in the “Global Settings” dialog). To back up the data files directly, it is best to stop the collector program and the MySQL system service before backing up the files. See chapter “Database Backups” in the MySQL Manual.

Since Version 1.1.0, there is an automatic backup function build in SmartView3, that utilizes the “mysqldump” utility. See above !

15.1.3 Optimization

Only the table “sensor_values” contains significant amount of rows. If you keep many values in this table, optimizing the table reduces the disc space used by this table.

The table can either be optimized using the “OPTIMIZE TABLE” command in the MySQL command line utility, or by using the “myisamchk” utility. Using the “myisamchk” utility is probably more efficient, as you can set several parameters to use all available memory for the optimization.

Please see the MySQL manual for a complete description of both commands.

Note that while the table is optimized, the table cannot be accessed by other programs, i.e. Collector and other applications using the table may not run while the optimization is in progress. The optimization may take quite some time, depending on the size of the sensor_values table and the speed of the CPU, and available memory.

If you use the myisamchk utility, stop the applications using the database and the MySQL service for optimal speed. Start myisamchk with appropriate parameters for your system. Note that - besides space for a temporary index file in the MySQL data folder, there must be an equal amount of free space in the temporary folder (as configured for Windows). You may supply a specific folder to hold the temporary file to myisamchk. An example (assuming the MySQL bin folder is in the search path for programs, and you are in the MySQL data folder when entering the command) for running the utility is :

```
myisamchk.exe -v -r -S -O key_buffer=128M -O sort_buffer=128M -O read_buffer=2M -O  
write_buffer=2M -t h:\temp sensor_values
```

Processing this command on a sensor_values table with approx. 500 000 000 sensor values took on a Pentium 4 2 GHz system with 1 GByte Memory approx 6 hours.

Note: if the file size of the sensor_value table data and index file exceeds 4 GByte, the MySQL data folder and the temporary folder must reside on NTFS partitions (FAT32 partitions only support file sizes up to 4 GByte).

It is recommended to use a different hard drive to keep the temporary data (param -t to myisamchk.exe) to speed up the process.

15.2 Database Table Description

Please refer to “SmartView3 Database Tables” document.

15.3 Document History

September 2005	P. Rau	Version 1.0
October 2005	P. Rau	Version 1.0.1: <ul style="list-style-type: none"> • Some bug fixes and general enhancements • SmartWeb and SmartCom now show status screen
October 2005	P. Rau	Version 1.0.2 <ul style="list-style-type: none"> • Fixed memory leak • Support for CAM picture on station page • CSV Separator and decimal point can be configured
November 2005	P. Rau	Version 1.0.3 <ul style="list-style-type: none"> • Refined exception handling in SmartWeb • Bug Fix Diagram creating Diagrams • Hide inactive channels • Added Legend for bar diagrams • Fixed problems with MySQL Version 5
November 2005	P. Rau	Version 1.0.4 <ul style="list-style-type: none"> • Changed handling of data for csv export and html tables for sample interval < 1 minute • Added param for FTP (active/passive mode) • Added param for "Error value" in csv export files • Added "manual" export to SmartView3
December 2005	P. Rau	Version 1.0.5 <ul style="list-style-type: none"> • Allow selection of multiple sensors in "Sensor Select Dialog" • Bug Fix SmartCom
January 2006	P. Rau	Version 1.0.6 <ul style="list-style-type: none"> • Added automatic Export/Import module (SmartWeb) with support for calculated sensors • Changed "manual" export to export/import (SmartView3) • Added configuration for Export/Import (SmartView3) • Changed "Create Data Pages for Stations" behavior. If user now answers "NO" no to question "re-create all generated data pages for this site", existing data pages for stations are not deleted. Only pages for stations that do not have a data page assigned are created. Number of created pages is reported.
April 2006	P. Rau	Version 1.0.7 <ul style="list-style-type: none"> • Fixed problem in html tables with "space only" cell content • Integrated Setup with SmartView3 • Integration of Collector in manual • Collector SmartView3 with GUI Interface – Collector is now integral part of SmartView3 • SmartCom and SmartWeb with GUI Interface • Alarms via Email • Support for OpusII/OpusII GMA, HP100 and UMB devices • Support for different Clock/Time settings for Stations • Enhanced scheduling for stations
May 2006	P. Rau	Version 1.0.8 <ul style="list-style-type: none"> • Timeouts can now be configured on a "per station" basis (needed for UMB devices) instead of a global timeout parameter. • Added columns "device_timeout" and "device_timeout_long" to table "stations" • Fixed problem with RS232 connection timeout in release build • Fixed problem with Opus2 in release build • Fixed problem with TCP/IP Connection • Fixed problem with time offset configuration for stations • Fixed problem with Alarm Settings (Treeview) dialog
May 2006	P. Rau	Version 1.0.9 <ul style="list-style-type: none"> • Fixed "desktop refresh" effect • Improved archive page handling • Added alarm params for export jobs • Added scaling to export sensors • Added scaling to import sensors • Added "calc daybreak value" to import sensors • Added "expires" html meta tag to force reload of data pages • Fixed reading online data for Opus208 disabled channel (don't try to read online data if channel is inactive) • Improved error handling on scan_ids for Opus200 network • Adjusted bar diagram width and line diagram width to match within a page (depending on maximum number of used y-axis in line diagrams)
	P. Rau	Version 1.0.10 <ul style="list-style-type: none"> • Extended Site configuration for FTP (Port/Passive Mode) • Enhanced page update trigger for import jobs

		<ul style="list-style-type: none"> Added maintenance functions "Remove Station" and "Abort Transfer" Added time offset specification for reading Opus200 logger data
June 2006	P. Rau	<p>Version 1.0.11</p> <ul style="list-style-type: none"> Enhanced handling of "lost database connection" error (MySQL 5 drops database connection if inactive for some time) Corrected time offset for reading Opus200 logger data for station time settings Added param "OFFLINE-NO-MINUTE-OFFSET" for collector Corrected retry handling for reading logger data
June 2006	P. Rau	<p>Version 1.0.12</p> <ul style="list-style-type: none"> Changed commands to read Opus200 config (not reading specific addresses anymore, but reading complete EEPROM data – is faster and works with older firmware versions as well) Changed command to read UMB values to read multiple values with one command Disable deletion of last/single schedule entry for station Default for "set station time" changed to false Disabled "Set station time" for UMB devices. Disabled "Read stored data" for UMB devices Changed default for time offset "read all stored data" to start of current day Show station type on station list in SmartView3 Fixed Bug with thread synchronization in Collector
September 2006	P. Rau	<p>Version 1.1.0</p> <ul style="list-style-type: none"> Improved TAPI handling for TAPI device changes (changes to TAPI devices don't cause error that requires reboot of PC anymore) Added "data archive" functions to automatically compress/delete measurement data from database, and backup data Added start times to Export (2/3/4 days ago, "since last export" and "since last export day") New Export Job types "Export + Run", "Run and Import" Column header for date/time column can be configured now Improved logging and error handling for UMB devices Separate parameters for connection retries and communication retries Improved site edit interface Fixed problem with first read of Opus200 data when station time not UTC (for older firmware versions) New page type "external link" for links in main menu Removed Cam Stations from selection for web site Cam Station selection for "data" station now via combo box (instead of editing station id) "Value Mapping" for sensor values read from device, export and import of data Configuration change for Opus200 devices (channel name, channel mode, sample and store interval) "Modem Pools" / Assign specific Modem(s) to a station Bug Fix "config change" for UMB device
November 2006	P. Rau	<p>Version 1.1.1</p> <ul style="list-style-type: none"> Some bug fixes Export/Import type "FTP" with wildcard support to transfer multiple files from server Export/Import – Import with wildcard support and new option "new files only" UTC-TIMESTAMP as new time format for export/import jobs Export/Import: only create "empty" export file if configured Export/Import: new option "delete import file" after import was successful Export/Import: new option "delete source" for ftp transfer (delete source file after successful transfer) Export/Import: new option "import only new files" – only import files that have a last_modification timestamp newer than the job's "last_run" timestamp. Dew point calculation as external program for export/import Automatic delete of (older) cam pictures "Sites" can be set active/inactive Export/Import jobs can be set active/inactive New parameters for Collector regarding UMB Stations : UMB Master Address (UMB Address used by collector), Max Class ID (maximum Class ID used when scanning for UMB devices), and "Skip scan class after xxx timeouts.
November 2006	P. Rau	<p>Version 1.1.2</p> <ul style="list-style-type: none"> Bug Fix display channel mode on station page

		<ul style="list-style-type: none"> • “PinCheck” to set pin for GSM Modem SIM Card now internal • Enhanced Exception Handling for reading station list in Collector
November 2006	P. Rau	<p>Version 1.1.3</p> <ul style="list-style-type: none"> • Changes for MySQL Version 5.0.27 in create table statements
Feb. 2007	P. Rau	<p>Version 1.2.0</p> <ul style="list-style-type: none"> • Bug fixes and minor enhancements. • Automatically delete data (archive) pages that are older than a specified time • Display last sensor values for selectable sensors on mouse “scroll over” station icon on map display • Display last sensor values on station page as “analog gauge” or “pictogram”. • Configure which sensors to display on station page, and in which order (in table). • Configure sequence of elements shown on data or station page • Configure sequence of sensors in tables and diagrams • Configure text size and colors for diagrams • “Status Mapping” is now used to configure horiz. Bar Diagrams, Color Code diagrams and Pictogram diagrams.
March 2007	P. Rau	<p>Version 1.2.1</p> <ul style="list-style-type: none"> • Bug Fix Scheduling Export/Import for “Run Only” and “Run+Import” Jobs. • Bug Fix Export/Import with “blanks in external program name/path” • Retries on file I/O errors in SmartWeb.
March 2007	P. Rau	<p>Version 1.2.2</p> <ul style="list-style-type: none"> • UMB sensors now all set to “inactive” when new device configuration is read • For UMB device sensors: multiple selection of sensors in station sensor list dialog and pop-up menu to set selected sensors active/inactive • New Param for SmartWeb: max. number of analog gauges per line (for station pages) • New page element for station page: “New line” to separate analog gauges manually • Changed timing for communication with Opus2/HP100
March 2007	P. Rau	<p>Version 1.2.3</p> <ul style="list-style-type: none"> • Changed timing for communication with Opus2/HP100 (fix for problem setting time) • Bug fix “new station schedule entry” • Bug fix “DST change” Timestamp problem
April 2007	P. Rau	<p>Version 1.2.4</p> <ul style="list-style-type: none"> • Tests / Installation note for Microsoft ® Vista © systems • Changed “external program start” from “system()” call to “CreateProcess()” call, so no command window is opened • New Export/Import job types: “Export+Import” (without run) and “Run with external Export” (for external programs that access database directly) • Bug Fix for Timestamp problem SmartCom/Export • Improved Thread synchronization
May 2007	P. Rau	<p>Version 1.2.5</p> <ul style="list-style-type: none"> • Bug Fix “scaling analog gauges” • optimized memory usage
May 2007	P. Rau	<p>Version 1.2.6</p> <ul style="list-style-type: none"> • enhanced logging/error handling SmartWeb
May 2007	P. Rau	<p>Version 1.2.7</p> <ul style="list-style-type: none"> • Bug fix wrong attributes for archive pages (when re-generating archive pages) • “Calculated channels “ • Reports with min/max/avg/sum on day/month/year per station in SmartView3 • Reports as “page element” for station and data page • New station schedule times – every 5/10/12/20/30 minute to the full hour
June 2007	P. Rau	<p>Version 1.2.8</p> <ul style="list-style-type: none"> • Bug Fix “inconsistent horiz. Bar diagrams” when sensor values are not in regular intervals • Optimized station page update
September 2007	P. Rau	<p>Version 1.2.9</p> <ul style="list-style-type: none"> • Wake-Up message for Opus20x after establishing connection
October 2007	P. Rau	<p>Version 1.2.10</p> <ul style="list-style-type: none"> • HTTP transfer for CAM picture • Improved error handling for reading UMB device configuration

November 2007	P. Rau	<p>Version 1.2.11</p> <ul style="list-style-type: none"> • New "Calc Channel" type "DIFF" to calculate precipitation from absolute value • New "Value Map" type "Plausibility Check" for UMB Stations
November 2007	P. Rau	<p>Version 1.2.12</p> <ul style="list-style-type: none"> • New Params "Autostart Collector" and "Autostart SmartWeb" for SmartView3 • Fixed bug caused by rounding error in "DIFF" calculation • Function to delete sensor values from database
December 2007	P. Rau	<p>Version 1.3.0</p> <ul style="list-style-type: none"> • For new installation sensor values are now stored as "double" instead of "float". For older installations this can be changed manually in the database by changing the appropriate columns in "sensor_values" and "last_sensor_values". • Fix for firmware bug in UMB device class 7 (error when reading device configuration) • New param "only keep last picture" for collector -> only the last picture data is stored in table file_transfers. • Size of "station icon" now configurable via station icon element width/height • Station display ("Edit/Stations") in SmartView can now be sorted by Station-ID, Name, Type, Next-Poll, Last Data or Status by clicking on list column header, and list view is re-sized with window size • Auto-Refresh for "separate table" page of data page now does not switch to diagram page anymore. • Auto Refresh timer can now be configured for pages with auto refresh (map page, station page and data pages) • Sensors for Reports on Pages can now be configured as "Sum" sensor if they default to "min/max/avg" sensor • New function to clear logger memory for Opus200/Opus2 and HP100 devices
January 2008	P. Rau	<p>Version 1.3.1</p> <ul style="list-style-type: none"> • Bug fix "delete report" (reports could not be deleted from pages) • Bug fix "disable delete calc sensor" for non-admins (button was not disabled) • New Status Map entry for "RC Lufft Default" -> 7 = Critical • Bug fix "Enable edit status map" when called from main menu • Improved error and timeout handling for http cam picture transfers • Improved timeout handling for ftp transfers in SmartWeb • Improved semaphore (critical section) handling • New parameter "EXPORT-EXEC-TIMEOUT" and "DATA-ARCHIVE-EXEC-TIMEOUT" for SmartCom • Bug Fix size of displayed map on open of map edit dialog • New function "Reset Page" on single page of a site (not only for all pages for a site) • SmartWeb: Optimized page generation on startup and site configuration changes:: Station pages are now only updated if there is new data for the station; menu and list pages are only updated if data pages were updated (because of new data). So if there was no new data and no configuration change since last startup of SmartWeb NO pages are generated at all. • Text Elements can now be placed on Station and Data pages between diagrams etc. • Improved handling of changes to export job sensors for "since last export" time (when new export sensor is added, time starts at first available data for this sensor, not at "all available data" now) • Sequence for link entries in "station list", "data page list" and "archive page list" can now be changed • Sensor value type (min/max/avg....) is now shown in line diagram legend and table header. • Modem-Pool is now displayed in "Station List" • New station type "IMPORT"
February 2008	P. Rau	<p>Version 1.3.2</p> <ul style="list-style-type: none"> • Improved calc channel (diff) performance • Fixed problem with combining log files at day break • Fixed display of log file size in Collector setup dialog • Improved timer handling (using TickCount() instead of absolute time wherever possible) • Corrected error messages • Reduced error messages for Opus200 on successful retries when reading logger data • Limited "retries within retries" for reading Opus200 logger and EEPROM

		<p>data</p> <ul style="list-style-type: none"> • IRS21 Diag Sensors are now set "inactive" for Opus200 on default. Sensor values are still read from device if "diag" is active, but (inactive) sensors are not included in SmartWeb configuration.
February 2008	P. Rau	<p>Version 1.3.3</p> <ul style="list-style-type: none"> • Show (UMB) error code in sensor status and tables • Improved error messages for export/import (include job id/name) • Force a "close database" on station poll thread timeout, and on "collector inactivity timeout" (-> special error handling for customer problem application "hanging" in DB access)
February 2008	P. Rau	<p>Version 1.3.4</p> <ul style="list-style-type: none"> • Bug Fix: when saving last sensor value in separate table, now the latest timestamp from a list of values is used instead of the last value in the list (problem with un-sorted import, e.g. Venturia plant disease model) • For UMB Stations: when reading device/sensor configuration from station for the first time, it is checked if a device of this type and version is already stored in the database. If so, the sensor configuration is copied from the database instead of read from the device. • New station state "Saving Sensor Config" when saving the sensor configuration read from a station • Optimized saving of sensor configuration for a station (assignment of sensor types etc..) • Improved error handling on (remote) database connection problems • Changed IPC host to "localhost" if all programs run on local computer (no network connection needed; IPC does not fail anymore if network connection goes down for whatever reason)
March 2008	P. Rau	<p>Version 1.3.5</p> <ul style="list-style-type: none"> • Bug Fix "Critical Section" for Windows2003 Server
March 2008	P. Rau	<p>Version 1.3.6</p> <ul style="list-style-type: none"> • Specify number of pictures to keep for each cam station • Bug fix "Critical Section Handling"
March 2008	P. Rau	<p>Version 1.3.7</p> <ul style="list-style-type: none"> • Bug Fix DB access for new Export Job starting "last export" • Cam Picture Archive • Improved error logging for critical sections
March 2008	P. Rau	<p>Version 1.3.8</p> <ul style="list-style-type: none"> • Additional/Changed error checking for critical sections
March 2008	P. Rau	<p>Version 1.3.9</p> <ul style="list-style-type: none"> • Bug-Fix "deleting archive pages on config change of page" • Change station page and data page names for a station if station name changes
		<p>Version 1.3.10</p> <ul style="list-style-type: none"> • Consistency check site sensor configuration with active/configured station sensors • Improved Opus200 communication for bad line quality links • Fixed bug calculating measurement times if "specific offset to UTC" is configured for station
March 2008	P. Rau	<p>Version 1.3.11</p> <ul style="list-style-type: none"> • Changed automatic re-generation of archive pages (if a new sensor/diagram is added or data for archive page is now available) not to re-generate all archive pages, but to start with archive page for which we actually have new data, i.e. if a new sensor is added to the station/data page, only the current page will be affected (and no archive pages will be re-generated)
April 2008	P. Rau	<p>Version 1.4.0</p> <ul style="list-style-type: none"> • Improved error handling for Opus200 station (reading logger data) • Logical Sensor Types (Sensor Type Templates) • Templates for Export/Import Jobs • Templates for station and data pages • Links to "data pages" for a station on station page • Table with last sensor values for each station on "Overview" page • Status Mapping color code shown in tables • Sensors don't need to be maintained on "page" level anymore (only assigned to page elements now)
April 2008	P. Rau	<p>Version 1.4.1</p> <ul style="list-style-type: none"> • Dialog to assign logical sensor type added to station's sensor list dialog • Fixed scrolling problem for dynamic dialogs when dialog size exceeds screen size
April 2008	P. Rau	<p>Version 1.4.2</p> <ul style="list-style-type: none"> • Bug Fix entries menu "Setup" when Edit/Stations or Edit/Web-Site is opened • Bug Fix "Edit Log. Sensor Type"
April 2008	P. Rau	<p>Version 1.4.3</p>

		<ul style="list-style-type: none"> Bug Fix Export "since last export" (saving export job might have changed last_export_date for sensor) Optimized database updates for export jobs (updating last_run/next_run for job and last_export for export sensors, last_import for import sensors)
May 2008	P. Rau	<p>Version 1.4.4</p> <ul style="list-style-type: none"> New Export Data Start "last value only" Allow configuration of Import sensors for Export Job type "Run (external export)" Bug fix sensor error values in horiz. Bar Diagrams Don't display last sensor values on overview table if station could not be polled Display station name without additional "Station" text in overview table
June 2008	P. Rau	<p>Version 1.4.5</p> <ul style="list-style-type: none"> Bug fix overview table Bug fix sensor status in station page table
June 2008	P. Rau	<p>Version 1.4.6</p> <ul style="list-style-type: none"> When "re-calculating calc channel for all available data", the calculation is now broken down to daily intervals instead of reading/calculating/writing all available data for a sensor in one block to handle large amount of data for a sensor better Import can handle date/time values without leading zeros now
August 2008	P. Rau	<p>Version 1.4.7</p> <ul style="list-style-type: none"> Bug fix Data Archive Job run every year Bug fix "Delete Pages older..." Bug fix displaying last sensor status (error/alarm) on Station page Alarm via SMS Alarm on Status New Alarm handling – Repeated alarms only after configured time. Minimum time between alarms. Working hours for alarm recipients. Changed retry handling on reading Opus20x EEPROM and Logger-Data (more "inner" retries on invalid blocks, no "inner" retries on no response)
August 2008	P. Rau	<p>Version 1.4.8</p> <ul style="list-style-type: none"> Support for TLSolP stations
September 2008	P. Rau	<p>Version 1.4.9</p> <ul style="list-style-type: none"> New "Calc Channel" to calculate saline concentration from freeze temperature Default for log files now without "<date>" tag (not kept on a daily basis) Connection type "Import" for Import stations "Display Time Offset" for stations – time offset relative to SmartWeb server time to be used by SmartWeb when displaying data (if stations for a web site are in different timezones)
September 2008	P. Rau	<p>Version 1.4.10</p> <ul style="list-style-type: none"> Bug Fix: applying UMB device configuration from database to additional (second) station with same type
October 2008	P. Rau	<p>Version 1.4.11</p> <ul style="list-style-type: none"> Bug Fix editing "station information" items on station page Show license user name in program title bars Dew point calculation now returns additional values for saturated vapor pressure and water (actual) vapor pressure "Accounting" for SMS Alarms (number of alarms sent per recipient) New param for Export Job (delete all values from import sensors – for road condition forecast integration) New "Template" Export Jobs for Dewpoint (with vapor pressure) and Road Condition Forecast Fixed Problem with updating "Archive Pages" (caused by "future" forecast data)
November 2008	P. Rau	<p>Version 1.4.12</p> <ul style="list-style-type: none"> Sending SMS messages now done via external program "SendSMS" (workaround for possible memory leak in gsm library)
November 2008	P. Rau	<p>Version 1.4.13</p> <ul style="list-style-type: none"> Support for "Boschung File Interface" (via FTP) Bug Fix: memory leak on ftp connect errors Bug Fix "error accessing database" when editing export job Improved Error Messages for invalid local filenames on HTTP Transfer errors
November 2008	P. Rau	<p>Version 1.4.14</p> <ul style="list-style-type: none"> Improved Exception Handling in SmartWeb Improved Exception Handling for HTTP Transfer
December 2008	P. Rau	<p>Version 1.4.15</p> <ul style="list-style-type: none"> Fix for wrong timestamps for "Boschung File" stations on daybreak

		<ul style="list-style-type: none"> • Additional range-check for TLS sensor values from Boschung files • Bug Fix for SmartWeb Overview Table – spacing between tables (depending on number of stations in table) • Overview page now shows station status “warning” or “alarm” or “error” instead of “error/alarm” • New params for SmartWeb (SHOW-SENSOR-ERRORS and SHOW-LAST-VALUES-ON-ERROR) • Bug Fix “Alarm Values” in Tables when using status mapping (and not min/max values) • Boschung File Interface: now always overwrite existing values • New value mapping type “offset + scale” (first add offset, then scale value) to calc snow height from mA • Support for new plant disease model calculations via Export/Import Templates and Page (Element) Templates • Bug Fix “SmartWeb crash/loop” with prognosis data on daybreak
January 2009	P. Rau	<p>Version 1.5.0</p> <ul style="list-style-type: none"> • Data Timeout for Boschung File Interface Stations (show as “communication error” if there is no data from the station for a configurable time period) • Overview (table) and station page now show “Error” correctly if a device did not respond (or a TLS station reported an error condition for a sensor) • Fixed displaying “%” unit in analog gauges • 10 day interval for data pages and reports • new “Sum Channel” attribute for station sensors which is used in SmartView3 station “reports” to sum a channel (instead of calculating average values) • fixed bug in displaying last sensor value in station sensor list • Complete german translation for SmartView3 • Database table description now in external document
February 2009	P. Rau	<p>Version 1.5.1</p> <ul style="list-style-type: none"> • Bug fix showing last sensor value in pop-up on map when sensor is in error status • Calc-Channels: if the source sensor is in error status, no value is calculated and the calc channel is set to an error status as well • When reading a station’s sensor configuration from the station the already assigned logical sensor types are not overwritten with default values anymore • Overview table: when logical sensor types have been assigned, sensor values from different stations are shown in same column even if value type (min/max/avg/act) does not match. • Import sensors can be deleted from station configuration if they are not used in an export/import job • Bug Fix: delete all configuration data for an export job when deleting export job
February 2009	P. Rau	<p>Version 1.5.2</p> <ul style="list-style-type: none"> • Bug fix in reports when sensor has error status • Suppress writing of sensor values for Opus200 stations when block “channel mode” does not match configured channel mode • New function to check/delete obsolete sensor values from database
February 2009	P. Rau	<p>Version 1.5.3</p> <ul style="list-style-type: none"> • Reports: calculate „minimum“ or „maximum“ values for report intervals for channels that have a measurement type „minimum“ or „maximum“ respectively (instead of calculating the average value). • Value-Mapping type plausibility-check now for all station types configurable • 10 day interval now always starts at the first day of a month divides the month in 3 “decades” – i.e. the last decade can be 8,9 (February) , 10 or 11 (for months with 31 days) days long • new function “Error Mapping” to map sensor error codes
March 2009	P. Rau	<p>Version 1.5.4</p> <ul style="list-style-type: none"> • new Export Job Template for surrogate model IRS21 • Bug fix export/import with blanks in path/filenames when running external program
March 2009	P. Rau	<p>Version 1.5.5</p> <ul style="list-style-type: none"> • Fixed display of last measurement value in station’s sensor overview.
April 2009	P. Rau	<p>Version 1.5.6</p> <ul style="list-style-type: none"> • Correcting Timestamps for TLS (Boschung) stations when DST settings for station and SmartView differ • Improved parsing of Opus200 logger memory when reading values • Improved error logging and some changes to memory management
June 2009	P. Rau	<p>Version 1.6.0</p> <ul style="list-style-type: none"> • Bug Fix standard library problem / update to new compiler and library

		<p>versions; Improved memory management..</p> <ul style="list-style-type: none"> • UTC timestamps now 64 bit program internal / 32 bit unsigned in database (allows timestamps until 2100) • New station types "MSSI" and "MSSI-Camera" • Bug Fix: assign camera to „import“ station • Camera can now be assigned to multiple stations (all affected station pages are updated)
July 2009	P. Rau	<p>Version 1.6.1</p> <ul style="list-style-type: none"> • Bug Fix SmartWeb
July 2009	P. Rau	<p>Version 1.6.2</p> <ul style="list-style-type: none"> • Improved connection status handling for TLSolP stations • Camera group status page(s)
August 2009	P. Rau	<p>Version 1.6.3</p> <ul style="list-style-type: none"> • Fix for TLS Channel Numbers > 31
August 2009	P. Rau	<p>Version 1.6.4</p> <ul style="list-style-type: none"> • Adjustments for IE 8 (Overview page – placement of station icons)
September 2009	P. Rau	<p>Version 1.6.5</p> <ul style="list-style-type: none"> • Bug-Fix Collector crash caused by new MFC library call behavior - Improved error handling for "CRT parameter errors"
September 2009	P. Rau	<p>Version 1.6.6</p> <ul style="list-style-type: none"> • Support for MSSI Station Status (Door Contact, Power Failure etc.)
October 2009	P. Rau	<p>Version 1.6.7</p> <ul style="list-style-type: none"> • Allow value 0xFFFF for TLS FG 3 DE 56 (wind direction) • Allow change of sequence for stations on overview table • Export type "TLS Trace" • Bug fix memory leak for export job type "run external export" • Show station IP for connected TLSolP stations • Param for number of stations per "row" on group status page
October 2008	P. Rau	<p>Version 1.6.8</p> <ul style="list-style-type: none"> • Bug fix: alarm param "send ok messages" not always processed properly
October 2009	P. Rau	<p>Version 1.6.9</p> <ul style="list-style-type: none"> • New library version "ChartDir50.dll" • Grid for 0-line in line diagrams wider • (optional) auto repair crashed table "sensor_values"
October 2009	P. Rau	<p>Version 1.6.10</p> <ul style="list-style-type: none"> • wider "0 lines" now under (and not over) curves for measure values • optional auto repair crashed table "file_transfers" • find gaps in measure values from stations
November 2009	P. Rau	<p>Version 1.6.11</p> <ul style="list-style-type: none"> • confirm deleting export job • preserve station icon position on map when changing order of station icons • Enhanced Error mapping – if error mapping results in „no value“ for a sensor, the sensor status is not set to „error“ anymore
November 2009	P. Rau	<p>Version 1.6.12</p> <ul style="list-style-type: none"> • Export Job: Run every 15 minutes • Export job "run external export" allows ftp configuration • Changed time interval calculations for rows in reports/calc channels that are shorter than one day • Bug Fix: sorting of entries on archive list page • Special "N/A" value configurable for sensor type
November 2009	P. Rau	<p>Version 1.6.13</p> <ul style="list-style-type: none"> • Bug fix db access – inserting new device sensor types
December 2009	P. Rau	<p>Version 1.6.14</p> <ul style="list-style-type: none"> • Some database columns will now be created as (or converted to) "longblob" instead of "varchar" to store the associated string as 16 bit Unicode (in hex) instead of an Ascii string. See database description for details. • Bug Fix timestamp month calculation • Bug Fix interval calculation for daily reports and configuration dialog for report intervals on station page • Bug Fix Repeating Alarms for sensor error condition
December 2009	P. Rau	<p>Version 1.6.15</p> <ul style="list-style-type: none"> • Bug-Fix calculating daybreak value when importing data
January 2010	P. Rau	<p>Version 1.6.16</p> <ul style="list-style-type: none"> • Timeout configuration for MSSI Cam Stations • Minimum time between page generations
January 2010	P. Rau	<p>Version 1.6.17</p> <ul style="list-style-type: none"> • Ignore inactive sensor channels when calculating last export time • Enable "value mapping" for min/max/avg/sum calc channels
January 2010	P. Rau	<p>Version 1.6.18</p>

		<ul style="list-style-type: none"> Improved error handling on DB error for TLSolP station
June 2010	P. Rau	Version 1.6.19 <ul style="list-style-type: none"> Bug fix repors Optional deletion of export files after successful ftp transfer Optimized internal "log buffer"
June 2010	P. Rau	Version 1.6.20 <ul style="list-style-type: none"> Close process/thread handles after running external program (e.g. in export/import)
June 2010	P. Rau	Version 1.6.21 <ul style="list-style-type: none"> Fixed handling of MSSl Cam settings
August 2010	P. Rau	Version 1.6.22 <ul style="list-style-type: none"> Export job templates for "alarm road condition" and "snow height" models New calc channel type "incremental sum" Improved backup (no table locking for innodb tables) Use MySQL default database engine instead of "MyISAM" Corrected displaying serial port settings in station configuration dialog
October 2010	P. Rau	Version 1.7.0 <ul style="list-style-type: none"> New "system" parameter to control interval start/end in calculations (reports) NTCIP stations via TCP/IP and PPP NTCIP cameras via TCP/IP and PPP
October 2010	P. Rau	Version 1.7.1 <ul style="list-style-type: none"> Improved "last data" display on overview/map page (especially for stations type import)
October 2010	P. Rau	Version 1.7.2 <ul style="list-style-type: none"> Corrected TLS timestamp calculation on day of DST change (from DST to standard time)
January 2011	P. Rau	Version 1.7.3 <ul style="list-style-type: none"> Don't set sensor channels to "error " for Opus2 communication errors Changed order of main menu entries for "station" and "data" page lists Fixed problem with NTCIP sensor configuration for "table" OIDs
February 2011	P. Rau	Version 1.7.4 <ul style="list-style-type: none"> Bug-Fix for display time offset on horiz. bar diagrams on station pages
April 2011	P. Rau	Version 1.7.5 <ul style="list-style-type: none"> Bug-Fix for display time offset in reports on data pages
April 2011	P. Rau	Version 1.7.6 <ul style="list-style-type: none"> Bug-Fix applying setup parameter "second offset for reports" to all modules
May 2011	P. Rau	Version 1.7.7 <ul style="list-style-type: none"> New param "round times" for reports (SmartWeb) Bug fix "timestamps in reports" (SmartWeb) udp port configurable for NTCIP Stations calc channel offset may not be bigger than calc channel interval
July 2011	P. Rau	Version 1.7.8 <ul style="list-style-type: none"> MSSl: added transmission of prognosis data NTCIP: support "precipitation start/end time" OIDs NTCIP: support transmission and display of meta-data for station and sensors
July 2011	P. Rau	Version 1.7.9 <ul style="list-style-type: none"> New predefined logical sensor types for TLS FG6 DE48/221/222 New status map templates for TLS FG6 DE48/221/222
August 2011	P. Rau	Version 1.8.0 <ul style="list-style-type: none"> Calculate position for station icons on map from GPS coordinates Separated configuration for map station icons and overview table (stations and sensors may be different) Station may be removed from map / overview table and still be part of site Multiple / linked map pages Optional automatic scaling of map to browser window size Show "cam only" stations in SmartWeb Icons for Stations with cam / cam only on maps Delete obsolete sensor values optionally without user confirmation SmartWeb menu optional as "popup" menu Bug Fix: problem with creating tables in MySQL V 5.5 Support for new user defined TLS data types 183,184,185 Multi-Select sensor channels in station sensor list dialog for "edit" operation as well as activate/deactivate sensor channel Consistency check for cache with last sensor values
September 2011	P. Rau	Version 1.8.1 <ul style="list-style-type: none"> Improved station icon positioning for Opera browser

		<ul style="list-style-type: none"> Bug fix: creating directories on fully qualified network share names (<code>\\<server>\<share>\...</code>)
October 2011	P. Rau	<p>Version 1.8.2</p> <ul style="list-style-type: none"> Bug Fix: limit stations that can be selected on data page to data stations that are part of web site Alarm Status "Warning Fuel Cell Fuel Level" Bug Fix: unit assignment for UMB "in" sensor channel Enhanced error handling/retries for UMB stations Hierarchical grouping of stations (for SmartWeb Menu/List pages) Improved SmartCom startup/export job status display (speed)
October 2011	P. Rau	<p>Version 1.8.3</p> <ul style="list-style-type: none"> Value mapping for "N/A" value with different source sensor Bug fix Links to Archive list pages in Archive Menu page/Popup Menu
October 2011	P. Rau	<p>Version 1.8.4</p> <ul style="list-style-type: none"> Export for Camera pictures SmartWeb: only show groups that contain pages (stations) SmartWeb: ftp transfer in depended from page generation Improved export/website configuration handling (performance)
October 2011	P. Rau	<p>Version 1.8.5</p> <ul style="list-style-type: none"> Improved display of last cam picture on station and cam group page (for slow ftp transfers) Fixed problem generating archive list page for diagram page
October 2011	P. Rau	<p>Version 1.8.6</p> <ul style="list-style-type: none"> Allow adding station information for new station page templates Allow removing station information from station page and station template page Fixed: removing station from website does not always remove station page
November 2011	P. Rau	<p>Version 1.8.7</p> <ul style="list-style-type: none"> Improved handling of templates for export jobs type camera export Wind direction / compass display with cardinal direction Default status mapping for wind direction with cardinal direction Inactive stations are shown in gray/without error indicator on maps
November 2011	P. Rau	<p>Version 1.8.8</p> <ul style="list-style-type: none"> Color for inactive stations "silver" instead of "gray" (problem with IE7) Improved parsing response for OpusII "CheckMonitorMode" Optimized "site changed" handling for SmartWeb Improved detection of "station change" event to trigger update of station page
December 2011	P. Rau	<p>Version 1.8.9</p> <ul style="list-style-type: none"> Improved error handling in FTP client to create non-existent directories Improved error handling in SmartWeb ftp thread Changed colors in tables for station stati "communication error" and "sensor error" (better distinction from "alarm" = red...) Enhanced timeout handling in FTP Client
December 2011	P. Rau	<p>Version 1.8.10</p> <ul style="list-style-type: none"> Copy local file to temp file before FTP transfer (avoid access errors when file is overwritten) "Edit" Button in "Select Page Element Sensor Dialog" enabled for all page element types Fixed handling for "sum channel in reports" page element sensor attribute
December 2011	P. Rau	<p>Version 1.8.11</p> <ul style="list-style-type: none"> Bar graph (multiple sensor channels) on station page for current values (e.g. for vehicle data) Set MSSSI sensor channels that were deactivated in device (LCom) to "inactive" and allow deleting of inactive MSSSI sensor channels New param for reports – show row times "from/to" Report params now all on "smartweb options" dialog
December 2011	P. Rau	<p>Version 1.8.12</p> <ul style="list-style-type: none"> Improved error handling for SMTP (alarm email) authentication Corrected calculation for working hours Fixed: apply changes to alarm settings for import sensors at run time immediately Colors for station stati configurable; blinking of station icons for "poll error" and "sensor error"
January 2012	P. Rau	<p>Version 1.8.13</p> <ul style="list-style-type: none"> Improved Error Handling when reading NTCIP station meta data (don't fail on missing mandatory OIDs – set missing OIDs to 0 or empty string) Optional statistical values (standard derivation and variance) in reports
March 2012	P. Rau	<p>Version 1.8.14</p> <ul style="list-style-type: none"> Improved "abort transfer" for MSSSI stations.

		<ul style="list-style-type: none"> • Added 5 poll interval 5 seconds • CSV Export: header names in UTF8 (support for Chinese names) • SmartWeb: params for GDI and ChartDirector font names with default values depending on installed fonts (arial/arial Unicode)
April 2012	P. Rau	<p>Version 1.8.15</p> <ul style="list-style-type: none"> • Fixed problem calculating poll interval < 1 minute • Added default sensor type assignment for NIRS • Added default status mapping for NIRS road weather index
September 2012	P. Rau	<p>Version 1.9.0</p> <ul style="list-style-type: none"> • Group-Status Page: background color for inactive stations • Enhanced logging for TLSolP stations • Set default port for NTCIP CAM to 0 • Show "page element edit dialog" when adding a station to a web site (select sensor channels for station icon on map) • SmartWeb: write all local files to temporary files first (avoiding conflict with Webserver) • Improved trigger for map page generation (additional map pages) • Support google maps • Support for "Mobile NIRS" stations • New Intervals (1,2,3,4 hours) for Diagrams on Station pages