pracujeme s energií

DIGRAST – Power Flow Management System

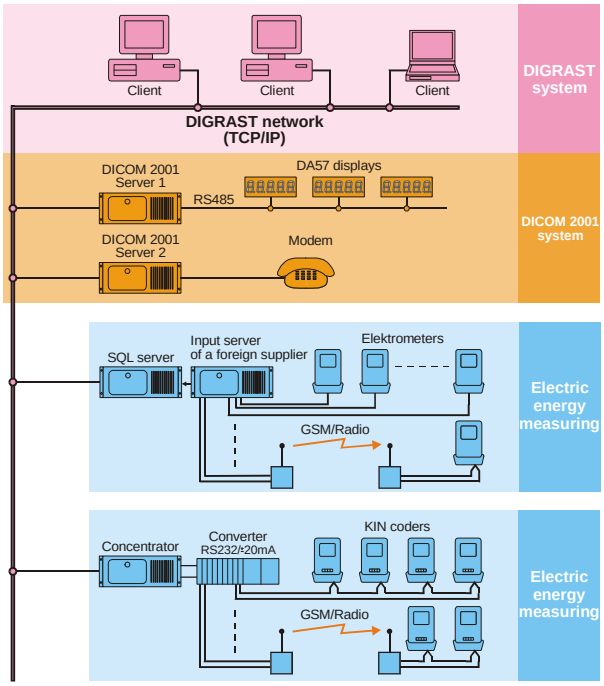
Information system designed for energetic plant dispatch centres. It informs operator staff very comprehensively and visually in real time about electric consumption throughout the whole monitored system. Its main function is to facilitate the work of control workers when controlling the individual system according to the approved values.

What is hidden in the abbreviation DIGRAST?

DIGRAST = **DI**spatcher **GRA**phic **S**ys**T**em.

Input data is pre-processed by

- measurement of electrical energy system
- DICOM 2001 system



Electrical energy measurement systems

These ensure synchronous data acquisition of electrical energy from checkpoints (points of supply, distribution centres, power plants etc.) in real time. Electrical energy acquisition systems by OSC, Plc or other companies can be used. The systems can duplicate or back each other up. For communication with measured points the systems use direct serial lines (metal or optic) or a GSM network – GPRS.

The superior DIGIRAST system receives data from electrical energy measuring systems via a TCP/IP network interface either by direct communication or via SQL database.

DICOM 2001 system

This is the core of the DIGIRAST system. It operates as a data server for processed data. This special software works in the Windows 2000/XP operating system as a service. It uses all modern technologies of these systems - Scripting Host, COM/DCOM/COM+, XML, OLE-DB.

The structure and the means of data processing in DICOM2001 system can be simply configured to comply with user requirements using Java Script or VB Script and XML language parameters.

The processing of data quantities (calculated or measured) is done at *minute intervals*. The system opens up the *actual value and history* of each data quantity. History is accessible to a user-defined depth – usually for 2 years.

The calculated quantities are logically divided into formations, where the formation is either a customer or a supplier in a region. The same quantities are calculated in each formation:

- currently connected formation input
- average connected formation input since beginning of hour
- currently imported energy since the beginning of hour
- permitted input up to the end of hour
- currently connectable formation input

This is a sophisticated event system allowing analysis of unusual states arising during operation.

The DICOM2001 system can operate on a single computer but for increased reliability it can be used on multiple machines, where each machine works

with identical DICOM2001 system configurations with automatic back-up option.

User functions of DIGRAST stations

The DIGRAST stations present data processing using the DICOM2001 system. All stations are identical. They use Windows 95 and higher platforms.

They offer these functions

- Monitoring of current system quantities. The current quantities are visible on a panel where the user can choose the systems in which he wants to monitor the quantities. The actual quantities are determined by the DICOM2001 system configuration.
- Presentation of current and historical quantity values in diagrams and tables. The actual diagram develops dynamically in time, which gives the dispatcher a very visual overview of the imported energy of individual systems. The current course can be compared to historical values and limits or predictions may be incorporated into it. Exceeding of value limits may be acoustically signalled; it is also possible to display balances and compare them to the current courses. All courses in graphs can be inspected in tables. All this can be printed.
- Operational logbook. Registers exceptional events arisen in points of supply, in tracks from acquisition points to a concentrator, in electrical energy measuring systems or in the DICOM2001 system. It has a capacity of 30 000 events.

Reference

Electrical energy measuring system at VČE Hradec Králové

This system evaluates measurement of purchases of the East Bohemian distributing plant from the ČEZ power grid, Poland and intercounty transmissions. Data is acquired by an electrical energy measuring system comprising approximately 20 KIN encoders and a duplicated electrical energy measuring centre. The DIGRAST system consists of two backed up DICOM2001 servers and four DIGRAST client stations.

Electrical energy measuring system at JČE České Budějovice (EON Energy)

This is a similar system to that at VČE Hradec Králové. Data is acquired by electrical energy measuring systems with approx. 13 KIN encoders and a duplicated electrical energy measuring centre together with GPRS measuring by Q-line. The DIGRAST system itself consists of two backed up DICOM2001 servers and six client DIGRAST stations.

OSC, a.s., company covers with its activities the area of production and distribution of electricity and heat. The Company provides a wide spectrum of engineering services, repair and consultancy services, and supplies complex, key ready sets of technical means for up to date control systems, systems for data and information processing and transfer, and simulation systems; the Company also develops special electronic elements and devices.