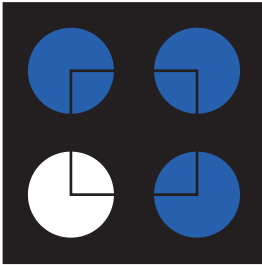


B&S
Power Division



energy management



Cetrics™

The smart way
to complete
control



Cetrics – a powerful tool for electricity suppliers and customers

Cetrics – for complete control

Cetrics is a universal metering data handling system developed using the latest technologies. Cetrics is based on many years of experience of earlier systems such as EnerBase. To ensure that we are developing the right product we have conducted a continuous dialogue with our customers. As well as wanting the actual functions, customers have insisted on **user-friendliness**, **expandability**, **flexibility** and an assurance of **future maintenance**. These four demands are the cornerstones of the platform that is Cetrics.

The smart way to complete control



System requirements

The system requirements for Cetrics depend on the configuration installed. A configuration may be everything from a single-user system with a small number of terminals and series, to a system with a large number of users and thousands of terminals and series. These are the minimum requirements for a single-user system with a few terminals and series:

- Intel Pentium II 400 MHz
- 64 MB RAM (128 MB recommended for Windows NT and Windows 2000)
- CD-ROM (for installation)
- 1 GB free hard disk space (should be calculated accurately for each configuration)
- Monitor with a resolution of 800x600 pixels and 256 colours (recommended resolution 1024x768 pixels)

Operating system requirements

Cetrics will run under Windows NT 4.0 with Service Pack 4 or later, and Windows 2000.

The installation of a host for connections requires Windows NT 4.0 with Service Pack 4 or later, or Windows 2000. If data is collected from terminals from the same computer, there is no need to install a host for connections.

We recommend running Cetrics under Windows 2000.

User-friendliness

Cetrics is the system that puts the user at the centre. You can quickly get started with the system, and while you work with it you get clear, accurate information about how things are working and whether anything has gone wrong.

Users can be assigned different levels of authorisation depending on their knowledge of the system and the extent to which they are permitted to influence the system. So more than one user in the organisation can use the system.

Expandability

Cetrics is built around a powerful core surrounded by functions which are like blocks. The core and its peripheral functions are all well defined and documented in a way that makes them open to expansion. This also means that the software is scalable and can suit both large and small systems.

This design approach means that changes and additions can be made to the system without altering the standard system. As a result, adaptations can be made with a high degree of security by skilled customers, consultants or B&S technicians at reasonable cost.

Flexibility

Using standard tools, Cetrics can be adapted to other systems, for example to export data. These may be billing systems, accounting systems or a simple Excel spreadsheet.

Reports in Cetrics are created with the standard tool Crystal Reports. Using this tool the customer can modify, add or create new reports for the system.



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What does Cetrics give the user?

Cetrics is used for the automatic collection of metering data from different kinds of communicating equipment. The system is an open solution and is non meter specific. The only requirement is for a pulsed output, Collected data is saved in database format and can be presented in different ways, eg: on-line, as graphics and as text. Data can be compared as well. Collected data can also be exported to another program, for example for accounting or to a rental billing system.

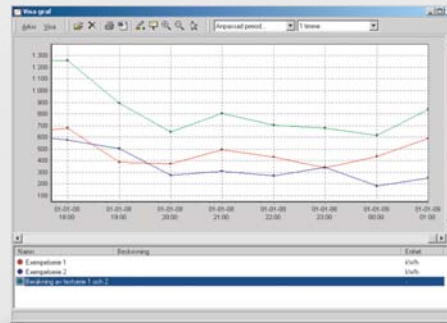
Data collection

Data can be collected from metering equipment in the usual way via the serial communication ports on a suitable medium. A communication port on a computer network can also be addressed. There is no need for the equipment to be connected to the computer where Cetrics is installed; it can be connected to the computer that is nearest to the metering equipment. This minimises the installation cost, for example for a company that normally has a computer network with extensive coverage.

Exporting data

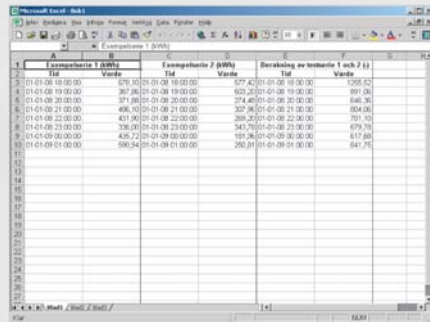
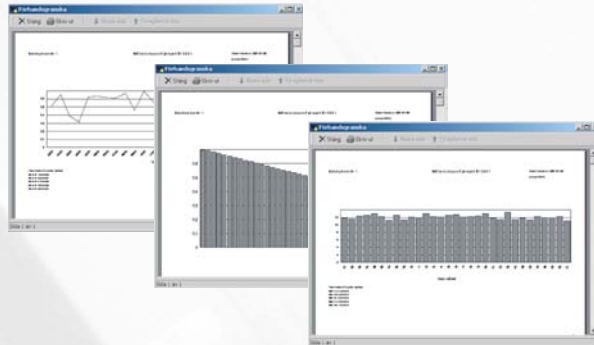
The ability to export data is often a vital part of a modern data processing system. This might involve the export of data to a rental billing system, for accounting or simply to Excel. This goes without saying in Cetrics, where data can be transferred to Excel simply by pressing a button. More automated transfers are also possible, of course.

the generator can be compared with the wind strength to see how the wind strength affects the efficiency. If you want to take out a subset for further presentation you can move all the data into Excel by pressing a button.



Reports

All reports have been developed with the standard tool Crystal Reports. Using this tool, changes / adjustments can be made in the reports, or more reports can be added. Some examples of standard reports are text, line and column reports, durability graphs and invoice information. These can be generated for any chosen period and resolution: day, week, month or year.



	Comptometer 1 gWh	Comptometer 2 gWh	Resolving on turbine 1 with 2 s
Time	Value	Value	Value
01-01-08 18:00:00	576,30	677,40	6,595,52
01-01-08 19:00:00	367,86	603,20	6,891,94
01-01-08 20:00:00	371,88	574,40	6,486,36
01-01-08 21:00:00	406,10	357,96	6,034,84
01-01-08 22:00:00	431,90	389,20	6,701,70
01-01-08 23:00:00	736,10	347,70	6,379,70
01-01-08 00:00:00	436,72	181,36	6,17,86
01-01-08 01:00:00	590,54	280,30	6,41,75

Graphical analysis tool

There is a graphical analysis tools for the rapid analysis of events. With the tool, chosen quantities can be compared. For example, the effect of outside temperature on power consumption. By generating the graphs of outside temperature and power, the process can be monitored over time. Another example is a wind farm, where the power from



Fields of application

Power supplier

In today's communication society, data is collected from metering points via one of the communication media that is available at a relatively low cost. The market is also insisting on more frequent readings and correct billing. Customers want to pay for what they have used and no more.

Cetric's offers an open solution in which different kinds of meters can be read. The system is customised for today's needs in terms of the export and presentation of metering data. B&S can supply a complete solution, from metering point to presentation.

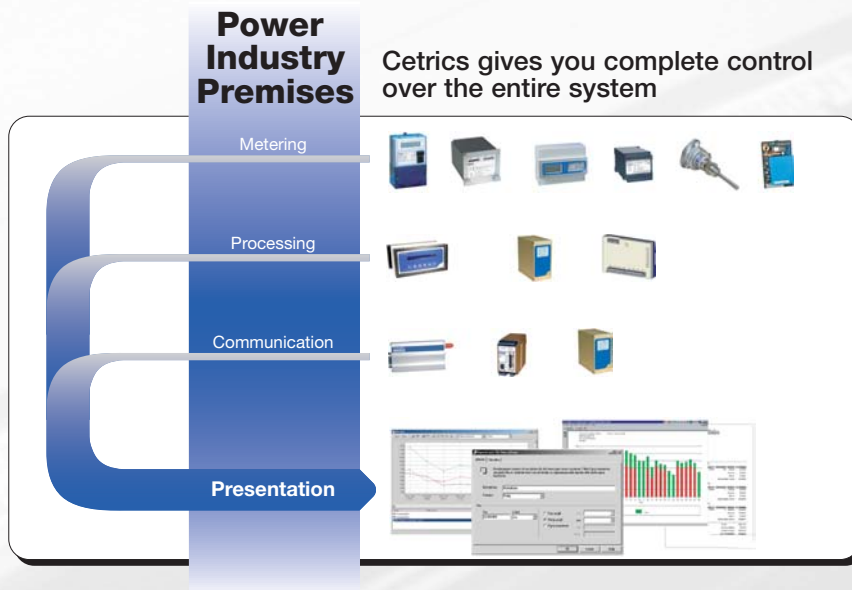
Industry

The system is used to create statistics which can form the basis of energy efficiency improvements and so cut energy costs. By studying the energy profiles, production hours can be planned to create a more uniform profile and reduce the costs of power subscriptions, for example. Cetric's handles price lists, tariffs and customers. The system is a perfect tool for cost sharing, both internally and externally.

The costs of consumption can be followed up and so linked to the products produced. This can be very valuable in energy-hungry processes where the energy accounts for a major share of the production cost.

Buildings

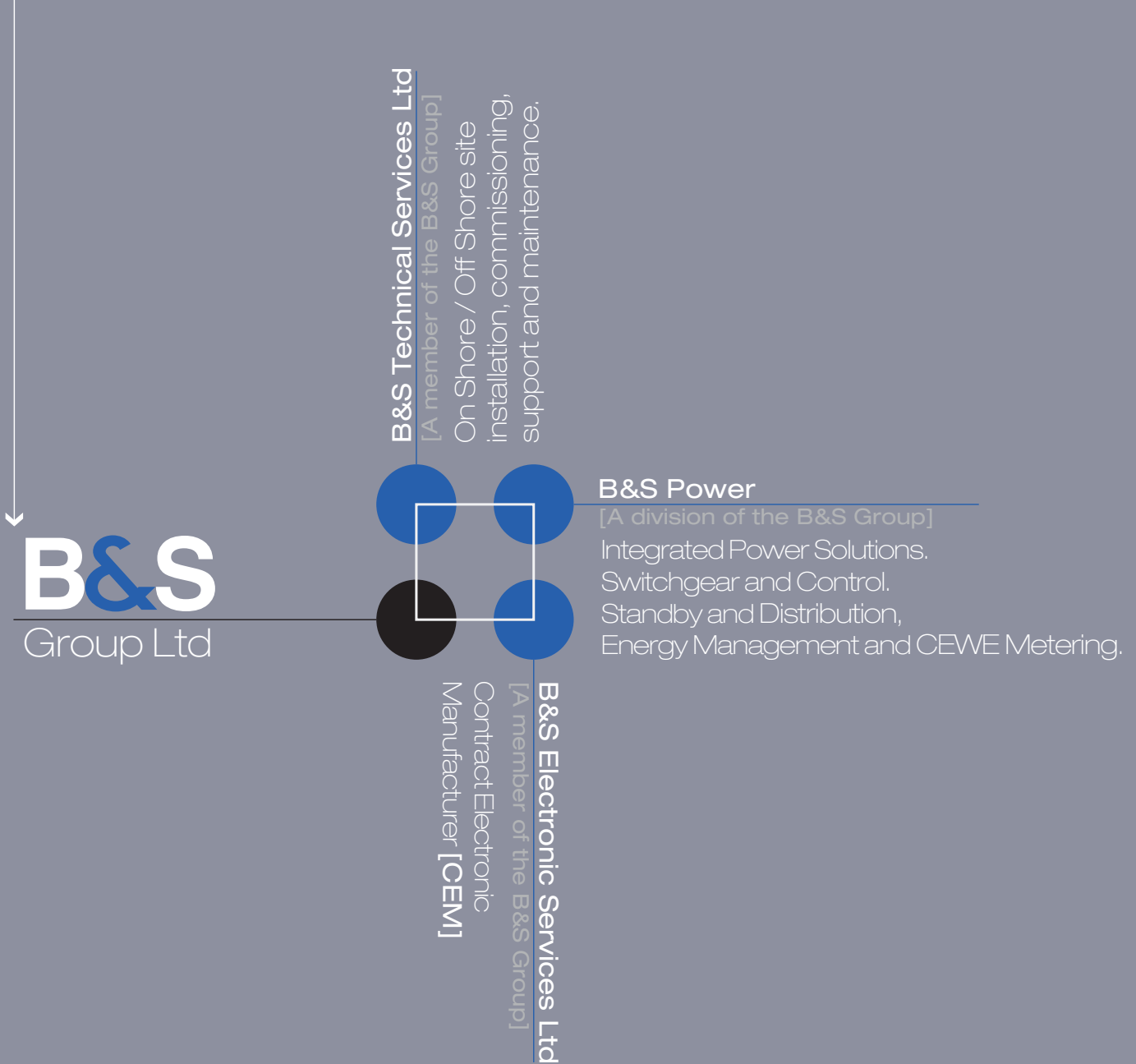
In commercial buildings there is a need for internal billing of consumption costs. Consumption must be metered and the costs must be shared out internally within the buildings for a fair allocation. Cetric's is the tool for collecting metered data and fairly allocating the costs.



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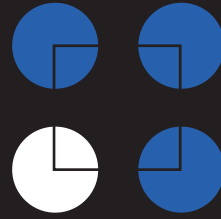


B&S company structure



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Power Division



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