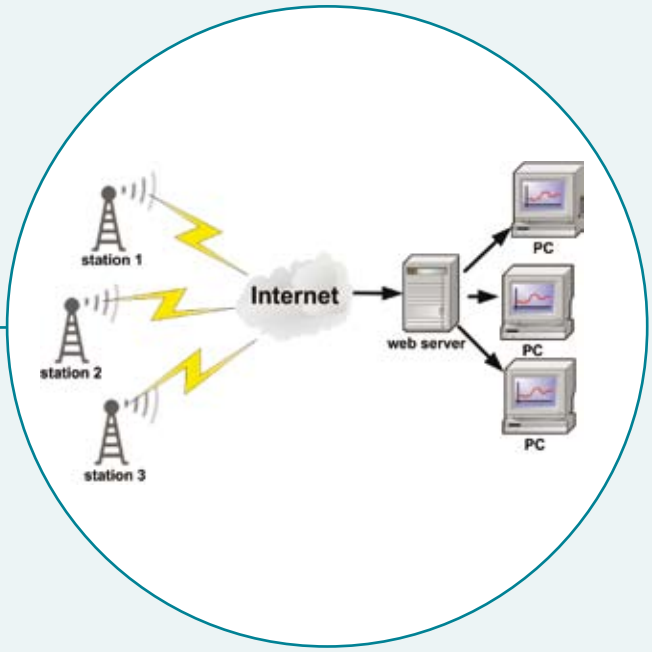
PRODUCT INFORMATION

sommer
MESS-SYSTEMTECHNIK

MDS

Measured Data Server
Online Measurement Network



Properties and Benefits

- Unlimited access to your data via Internet
- Measured data can be transferred online in minute intervals
- Economical transfer of measured data
- Redundant query path for more security
- Central storage via FTP server or MDS measured data server with data base system
- Visualization of measured data via web browser
- Defined access rights per user, up to the station level
- Easy integration into existing systems
- Optimized energy requirements for use away from all infrastructures

General

How does the data get from the point of measurement or the measuring station site to the user, who assesses the data in order to reach a decision? At this point, everyone wishes data transfer that is quick, current, economical and reliable.

With the possibilities of modern ITC technologies, we offer customer-specific solutions, whereby the measured data from any measuring station or site is transferred to a web server via Internet. The web server receives and stores the data, and makes it available for further processing.

According to each customer requirement, we make available two versions for realization, with a web server “ftp” or “measured data server”.

„ftp“ Version	“MDS – Measured Data Server“ Version
The data transfer is carried out to a defined FTP web server. The further processing of the measured data is carried out by the system of the customer.	**Complete solution of the data transfer, data storage and archiving, from the data evaluation up to reporting and alerting.**

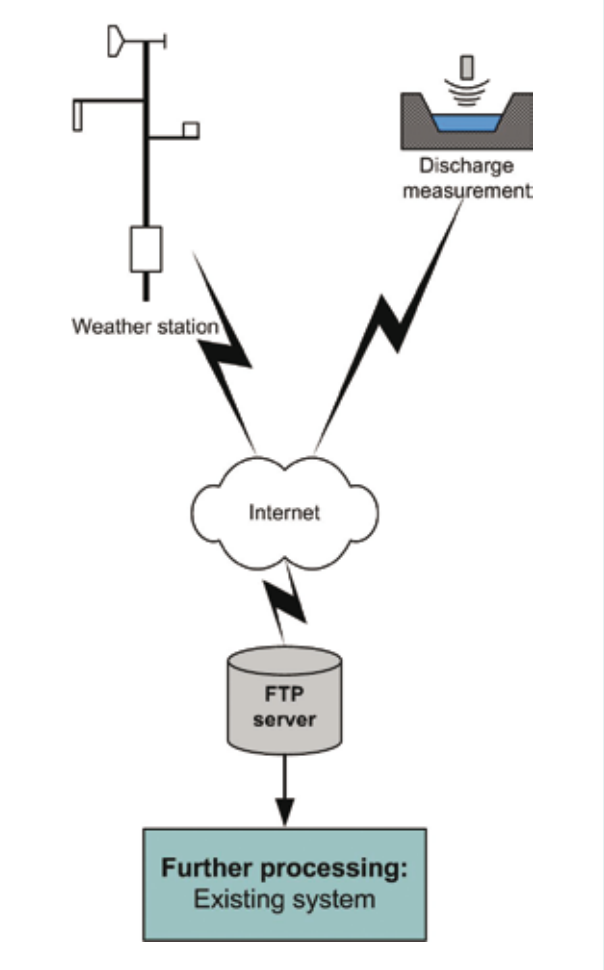


Fig. 1: General “ftp” simplified diagram

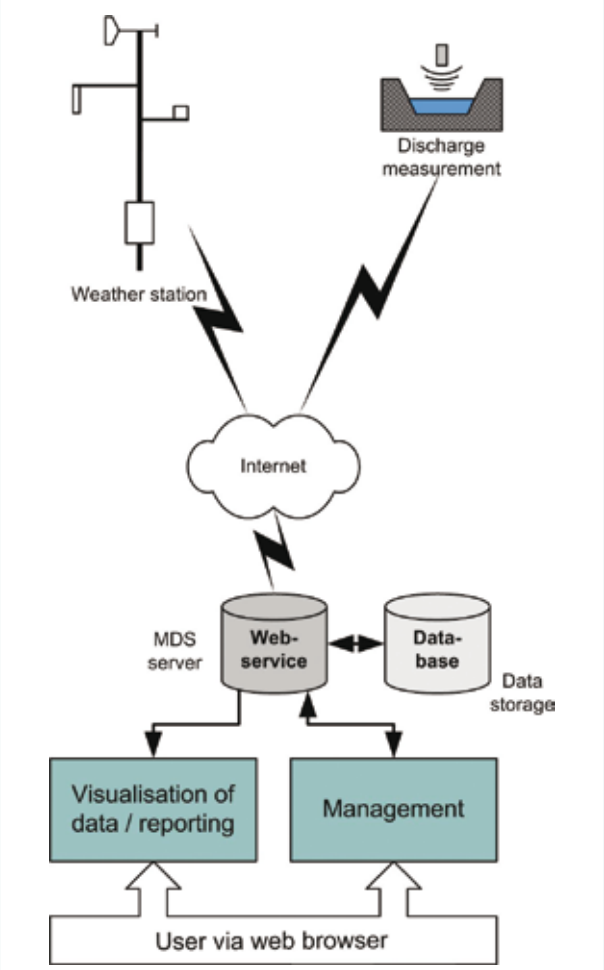


Fig. 2: General “Sommer measured data server” simplified diagram

“ftp“ Version

In order to upgrade the existing systems to online measuring networks, without altering the existing structure for further processing, only the query path is replaced. By upgrading the existing Sommer data logger of the “MRS-4” or “MDL” series via the data-communication module DCM, the data is transferred to a FTP web server by means of a GPRS connection. Through the programming of the interface driver, other data loggers can be connected. The FTP server makes the data available for further processing in an open ASCII format (CSV).

When the GPRS connection is disrupted or interrupted, the measured data can be transferred via a redundant query path, by means of GSM data call, in order to minimize downtime.

The parametering is carried out via GSM connection, using the Sommer query software DataWin.

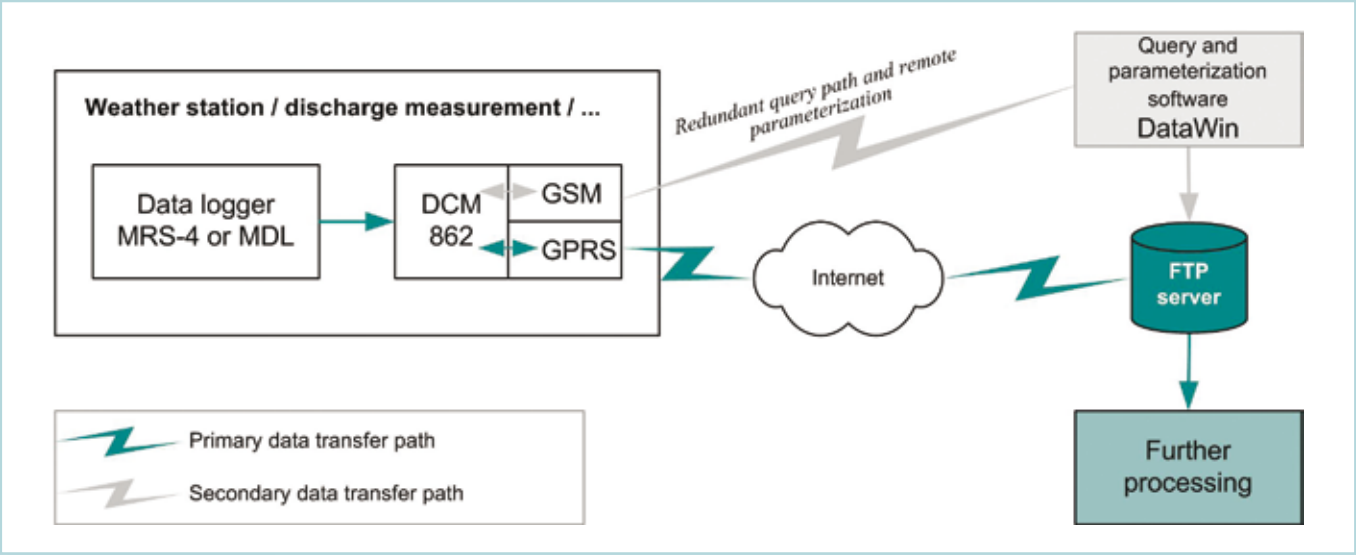


Fig. 3: Details of the simplified diagram for the “ftp” version

Transfer procedure

The communication module DCM 862 establishes a GPRS connection to any selected FTP server and maintains the connection. With GPRS the quantity of data is invoiced, rather than the duration of the connection. In a freely definable interval, the communication module DCM 862 communicates with the data logger, in order to query current data and to transfer it, at a another transmitting interval that can be set independently, to the FTP server. In order to assure the security of the system, the transfer procedure is monitored for completeness. When problems occur or when the transfer has been terminated, the data is cached and the data transfer is resumed.

Data formats

The data format used for the transfer and the storage on the FTP server is optionally either the transfer-optimized CSV format or the structured XML format “xHydro”. We recommend data transfer in the CSV format, in order that the quantity of data to be transferred (lower costs) and the duration of the data transfer (less energy consumption) is kept at a minimum.

Parametering and redundant transfer path

For the parametering of the measuring station and data logger, a GSM connection to the station is established by the Sommer software DataWin, via modem call. The parametering of the data communication module is also carried out via a GSM data call and a HyperTerminal program. The GSM connection serves as a redundant query path of the measured data. The data is the stored in the same manner on the defined FTP server.

“MDS – Measured Data Server” Version

The module for the complete solution for a measuring network, from data transfer to evaluation. Existing systems can also be upgraded with this engineering through extension with the communication module DCM 862. By means of programming the interface driver, any type of data logger can be used.

The measured data server includes the web service for receiving the measured data via Internet connection, storage of data in a data base system, data service for management, as well as data visualization, and optionally the professional analysis software MetWin.net. The controls are carried out via a web browser interface, and in this manner no program installation is necessary and the data is available at all times and everywhere to several users.

For professional analysis and visualization of measured data, the analysis software MetWin.net is also available via the web browser.

When the GPRS connection is disrupted or interrupted, the measured data can be transferred via a redundant query path, by means of GSM data call, in order to minimize downtime.

The parametering is carried out via GSM connection, using the Sommer query software DataWin.

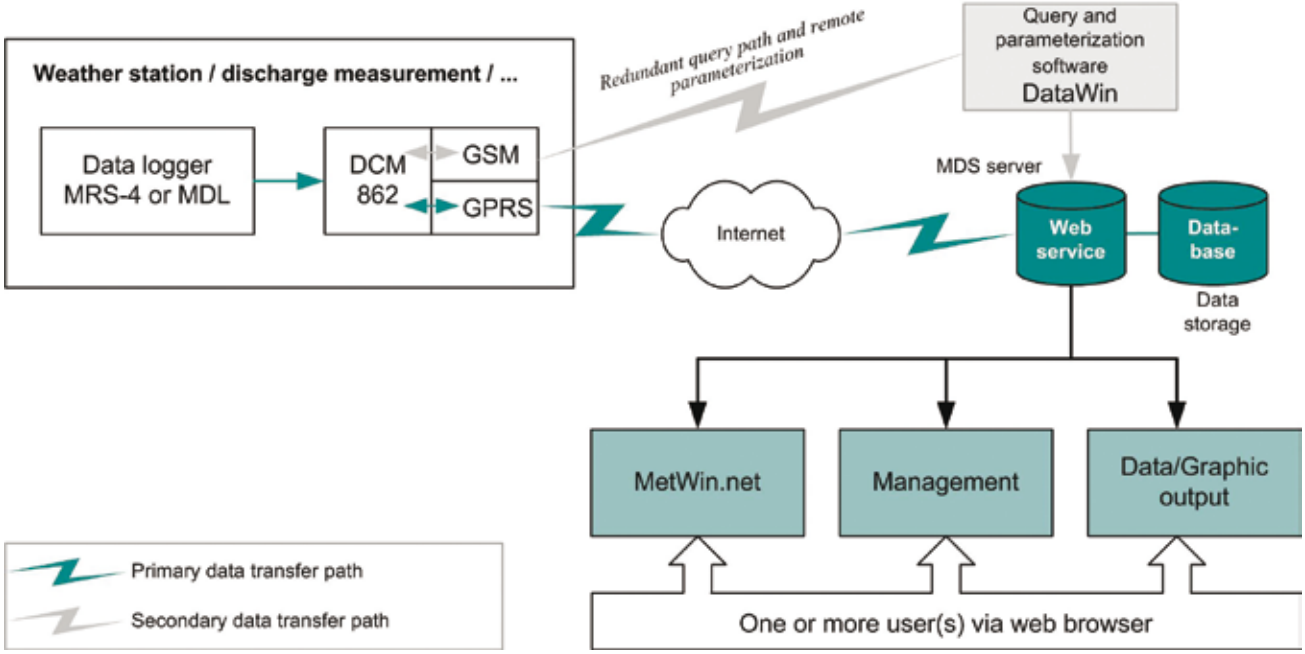


Fig. 4: Details of the simplified diagram for the “measured data server” version

Transfer procedure

The communication module DCM 862 establishes a GPRS connection to the measured data server and maintains the connection. With GPRS the quantity of data is invoiced, rather than the duration of the connection. In a freely definable interval, the communication module DCM 862 communicates with the data logger, in order to query current data and to transfer it, at a another transmitting interval that can be set independently, to the measured data server. The web service on the measured data server receives the data, assigns it to the corresponding station, and stores the measured data in the database. In order to assure the security of the system, the transfer procedure is monitored for completeness. When problems occur or when the transfer has been terminated, the data is cached and the data transfer is resumed, so that complete streams of data are available.

Data formats

The data format used for the transfer to the measured data server is based upon the http-protocol. In a freely definable interval, the communication module DCM 862 transmits the measured data to the web service of the measured data server. The web service is based upon the Apache HTTP server, in combination with the MySQL database system for storage of measured data. The measured data is archived in a relational database and is available to the user at all times. For a further processing in other systems, there is the possibility of the extension of the existing web service.

Parametering and redundant transfer path

For the parametering of the measuring station and data logger, a GSM connection to the station is established by the Sommer software DataWin, via modem call. The parametering of the data communication module is also carried out via a GSM data call and a HyperTerminal program. The GSM connection serves as a redundant query path of the measured data, whereby the data is also transmitted to the measured data server and processed by the web service.

Data Service

The data service consists of tools for the management of the measuring station and the visualization of the measured data. All functions of the Sommer data service are controlled via a web browser, meaning that the user requires no installation of an additional program for the graphic depiction and analysis of data.

The consistent application of the web technology allows the user to access and analyze measured data everywhere and at all times.

- Measuring station and user management
- Graphic depiction of measured data
- Comparative graphic depiction of a station's measured data
- Station overview via map
- Linking of current measured data graphics to external web sites, for example a homepage.
- Export of the measured data in CVS or ROH format for further processing

Measuring station and user management

Only subsequent to a user logging on with a password is it possible to access measured data. In order to guarantee a secure access to the data of the various measuring stations, . access rights can be assigned. The administrator creates a measuring station and releases this for specific user groups or for all users. The administrator manages the measuring stations, user groups and users. A user may only view the measured data from stations and prepare this graphically in diagrams as desired.

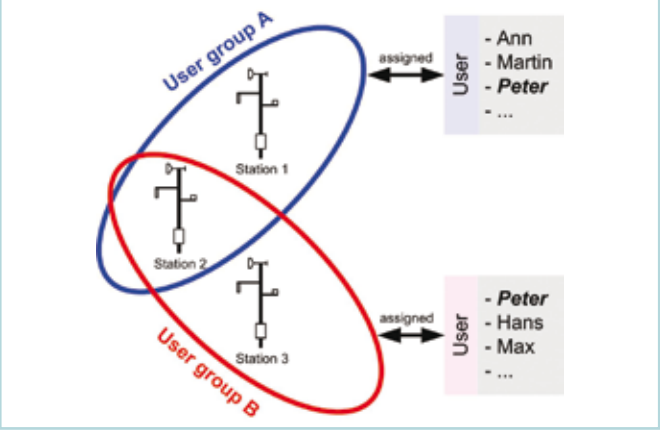


Fig. 5: Station 1 and 2 are assigned to user group A. This user group is assigned the users "Ann", "Martin" and „Peter". Since the user "Peter" is also assigned to user group B, he is authorized to view all stations.

Graphic processing of measured data

For each measured value, a detailed graphic (see Ill. 6) is displayed, whereby the following settings can be carried out:

- Measured data depiction as a linear graphic
- Autoscaling or freely definable axes
- 3 adjustable limiting values
- Zoom function – Size of the graphic is adjustable
- Saving of graphic settings
- Integration of current graphics in external home-

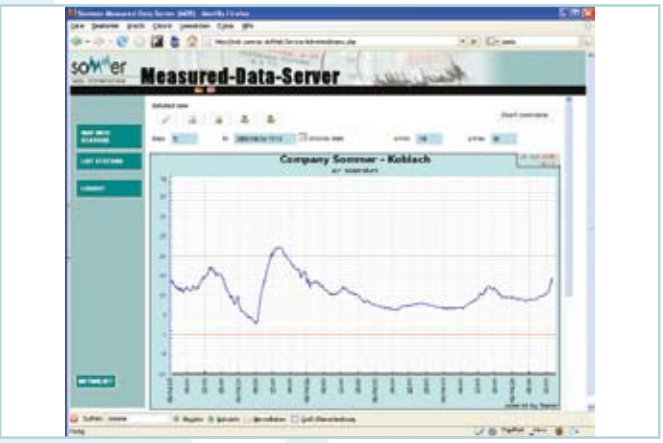


Fig. 6: Graphic for air temperature measured value with 2 limiting values

Comparative graphic depiction of measured data

For a quick overview of a measuring station, the display of all or specific measured data. (see Ill. 7). All that is needed to open a specific detailed view is a mouse click on the corresponding graphic.

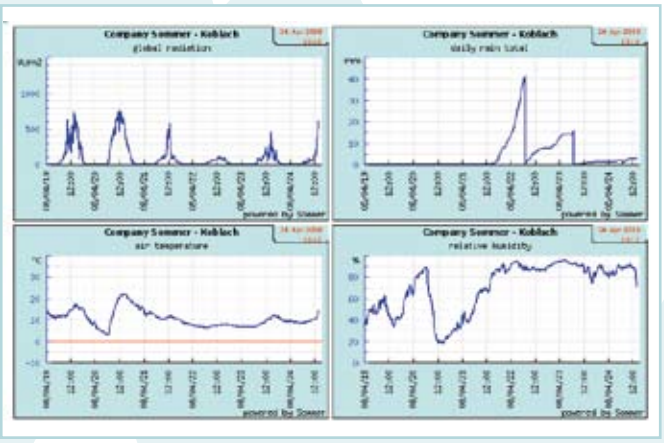


Fig. 7: Displayed overview of several measured values of a station

Saving of graphic settings

So that the optimal setting for a graphic does not need to be made each time, graphic setting can be saved, per measured value for each user. With standard settings that can be saved for each measured-value graphic, the user view can be predefined.

Station overview via map

When a geographic position has been defined for a measuring station, it appears clearly via Google Maps with the familiar zoom functions, maps and satellite image. When the geographic position is not known, this can be easily determined using Google Maps. By clicking on a station on the map, a window with the current actually values, general information, and link to a graphic display of curves are loaded (see Ill. 8). For quick navigation, the relevant station can be zoomed in on the map via the selection menu.

Fig. 8: Station overview via map, with details of a measuring station.

Export / Download of measured data

For the further processing of measured data, it is possible to export data per station in the CSV format for Microsoft Excel or ROH format for software of the firm Sommer. (See Ill. 9).

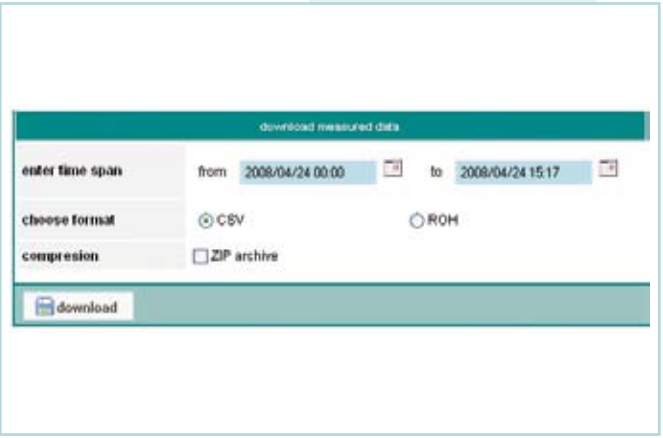


Fig. 9: Data export of all measured variables of a measuring station

MetWin.net

This is the software for professional analysis and visualization of measured data, which can be accessed via web browser. The following functions are available:

- Display of measured curves: lines, compass dial, profile, map graph, scatter plot (X-Y)
- User defined display of measured curves
- Several measured curves in a graphic
- Zoom function, marker, marker run synchronously in all measured curves for comparison
- User defined templates
- Data for several measuring stations in one graphic
- Open several measuring station simultaneously
- Graphic output to printer or image file
- Function manager
- Management of favourites

Display of measured curves

The graphic display of measured data in a limitless number of diagrams. One or several data series are displayed per diagram. With the help of the marker, the curve is “taken off” with the simultaneous display of measured values. The value and time axes can be automatically scaled or freely adjusted. There is a comprehensive selection of diagram displays, such as linear graph, scatter plot (discharge curves, for example), profile display, snow temperature for example, as well as complex text graphs, with freely definable function calculations via the function manager.

Templates

In order to accomplish fast work with recurring analysis procedures with measure data with greater ease, in the layout mode any number of diagrams with corresponding measured variables is created and saved as a template (see Ill. 12). When a template is accessed, all graphics and data are loaded and displayed at one time.

Text graph – Map graph

In order to obtain a quick overview of the measured data, a text or graphic display is offered via a freely definable function. The display of measured values or calculation, which appear with certain limiting values, for example, with the text color changing to red or a certain warning symbol.

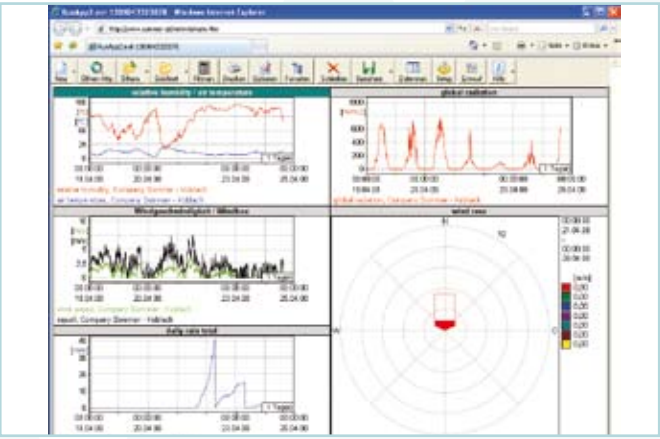


Fig. 10: Display of several measured data values of a station

Fig. 11: Display of two measured values in a graph with marker

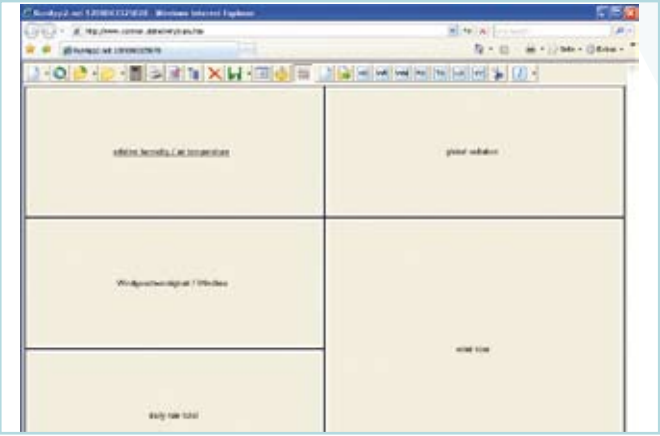


Fig. 12: Layout mode for user-defined design of templates

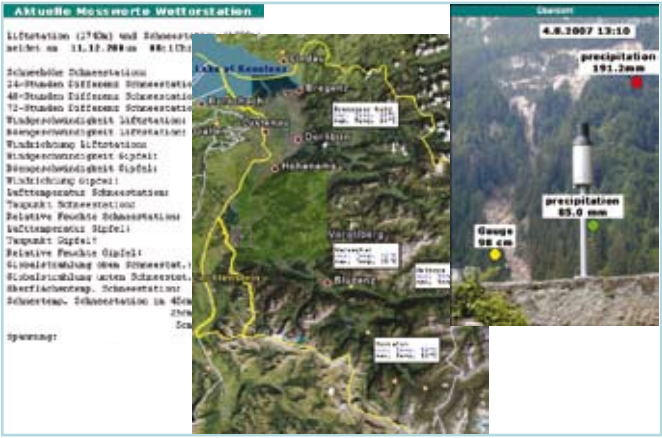


Fig. 12: Overview display as text graph or map graph

Technical Versions

"ftp" Version	Data logger	Sommer data logger series MRS, MDL or by the programming of drivers, any data logger can be connected with the data communication module DCM 862.
	DCM 862	Data communication module DCM 862 » Transfer of measured data via GPRS » Data buffering » Monitoring of data transfer » Redundant query path via GSM
	FTP server	Any FTP server provided by the customer
„MDS - Measured Data Server" Version	Data logger	Sommer data logger series MRS, MDL or by the programming of drivers, any data logger can be connected with the data communication module DCM 862.
	DCM 862	Data communication module DCM 862 » Transfer of measured data via GPRS » Data buffering » Monitoring of data transfer » Redundant query path via GSM
	Server	Either the customer instals the measured data server on his own web server and database, or rents an individual package of the servers of the firm Sommer. In the case of the rental variant, only a computer with web browser and Internet access is required for the management and analysis of the measured data. **"Measured data server" package** » Web server » Web service for receiving data » Database for Data service » Data storage for station and user management, as well as graphic measured-data analysis, export function **Package extension – MetWin.net** Comprehensive professional visualization and analysis possibilities of the measured data.

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