# GSD SONET

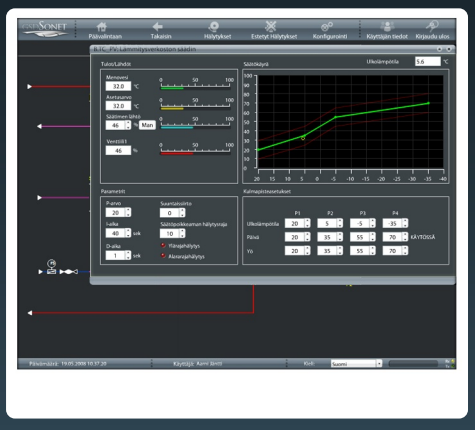
## Manage your building automation systems from anywhere and reduce energy consumption throughout your infrastructure.

Meet GSD-Sonet: the next generation of SCADA and remote building automation software. GSD-Sonet is a smart client-server framework that lets you monitor and control your facilities through a single sleek web interface.

**GSD-Sonet** connects with a wide range of automation devices across multiple communication protocols, and support can be expanded with new drivers. It's a snap to get your management interface running and keep it that way: with a versatile client API, **Online/On-the-Fly programming** and easy integration with your infrastructure. Complete multilingual support and access from any web browser mean that noone in your organisation is left out in the cold.

## RELIABLE CONNECTIVITY ON MULTIPLE PLATFORMS

**GSD-Sonet** is built on the latest software technologies to adeptly respond to current and future automation challenges. GSD-Sonet's lightweight server application is driven by the **Microsoft® .NET Framework** and delivers content to an **Adobe Flash® 8/CS3** client which runs in any Flash-capable browser. Both are well-supported proven platforms which lead the market for Rich Internet Applications. GSD-Sonet's client interface will soon also support **Microsoft® SilverLight** technology.



# GLOBAL ENERGY OPTIMIZATION AND SIMULATION

**GSD-Sonet** makes it possible to simulate, optimize and manage the energy consumption of your infrastructure using the **Global Energy Optimization and Simulation program** (GEOS). We can think of an entire building or building complex as a single process that consumes and produces energy, and which has variables that can be measured and steered. Optimizing these variables can reduce your energy consumption massively.

It is now possible to profile all systems and devices within a facility that consume electrical or thermal energy, and determine how much each consumes during operation. There are also "unknown" systems which are usually overlooked yet consume significant amounts of energy: their hidden cost is calculated by comparison to the total known energy consumption.

All these energy-consuming systems can be added to the GEOS program to produce consumption and optimization models. These models simulate the energy consumption of the facility in different states of operation and environmental conditions, and can provide rules about how that consumption should be optimized in different situations. The GEOS program acts as an integrated part of the building automation system and can be expanded with I/O systems to control electrical devices, for example devices with EIB/KNX-fieldbus technology.

GEOS is a powerful tool for maintenance personnel, that also serves managers and real-estate owners with real-time energy usage reports and effective reductions in energy consumption.

# SAVE TIME & MONEY WITH EASY DEVELOPMENT TOOLS

## CREATE PROCESS DISPLAYS WITH EASE IN FLASH®

Process displays and other user interfaces can be constructed in **Adobe® Flash® CS3 Professional** using **GSD-Sonet**'s crisp and comprehensive library of dynamic automation symbols. Create your displays by drag-and-drop, then customise component behaviour with straightforward automation tags. Your new displays will be available straight after publishing thanks to the integrated web server.

## REMOTE PROGRAMMING ONLINE & ON THE FLY

**GSD-Sonet** server stays running while you build or modify your project: **Online/On-the-fly** programming features mean that changes don't mean downtime or disruption to your service.

You can create and modify any aspect of the system – from tags, alarms, and trends to ports, drivers and devices – remotely from any client.

## EXCELLENT MULTILINGUAL SUPPORT

**GSD-Sonet**'s robust integrated translation system lets you localize your project's interfaces – and the GSD-Sonet client software – into every language you need. Each user can choose their language and switch it instantly from any point in the application, allowing easy profile sharing for multilingual teams.

The translation process can be done remotely and has full UTF-8 support, ensuring compatibility with almost all alphabets.

## THE POWER OF EXPANDABLE SOFTWARE

Server-side software expandability and integration has been made extremely easy. The software has three interfaces for software expansions:

1. **Communication driver interface for I/O devices**
2. **Interface for system modules**
3. **Interface for individual project software expansions**

Software expansions can be done with any programming language supported by **Microsoft® .NET Framework**: **C#**, **C++**, **VB**, **Delphi** etc.

## INTEGRATION WITH OTHER SYSTEMS

**GSD-Sonet** can use many methods to integrate with other systems: for example, data from an automation point can be retrieved from a Web Service in XML-format, over UDP or TCP/IP with a simple communication protocol, or directly via USB or serial port. Integrated communication links can be restricted and secured with authentication methods.

## BUILT-IN WEBSERVER AND FIREWALL

**GSD-Sonet** has a built-in webserver and firewall, eliminating the need to install and configure additional software. For devices connected via **GPRS/EDGE/3G/HSDPA** networks, we also recommend using VPN tunnelling through an external firewall on the server side.

## ENCRYPTED COMMUNICATION

Communication between server and client is securely encrypted, using a different encryption key each session. Clients have permission to communicate only with the server from which the pages were loaded. Too many incorrect login attempts in sequence (with an adjustable tolerance) will cause the client's IP address to be banned.

## REAL-TIME OBJECT DATABASE

GSD-Sonet uses a custom real-time database to store data from automation points, trend-reports, alarm systems, integrated communication links and client input. It can also be used to store data from your own additional programs. Data is stored as objects, resulting in faster, safer storage and retrieval.

## COMMUNICATION DRIVERS FOR I/O DEVICES

**GSD-Sonet** comes with an **OPC-Client DA 2.0** driver to allow communication with hundreds of existing devices and protocols, including:

- **BACNet**
- **EIB/KNX**
- **LonWorks**

**OPC-Server** manufacturers:

- **Matrikon**
  www.matrikonopc.com
- **Kepware**
  www.kepware.com

**GSD-Sonet** also has the following communication drivers built-in:

- **Modbus-RTU**
- **Modnet**
- **SAIA Sbus via Ethernet/Serial/USB**

**GSD-Sonet**'s device support is being continually expanded with new drivers.

# ADDITIONAL FEATURES IN BRIEF

## ALARMS

**Digital:** 4 inputs, ON, OFF and ON/OFF delays
Connectable to an output tag
**Analog:** High/Low and Deviation High/Low types
ON, OFF, ON/OFF and hysteresis delays
Connectable to an output tag

Alarm messages can be localised, and Help- and Info-pages can be linked to alarms.

## ALARM PRIORITIES

Fully configurable prioritisation of alarms, including:
**Alarm forwarding:** SMS, Email, TCP-UDP/IP, Serial
**Alarm logging:** Printer, File, TCP-UDP/IP, Serial

## TRENDS

Any analog or digital input can be individually tracked using the trend system. The smallest sample period is one second and sample data can be retained for one to 365 days. Older data is automatically discarded so that the storage space required remains constant.

## TREND DISPLAY GROUPS

Related trends can be organised into trend display groups, for example to group trends by process. Each trend display group can plot up to 8 trends simultaneously, with real-time and historical views.

# SYSTEM REQUIREMENTS


## SERVER

**Operating system:**
Microsoft® Windows XP / Server 2003 / Server 2008 / Vista

**Additional software:**
Microsoft® .NET Framework 3.5
Adobe® Flash Player 8 or newer

**Computer hardware:**
Same as operating system minimum requirements, plus 250% more RAM

## CLIENT

Hardware and browser support for **Adobe® Flash® Player 8** or newer

## GSD-Sonet will be officially released in September 2008.

If you would like to be invited to the product launch in Helsinki, please send your contact information to the address below.

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