SODA - The intelligent complete system for data acquisition and distribution

TIME SERIES MANAGEMENT
KiTSM INSIDE
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TELEMETRY | WATER RESOURCES

The basis function:
Data communication of every kind

SODA is the ideal platform for data acquisition (push and pull) using multiple communication channels and data loggers from different manufacturers. It allows for the storage of raw data and the distribution of data in different formats. Put simply, SODA brings all data together and makes it available to you.

The field of hydrometry has recently seen a change in communication technologies with the application of mobile and IP technologies for data collection. Whether **IP telemetry, dial-up modem, file transfer, or communication via web services** is used, SODA brings these technologies together and provides them in

ONE solution. Heterogeneous networks can easily be managed with SODA. SODA can communicate via **phone, ISDN, GSM, UMTS, GPRS, internet, radio and satellite**. Continuous development of SODA ensures you always have access to the latest technology. Consequently there is no need to miss out on new developments in data collection technology.

SODA supports **all of the main data loggers and data transfer units** used within the field of water resources management (see separate information sheet "Technical Specifications").
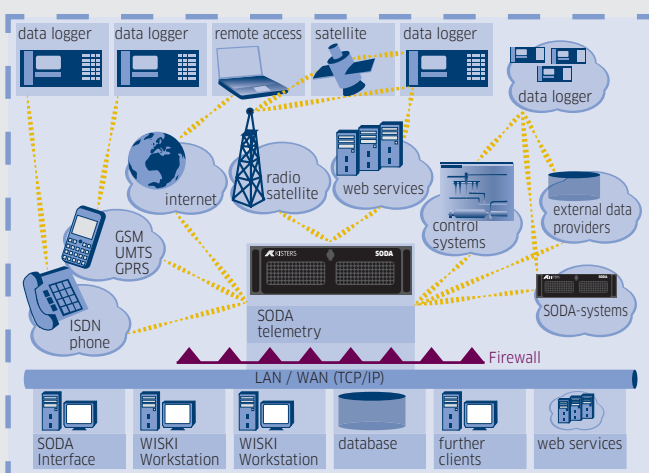
The extras

SODA is a fast and reliable automatic data collection platform with a user-friendly graphical user interface for:

- Remote call planning, task planning, and monitoring
- Central management of all data sources and the complete communication network
- Central monitoring of the data transfer process
- Temporary storage of raw data
- Initial visualisation of raw data
- Alarming (with suitable software extensions)

SODA and WISKI

SODA contains the data acquisition components that guarantee high levels of data availability in WISKI. It ensures flexibility, security and the simple extensibility of the measuring network.

data logger | data logger | remote access | satellite | data logger | data logger | internet | radio satellite | web services | control systems | external data providers | GSM UMTS GPRS | SODA telemetry | SODA-systems | ISDN phone | Firewall | LAN / WAN (TCP/IP) | SODA Interface | WISKI Workstation | WISKI Workstation | database | further clients | web services

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SODA communicates simultaneously through different channels and collects data from devices no matter how they are connected. Finally, the data are automatically and securely saved into the WISKI database.

All basic data of the data loggers and target systems are managed centrally in SODA. This means it is only necessary to update the data at one location.

SODA software: Control and monitoring of acquisition and distribution

SODA consists of a piece of hardware and software designed specifically for handling a broad range of communication tasks. The SODA software directs and monitors all the activities carried out by SODA. This means that the SODA user is able to configure SODA, view raw data and protocols on screen, manage and edit basic data, as well as create and trigger jobs.

SODA functions and configuration options

Management of basic data
- Creation of new measurement stations
- Data of stations, loggers and connections
- Editing of remote call basic data
- Varied views on the basic data
- Filtering of measurements via a user-defined text filters
- Creation and triggering of test jobs

System configuration
- Editing of configuration parameters
- Personal settings
- Selection of log files to be monitored
- Management of key list entries
- Management of communication lines
- Editing of explorer views

Management of acquisition jobs
- A job can be set up to retrieve data from a group of monitoring stations at the same time. The periodicity can be a multiple of minutes, hours, days, weeks and months.
- Overview of all jobs within SODA with status, remote call time range, last/next start point (with periodic remote calls), periodicity and remote call type in tabular form
- Job creation, editing, start, pause and stop
- Deleting jobs from the job list
- Simple post-editing of jobs
- Remote call jobs can also be edited within WISKI.

Deployment in push application
- Push application using ISDN, D-channel, TCP/IP, GPRS, FTP, web services.
- Active device management e.g. push frequency, time, parameterisation
- Push frequencies are also possible below one minute.
- Initiating a wake-up call
- Fallback into pull operation if push operation fails

Data export and distribution
SODA offers a high level of flexibility: The retrieved data can be exported in different formats (ZRXP, XML files) using different distribution methods (KiDSM, file systems, FTP) to the target system.

A folder in a file system can be used as an additional target system, into which a file can be deposited following remote retrieval. Alternatively, WISKI can be specified as the target system so that the file is imported directly into the WISKI database.

Online monitoring of the communication process
- Display of the communication process between SODA and the measuring stations
- Status of the individual communication lines (modem, GSM,…)
- Monitoring of push operations

Storage of retrieved data
The retrieved raw data are stored for 2-3 months and during this time can be visualised or distributed. In this respect, SODA provides an excellent means of intermediate storage.

Web Services
Different web services are supported as a means of data acquisition. These include the OGC WaterML 2.0 and Pegel-Online. A further option is for SODA to work as a service provider and so make its data continually available.

Display and operation

User-friendly interface

- Standardised graphical user interface
- Hierarchical menu structure and functionalities
- Theme-related online documentation
- Comfortable editing of application-related views

Display of system information

- Current time on SODA
- Free space on the hard drive
- CPU load
- Status of KiTSM and KiDSM

Visualisation of recorded data

The retrieved and saved data can be displayed in a graphical and tabular form.

Data security

Protocols and reporting

SODA provides detailed protocols about all actions concerning acquisition and dissemination of the data. Log information can be viewed using either a station-oriented or a job-oriented view. Additionally, you can apply viewing filters. Once the communication process has completed, the following protocols are available: Status, errors, remote call, decoding, data transfer, import protocol.

Data security and back up

All necessary data and settings of SODA are backed up. This allows the current state of SODA to be recreated at a later point in time.

User management

User management and password protection

- Different user levels are possible through the assignment of user roles. User roles can be freely configured.
- Full multitenancy: SODA can carry out the data acquisition for multiple tenants independently. The required basic data and jobs are managed separately for each tenant.
- Multi-user capabilities: SODA can be used by several users at the same time. Multitenancy is fully supported, i.e. different database tenants can be edited either individually or simultaneously.

SODA in short...

SODA is the allround solution for data acquisition, raw data storage and data dissemination. It ensures a high level of data availability in WISKI. SODA communicates with all typical data loggers and data transfer units, and provides support for all of the following:

- **Transfer technology/ protocols**: IP-telemetry, remote call, file transfer, web services, e-mail,...
- **Transfer directions**: push, pull, D-channel, remote call, ...
- **Transfer paths**: telephone, GSM, UMTS, GPRS, internet, radio, satellite,...

Properties of the SODA software

Communication lines

The following communication lines are supported: telephone, ISDN, GSM, UMTS, GPRS, internet, radio, satellite.

Independency

SODA stores all basic data of both the acquisition links and the target systems to ensure full operational independence of SODA from the WISKI client. It retrieves this data from the client system via interfaces.

Parallel communication

The different communication channels run in parallel. In addition to the IP-based channels, up to 32 modems can be connected.

Simple installation and updates

SODA is delivered completely pre-configured and can be operational very quickly. Regular software updates ensure that SODA is always up to date and that new devices and formats are supported.

High performance

SODA uses load balancing, which enables all available resources to be used. This means the highest possible performance is attained. As soon as new data arrives, it is exported to WISKI and is available for further processing.

SODA hardware - for every step in the data acquisition process

You can choose from two SODA variations depending on the the number of communication lines and on the types of technology used in your measuring network. Both systems are equipped with the same software.

SODAmodular: Hardware for extensive jobs

SODAmodular has interfaces for up to 32 modems and is able to further communicate via web services and IP. The standard configuration of SODAmodular consists of three components: the calculation unit of SODAmodular, the interface unit SODA-V24 and the modem rack SODAmodem.

The calculation unit of SODAmodular contains a high performance industry PC (Xeon 4 processor, 2 x 500 GB hard disk (RAID 1), DVD drive, ethernet, VGA-graphics, connection for USB-mouse and keyboard, redundant power supply). Configuration and administration are dealt with using the SODA software. SODA-V24 provides 16 serial interfaces for the connection of modems through SODAmodem, or for the connection of external modems, powerline modems and remote control units.

A further option is to connect two SODA-V24s for a total of 32 interfaces.

The modem rack version of SODAmodem can hold up to 16 modems (ISDN, GSM, analogue). SODAmodem is equipped with its own insertable power supply.

Dimensions (height / width / depth in mm) for the 19" rack
- SODAmodular: approx. 172 / 440 / 523 (4 RU)
- SODAmodem: approx. 132 / 440 / 370 (3 RU)
- SODA-V24: approx. 44 / 440 /170 (1 RU)

SODAcompact:
The compact solution for small applications

SODAcompact is based on a different concept: Both the hardware configuration and the scope of services are fixed. The device is housed in a compact case and supports standard telemetry operations via four serial ports for the connection to modems. Connection to web services and via IP is also possible. Depending on data frequency, up to 100 stations can be serviced in IP mode. The unit can upgraded to a SODAmodular at any time. Connections at the back of the device comprise of 4 serial ports, ethernet, power, printer port, keyboard, mouse and VGA-graphics.

Dimensions (height / width / depth in mm) for the 19" rack
SODAcompact: ca. 132 / 440 / 523 (3 RU)

The technical specification for SODA and the supported devices/ data loggers are detailed in a separate product sheet.

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