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NICOS - Web-based SCADA and Process Control System



NICOS



360° expandable, 100% web capability, just 1 Solution

Use NICOS for monitoring and documentation of processes in centralised and decentralised facilities.

Thanks to its modular structure NICOS is suitable both for smaller processes as well as for large decentralised process landscapes.

Your benefits with NICOS

- Maximum operational efficiency through best possible processing of information and high usability
- Easy process automation
- Intelligent reporting functions
- Modular structure for individual systems
- Worldwide access thanks to web and cloud technology
- Easy connection to external/third-party systems
- Easy integration of existing processes
- Comfortable and easy data management
- Individual recording and process control
- Special functions for water industry

Typical NICOS Applications

Monitoring and control of plants and distributed stations as well as storage of data and logging of events in:

- Applications in the water industry such as: wells and pump stations in water supply networks, stormwater overflow tanks and lifting facilities in wastewater networks
- Biogas plants, wind power and hydropower
- Power engineering, photovoltaics
- Commercial building control etc.

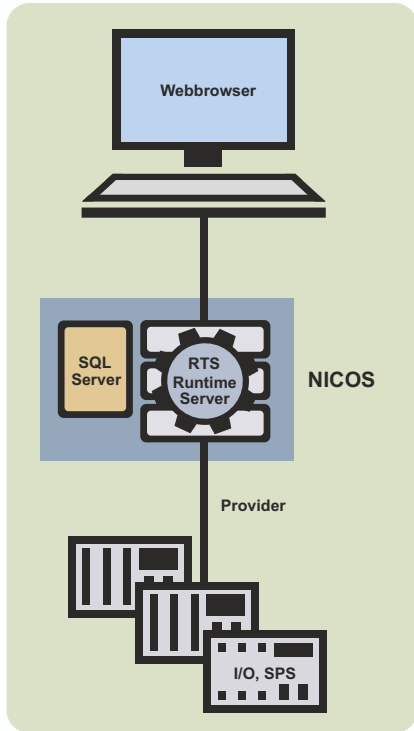
Example: Stormwater Overflow Tanks

Thanks to special functions and coordinated telecontrol systems NICOS permits reliable event logging on stormwater overflow tanks.

- Event reports according to A128, M 207 and M 260 acc. to DWA
- Automated recording and logging
- Individual documentation

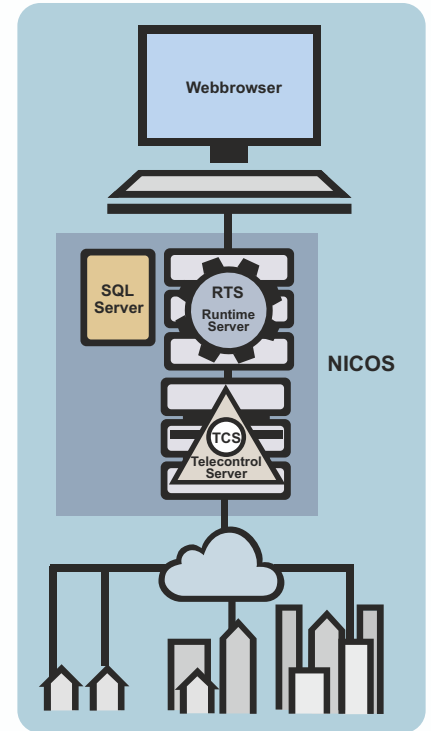


Very small to very large systems feasible



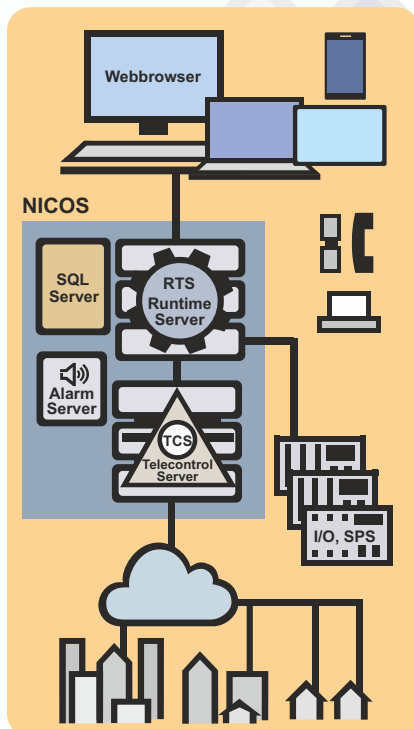
Control System

Contains a NICOS Edition and a communication driver for connection to I/Os or PLC.



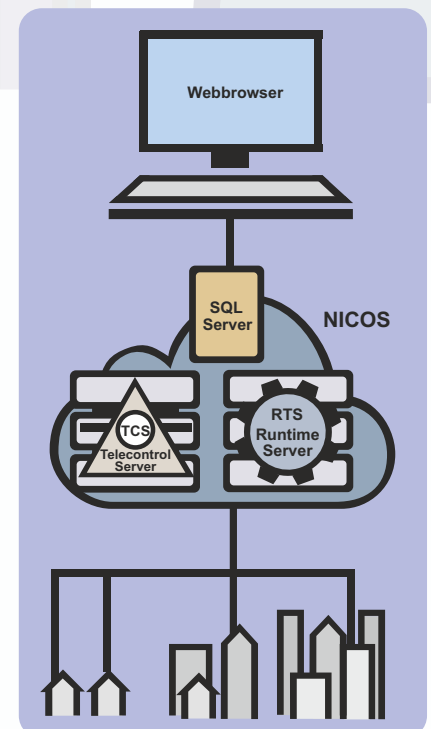
Telecontrol System

Contains a NICOS Edition and a telecontrol server for connection of telecontrol stations.



Control and Telecontrol System

Contains a NICOS Edition and a telecontrol server for connection of telecontrol stations, a communication driver to connect the PLC to the control system plus an alarm server for error messaging via SMS, e-mail, ...



Cloud System

Contains a NICOS Edition and a telecontrol server on a rental basis in the cloud.

NICOS Basic Packages

Economy Edition up to 100 Process Variables

The Economy Edition contains the following modules and services:

- + Manager- / Studio Engineering Tool
- + Formula Editor
- + Runtime Server for processing of process data and archived data of up to 100 process parameters
- + Module Visualisation
- + Module Analytics
- + Module Alarm

Business Edition up to 1000 Process Variables

The Business Edition contains the same modules as the Economy Edition. Processing of process data and archived data is possible for up to 1000 process variables.

Enterprise Edition up to 5000 Process Variables

The Enterprise Edition contains the following modules and services:

- + Manager- / Studio Engineering Tool
- + Formel-Editor+
- + Runtime Server for processing of process data and archived data of up to 5000 process parameters
- + Module Visualisation
- + Module Analytics
- + Module Files
- + Module Maintenance
- + Module Reporting
- + Module Scheduler
- + Module Alarm

NICOS Lease

Benefit from the advantages of a professional SCADA and process control systems without the need to pay purchasing costs.

NICOS in connection with a high-end hardware system on a rental basis provides very high flexibility.

High purchasing costs will become a thing of the past. Pay just for what you are using! Clear billing models provide very high planning certainty of costs.



The Kit: The NICOS Modules

The NICOS SCADA system has a modular structure.
This permits to individually scale your control system solution.

Manager Module

- Overview on all process data presented as tables
- Quick and compact overview
- Input mask for laboratory values

Device Module

- Indication of all devices parameterised within data project
- Distribution of devices on map
- Device info (field strength, battery power, temperature, ...)
- Direct entry to visualisation images, charts, reports

Alarm Module

- Archiving of operation and error messages
- Message indication filtered by a wide range of criteria
- Evaluation based on duration and frequency
- Redirection of alarms via SMS, e-mail or voice alarm

Visualisation Module

- Quick and clear representation of individual and animated process landscapes
- Templates and symbols can be used for effective work
- Easy integration of Vector graphics

Analytics Module

- Easy-to-create dashboards for individual overviews on process data
- Select variables using "drag & drop"

Maintenance Module

- Planning module for maintenance and servicing of machineries
- Alerting based on run-time or operating time



Files Module

- Management of files such as report templates, created reports, documentations etc.
- Overview on all files within the current data project
- Files preview in browser (Excel, PDF)



Reporting Module

- Individual creation von multi-page data and event reports
- Overview on all reports
- Edit report templates and create reports



Scheduler Module

- Creation and representation of on-call schedules
- Continuous monitoring of process plants
- Individual configuration of alarms (e-mail, SMS, voice alarms)



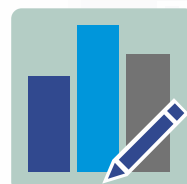
Symbols Module

- Extension of the Visualisation Module
- Symbol Editor
- Templates management for object-oriented process visualisation



Chart Module

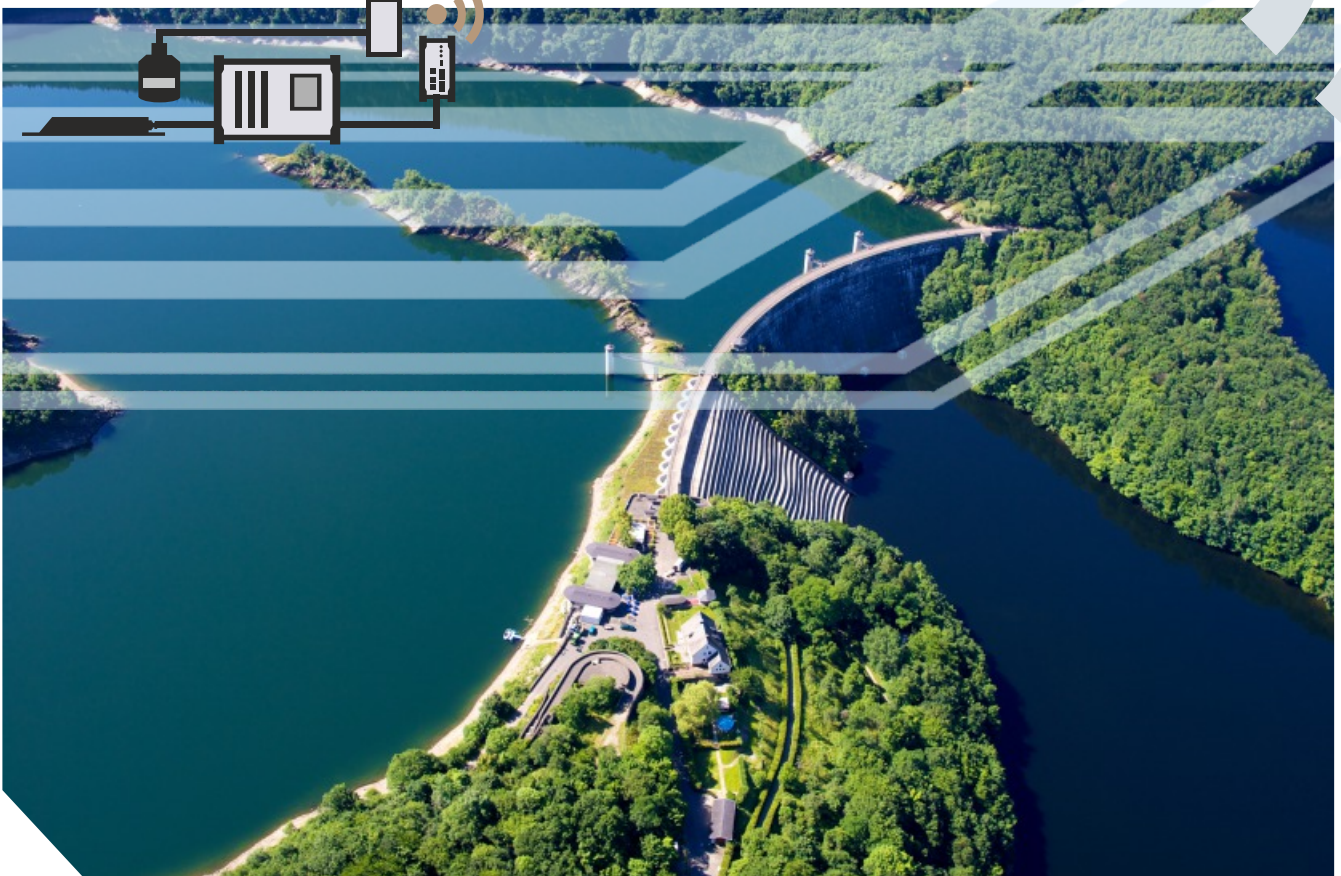
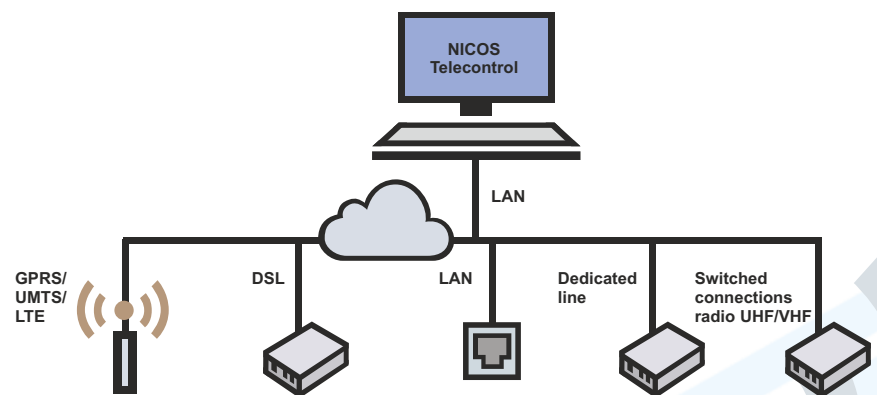
- Creation of user-defined charts with high time resolution
- Extensive import and export options
- Comprehensive library of mathematical functions



Telecontrol Systems - intelligent Management of your Processes

In the field of telecontrol systems, NICOS by NIVUS provides a complete software solution which in combination with NivuLink hardware devices brings together widely spread plants and process landscapes on a centralised basis. In such configurations decentralised systems can remain active as independent processes.

With the aid of the scalable cloud platform globally networked plants and plant sections, federated networks or distributed measurement systems are brought together on a centralised basis via telecommunications networks or wired networks.





Hardware Solutions



NivuLink Gateway

NivuLink Gateway devices for decentralised networks are used for direct connection of PLCs, I/Os to a NICOS SCADA and telecontrol system.



NivuLink Micro

NivuLink Micro is a self-sufficient gateway for the transmission of measurement data to a web portal or the decentralised integration of metering devices into a higher telecontrol system.



NivuLink Control

NivuLink Control is a compact control system (PLC). Aside from network and field-bus interfaces it moreover supports digital and analog bus clamps.

Powerful yet plain: The NICOS Technology and Architecture

Front-End

Using the latest web technology based on HTML 5 enables to operate your NICOS system from anywhere in the world. All you need is a web browser and an Internet connection to control and to monitor your processes.

- Quick and easy setup of applications without the need for programming skills
- Worldwide access
- Multi-Touch technology
- Independent of terminal units
- No plug-ins or local installations required
- Output optimised for mobile terminals (smartphones, tablets, ...)

Runtime Server

The runtime server is the core of NICOS and is used for the processing of all process parameters.

The server can be hosted locally, via web or completely within the cloud.

- Real time data/history
- Online data
- Pre-processing of values
- Plausibility check of values "Gradient/Hysteresis"
- Logging of values
- Job and time control
- Protocol generator
- Alarm generator
- Communicates with devices via providers

You decide where to operate the server.





The efficient Engineering Tool: NICOS Studio

NICOS Studio is the engineering tool used to create and to manage your projects. Its user-friendliness allows to quickly implement projects with very high efficiency.

NICOS Studio enables plant expansion activities during operation and facilitates project-specific system modifications.

The modifications are carried out by the setting of parameters without the need for any programming works. This guarantees ease of use.

Existing projects can be easily incorporated as well through migration using import and export wizards.

Mass data configurations based on Excel, for instance, are possible without any problems. The structure of organisation and facilities can be represented either hierarchically or individually.

Maximum Data Security: NICOS redundant

For increased availability requirements NICOS can be structured redundantly.

- Redundant NICOS 2.0 runtime server structure, with automatic data synchronisation after restart of a failed server
- Redundant communication with telecontrol substations



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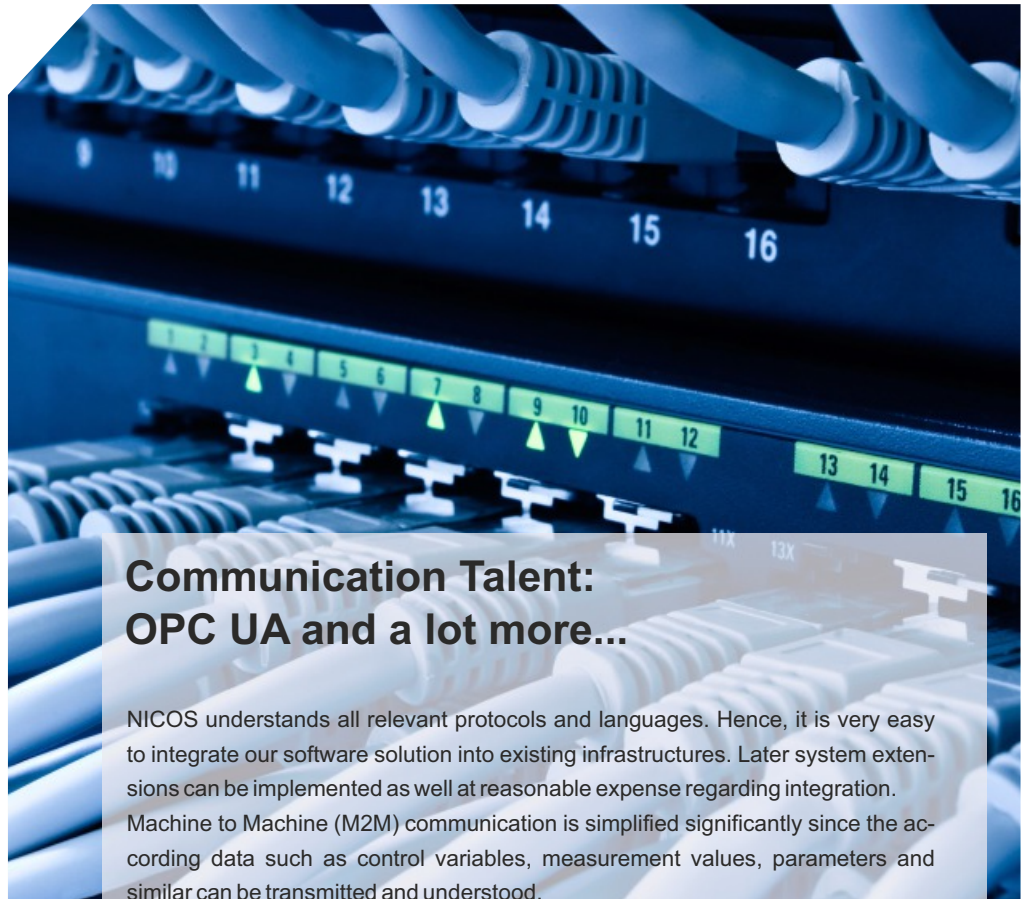
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Communication Talent: OPC UA and a lot more...

NICOS understands all relevant protocols and languages. Hence, it is very easy to integrate our software solution into existing infrastructures. Later system extensions can be implemented as well at reasonable expense regarding integration. Machine to Machine (M2M) communication is simplified significantly since the according data such as control variables, measurement values, parameters and similar can be transmitted and understood.

Supported Protocols

- OPC UA
- IEC870-104
- Modbus
- MQTT
- SIEMENS NET
- etc.

NICOS System Requirements

NICOS is currently approved for the following operating systems

- Windows 10 (Professional, Enterprise)
- Windows 8 (Pro and Enterprise) (32/64-bit)
- Windows 7 SP1 (Professional, Enterprise, Ultimate) (32/64-bit)
- Windows Server 2016 (Standard, Data Center)
- Windows Server 2012 (Standard and Data Center) (64-bit)
- Windows Server 2008 R2 SP1 (Standard, Enterprise) (32/64-bit)

NICOS OPC UA

The operating systems currently approved for OPC UA 1.0.3 are Windows XP SP3, Windows 7 (32-Bit and 64-Bit), Windows 8 (32-Bit und 64-Bit), Windows 10 (32-Bit and 64-Bit) as well as Windows Server 2012 R2 (64-Bit).