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This paper presents the application of concurrent programming on the server side of the emulated dispatching center for measuring electrical energy. The assumption made in this paper is that the measurement results from the measuring points are obtained by a stochastic method and are kept in the RAM memory of the central dispatching server. This assumption makes possible to increase overall result accuracy in long term measurement. However, this is not mandatory for concurrent approach in processing of given data. Technical requirement that has to be solved is speed in data processing. Since it is necessary to have a result in real time, it is necessary to process the results as quickly as possible. Concurrent programming solves this problem. The aim of this paper is to adapt the measurement data obtained from a large number of measuring points to the high accuracy and flexibility of the stochastic method, and that, in conjunction with the continuity of measurements, a higher accuracy is achieved. There are several concurrent approaches in present programming and here are presented three based on Microsoft© technologies: PLINQ, regular threads and thread pool.

MLI1.4

LABVIEW-ARDUINO UNO TEMPERATURE MEASURING SYSTEM

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Today's modern measuring technique is based on the implementation of microprocessor-supported measurement and information systems. The low price of computing and electronic components has led to measuring devices becoming software-oriented. The main emphasis is placed on the realization of complex mathematical algorithms, over sampled physical signals that were converted into electricity or voltage. The same case applies to temperature measurements. The temperature is undoubtedly the most widely measured physical size and there is a very large number of measuring methods and sensors that can precisely measure this size. Unfortunately, many temperature sensors have non-linear characteristics, so complex numerical formulas need to be applied to get the exact values. This paper presents a microprocessor measuring device for measuring and calibrating temperature sensors from silicon. The system is characterized by simplicity, low price and satisfactory accuracy. The device was realized with the Arduino UNO card and the program is written in the LabVIEW software package, using the LIFA library functions.

MLI1.5

NATURALLY WEIGHTED MEASUREMENT DATA IN POWER GRID - MEASUREMENT DATA IN FOURIER DOMAIN

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The latest development of stochastic digital measurement method allows extremely simple measurement of Fourier coefficients and, thus, the harmonic amplitudes: the natural weights of the measurement data in Fourier domain. The significance of each measurement data is defined by its weight, which allows the optimization of data recording, data analysis and artificial neural network training in a power grid.

MLI1.6

STOCHASTIC EMBEDDED SYSTEMS

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