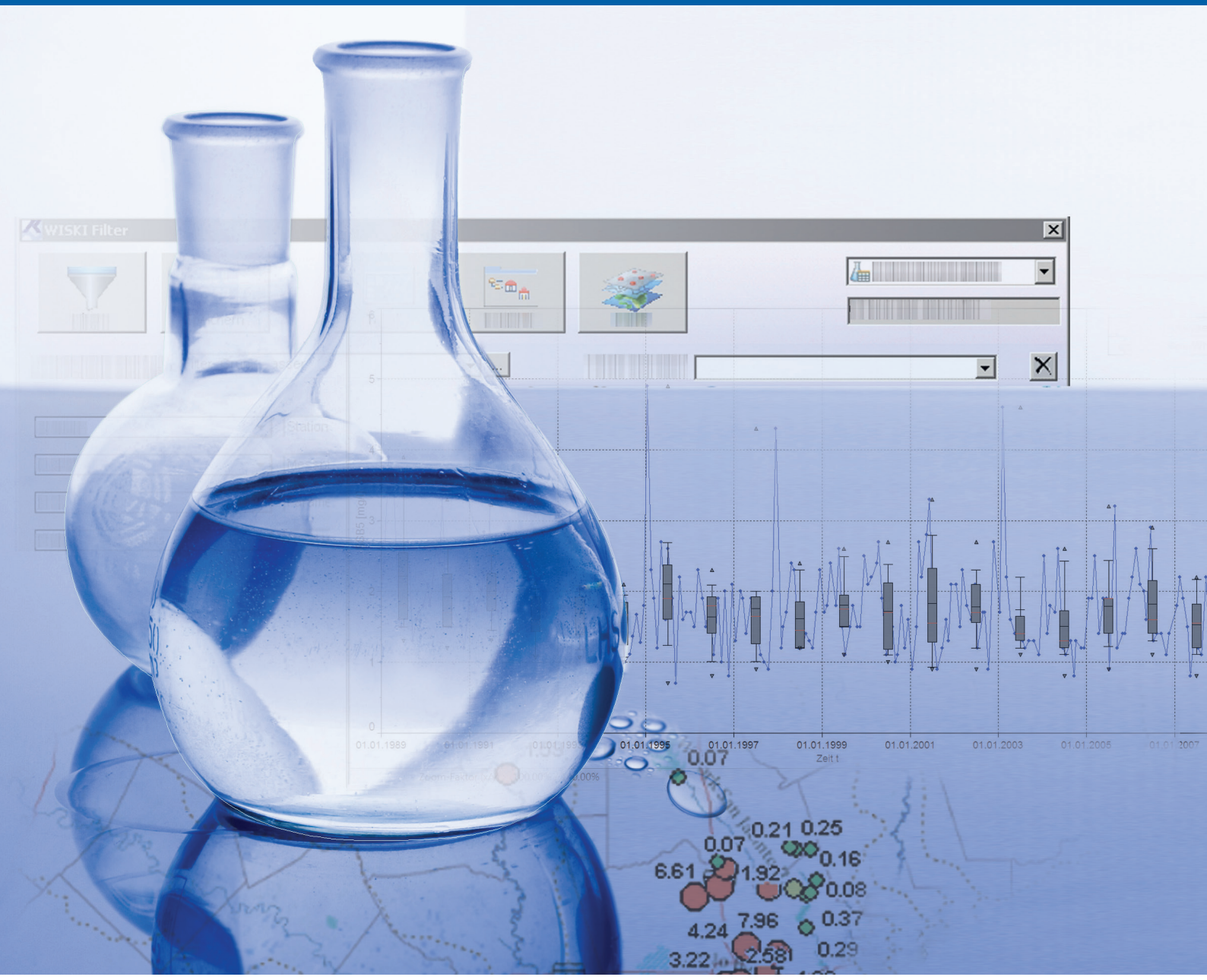
KiWQM

WATER RESOURCES MANAGEMENT

KiWQM: Software for optimized water quality management

WATER QUALITY | SAMPLE DATA



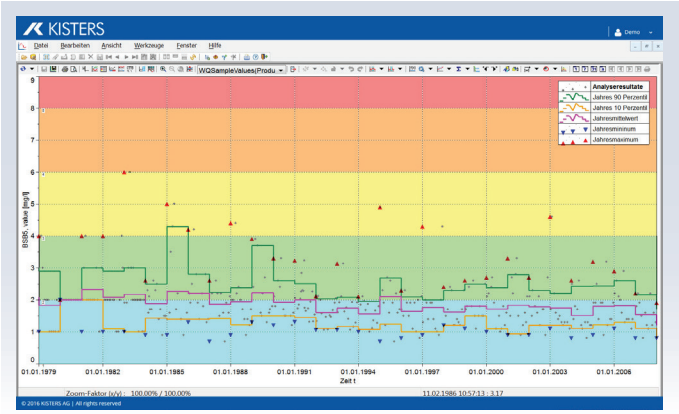
KISTERS

Good overall water condition, as is the objective of the Water Framework Directive 2000/60/EC, can only be achieved using an integrative approach for water quantity and water quality information.

That is where KISTERS' integrated solution comes to the fore: Our water information system with its water quality module KiWQM manages both water quantity and chemical water data - and can even handle biological data with the optional extension module KiECO. The KISTERS Water Solution therefore becomes an integrated information management system for hydrology, meteorology, water quality, and water ecology. The previously often observed differentiation between measurements and observation data has now become a thing of the past.

Features in brief

With the addition of the water quality module KiWQM, the KISTERS Water Solution now allows the direct integration of quantitative and qualitative data, so that users can carry out **meaningful water quality analyses**.



Visualisation of concentrations in classifications and percentiles

KiWQM allows

- Manual and automated sample data capture
- Technical data validation
- Management, evaluation, and visualisation
- Configuration of component, parameter, and comparison lists
- Configuration of measurement campaigns
- Data export and reporting
- Production of water quality maps by means of coupling with GIS
- Flexible description of stations, samples, measurement campaigns
- Integration: Coupling with simultaneously monitored continuous measurement data and with data from other technical fields

KiECO extension: Management of biological sample data

KiECO is an extension module for KiWQM to manage biological observation data.

In compliance with the EU Water Framework Directive **both the hydrological and chemical as well as the ecological aspects** (and here more specifically the fauna and flora observed wihthin and close to the water body) must be assessed. KiECO provides a solution to manage temporally dynamic taxonomies for the classification of observed organisms. All biological observations are time stamped and stored in the database. This data can then be coupled with simultaneously acquired chemical and hydrological data: Thus, KiECO is the missing link towards a holistic assessment of water biospheres.

The KiECO flyer is available on request.

Function overview

Sample data management
- Explorer with configurable tree views
- Data selection from map views
- User-specific customisation: data groups, favourites

Querying / searching / filtering of sample data
- Data filter: simple, complex, configurable
- Output in the explorer, in a table or in a map

Sample data import
- Manual and automated, configurable
- From laboratory information systems (LIMS)
- Automatic validation: logical, formal

Sample data quality
- Technical validation: configurable
- Quality flags and comments for each sample value
- Audit trail: Traceability of data changes

Sample data calculation
- Derived parameters (total, ionic balance, O_2 saturation, etc.)
- Aggregated statistics (mean values, extremes, percentiles etc.)
- Loads
- Manual and automated

Sample data analysis
- Classification systems and comparison lists: configurable
- Statistics: on station and parameter level
- Laboratory quality control statistics

Sample data visualisation
- Sample and parameter-specific tables
- Visualisation: Time series or bar charts
- Graphical statistical evaluation: Scatter and Box-Whisker plots

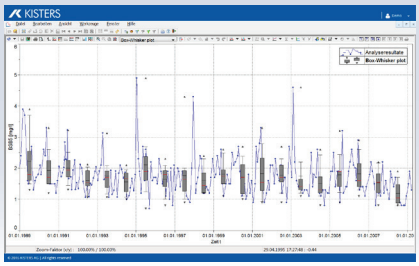
Sample data export
- Manual and automated, configurable
- Variety of export formats

Reports/water quality maps
- Reports: standard (Excel), user-specific (Excel, Business Objects)
- Water quality maps via ArcGIS integration (optional)
- Data selection via web interface (optional)
- Bathing water reports compatible with the European Environment Agency (EEA) specifications for reporting to the Water Information System for Europe (WISE)

Typical applications

You can now use the KISTERS Water Solution in combination with KiWQM to manage complex situations resulting from either the existing or the planned uses of a body of water. The software will flexibly adapt to the relevant tasks at hand, for example:

- **Regulatory monitoring:** subsequent to the national transcription of the Water Framework Guideline 2000/60/EC
- **Trend monitoring:** continuous as well as repetitive long-term data acquisition
- **Monitoring tasks during operations:** wastewater treatment plants, natural waters with active water extraction/ wastewater feeds
- **Background monitoring:** water quantity and chemical data from unpolluted areas
- **Historical data:** administration and analysis
- **Monitoring and alarming:** early warning system for crises, like floods, contamination, etc.
- **Short-term monitoring campaigns:** preservation of evidence and identification of causes during floods, chemical accidents, contamination, etc.
- General **status monitoring** for the assessment of physicochemical quality components



Sample data with annual Box-Whisker evaluation

Management of the data quality of sample results (measurement and analysis data)

Your advantage: Integrative approach to water data

The extension KiWQM turns the KISTERS Water Solution into an integrated water quantity and water quality data management software system. It is a platform shared between all departments and experts. Each of them will use application-specific validation and analysis tools from vertical application spaces all available within the same database application.

- Sample data linked to continuously measured data
- Holistic assessment of the water body status in accordance with 2000/61/EC
- Can be extended to include freshwater ecology using the optional KiECO
- Centralised data management for various water-related specialist tasks

For all of your daily tasks ...

Centralisation/data import	Import of various file formats from external laboratories or from continuous analyzers
Storage of original data	Data security: All raw data from sampling, analysis, and measuring data remains intact.
Quality assurance	Manual and automated formal and technical validation
Storage of production data	Working basis for all subsequent analyses. A complete change history is made available.
Aggregation	Derived values (e.g. ionic balance, loads) and aggregated statistics (e.g. annual percentiles)
Evaluation/analysis	Statistical evaluations and graphical analyses (Box-Whisker, time series, etc.)
Reports	Standard reports for internal and external reporting, custom reports
Archiving	Long-term data collation for trend assessments and the coupling of e.g. climate data

About KISTERS

KISTERS is a group of IT companies with 500+ employees, headquarters in Aachen, Germany, and numerous national and international subsidiaries. KISTERS offers leading software solutions for the sustainable management of water, energy and air. Expertise, commitment and sector experience make KISTERS a much sought-after partner. KISTERS' Global Water Solution is a framework for building efficient customer solutions based on modern technology and in-depth understanding of application areas and markets. Solutions include, among others, surface and ground water monitoring, meteorology, water quality and urban drainage deployed at hundreds of customer sites with many thousands of licenses worldwide.

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