DATA ACQUISITION SYSTEM USED FOR THE CONTROL OF THE SYNCHRONOUS MACHINE VALUES IN INSERTION TRANSITORY PROCESS

Ladislau AUGUSTINOV, Aurel CÂMPEANU, Teodor GAVRIŞ

lcaugustinov@gmail.com, acampeanu@em.ucv.ro, gate@uem.ro

Abstract − **This paper presents a modern system of measurement, acquisition and control. This work is a virtual instrumentation designed under Lab VIEW together with an acquisition board which offer many facilities: easy configuration and utilization, automation of measurements and flexibility.**

Keywords: *Lab VIEW, virtual instrumentation, data aquisition, synchronous machine, transitory process.*

1. INTRODUCTION

The start of the synchronous engine supposes either the use of an auxiliary machine, either the asynchronous start. In the case of the synchronous generator the connection to the network supposes an insertion process which should be very well controlled. Whatever the functioning system, the control of the synchronous machine parameters in insertion periods is necessary and very useful.

The authors have realized an equipment which uses the computer and LAB VIEW (data acquisition equipments, data processing and transfer), equipment which was tested in the laboratory and it will be used in the concrete case of a synchronous engine coupled to a producer.

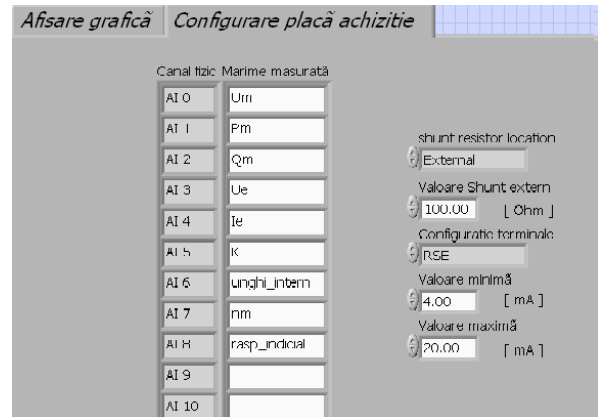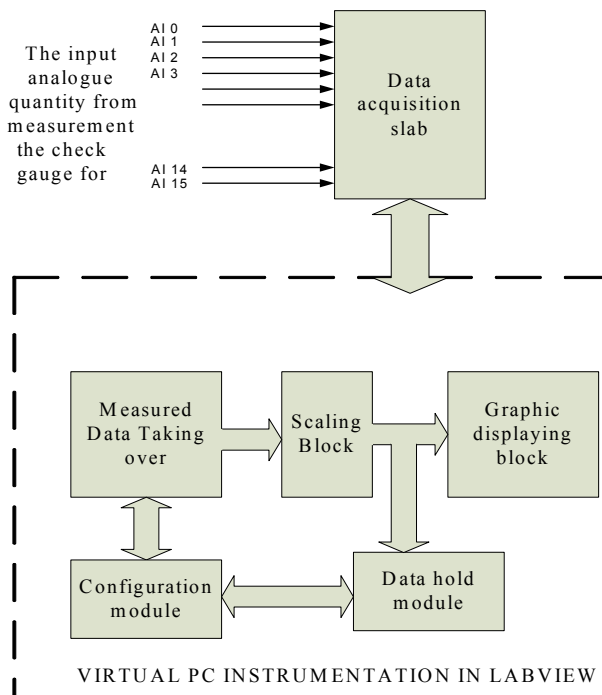## 2. THE DESCRIPTION OF THE BLOCK DIAGRAM

Figure 2. Acquisition board configuration

The functional block diagram of the acquisition, taking over and displaying system is presented in fig. 3. With the elements contained there are realized some logical and arithmetical operations and the functions which offer the instrumentation functionality.
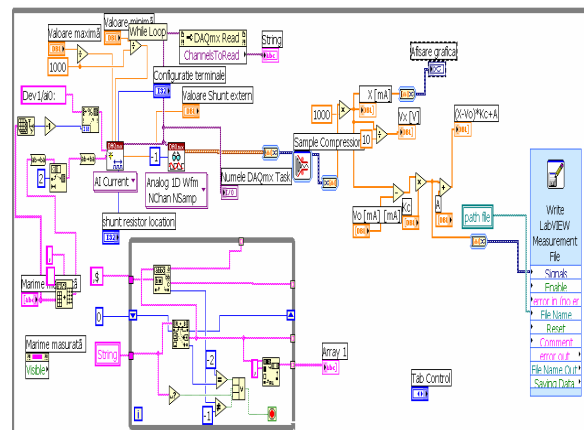

Fig. 3. The functional block diagram

The frontal board is presented in fig. 4 and it contains the graphic displaying field of the selected physical values which offer flexibility to the acquisition and measure system. The indicial answer is visualized at the level, step signal.
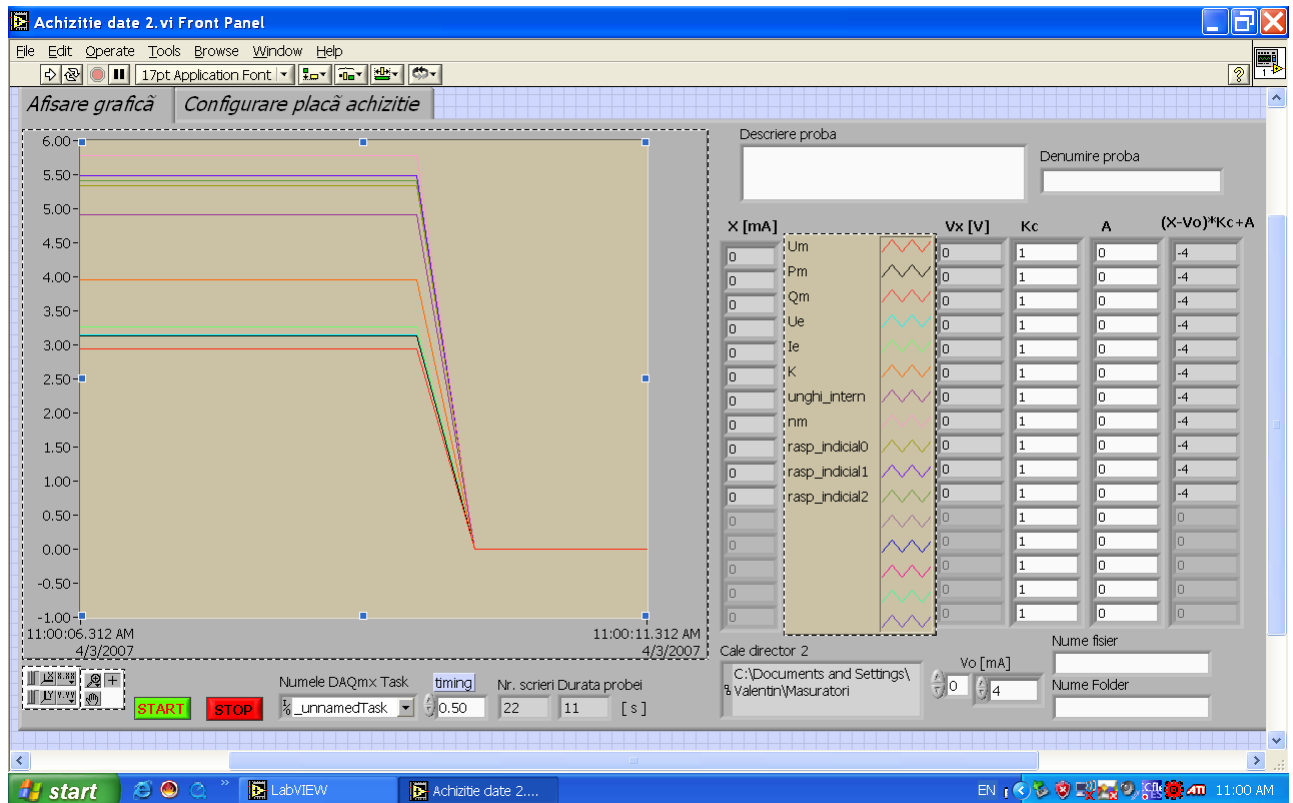
Fig. 4. Front panel

3. CONCLUZIONS

The equipment is realized in order to control the parameters of the synchronous machine (and of the coupled machine) in insertion process and in real functioning processes because:

- it permits the recording of 16 parameters in real time
- it constitutes a prototype
- the quality of the communication and of the recording of the values in real time results from the accuracy of the measurements
- in figure 4 it is highlighted the system weighted answer to the impulse signal recorded during the lab tests.

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