CONSULTANCY IN THE FIELD OF INDUSTRIAL TESTING SYSTEMS USING LABVIEW, LABWINDOWS/CVI AND NI TESTSTAND

Goal of the project

The goal of the project is to develop industrial testing systems using LabVIEW, LabWindows/CVI and NI TestStand.

Industrial testing systems can help to ease testing process and can speed up testing in the industry. The implemented testing systems were mostly functional testers of circuits, but there were also implemented ICT testers too. The goal was to make better and more optimal testers.

Short description of the project

The project included the creation of functional and ICT testers. The testers needed operator graphical user interfaces too (GUIs), which were implemented in LabVIEW and/or LabWindows/CVI. The test sequences were placed in NI TestStand and were ran using this environment.

Implementation period

01/04/2018 – 01/04/2018

Main activities

Applications development basics
- Simple applications:
    - Matrix Applications
    - Strings manipulation
    - File Handling
- he principles of programming events
- Error handling
- Creating user interfaces
- Using DAQmx Acquisition Cards
- Implementing data acquisition programs
- Communication Interfaces:
    - Serial Port (RS-232)
    - Parallel Port
    - GPIB (IEEE-488)
    - USB
    - Ethernet
- Interfacing Programmable Instruments

Results

During the project there were implemented more GUIs for different test equipment's. Some GUIs were made in LabVIEW others in LabWindows/CVI.

There were implemented some data acquisition programs. Also, there were made systems which could log measurement data in text files. There were implemented more test cases and more tests which were loaded in NI TestStand sequencer, this way easing the industrial testing.

### Applicability and transferability of the results

- The project can be implemented in many industrial test applications. The created GUIs in LabVIEW and LabWindows/CVI can be reused and extended and transferred to test other electrical parameters from other circuit boards for other systems.

- With this knowhow the measurement of electrical parameters can be speeded up to increase production volumes.

- GUIs in LabVIEW and LabWindows/CVI were implemented, also data acquisition programs in LabVIEW were implemented in the Honeywell Life Safety Romania S.R.L. plant and also test cases for NI TestStand were developed.

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Research team

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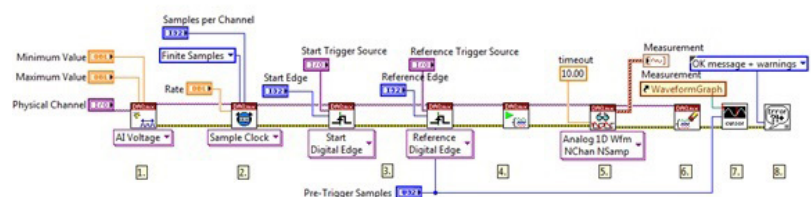
Data acquisition in LabVIEW

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