Automation measurement application using Labview development software

Objective:

Design and develop an automated measurement application using measurement and automation software to measure the bit error rate of digital communication link

General Approach:

The benefit of automated testing is linked to how many times a given test can be repeated. Tests that are only performed a few times are better left for manual testing. Good test cases for automation are ones that are run frequently and require large amounts of data to perform the same action

Success in test automation requires careful planning and design work. Start out by creating an automation plan. This allows you to identify the initial set of tests to automate, and serve as a guide for future tests. First, you should define your goal for automated testing and determine which types of tests to automate. There are a few different types of testing, and each has its place in the testing process. For instance, unit testing is used to test a small part of the intended application. To test a certain piece of the application's UI, you would use functional or GUI testing.

Design Tools and Methods :

The students will study different testing techniques and get difference between in circuit testing and functional testing and select suitable tools for testing communication links proposed test plane will be introduced, also programming with Labview from National Instruments will be mastered as connecting the different interfaces in the test setup. When creating tests, try to keep them small and focused on one objective. For example, separate tests for read-only versus read/write tests. This allows you to use these individual tests repeatedly without including them in every automated test.

Once you create several simple automated tests, you can group your tests into one, larger automated test. You can organize automated tests by the application's functional area, major/minor division in the application, common functions or a base set of test data. If an automated test refers to other tests, you may need to create a test tree, where you can run tests in a specific order .

Required staff

Those hardware and software are essential to the project :

- Bit error rate measurement instrument with GPIB interfaces for desktop or notebook computers
- Ni GPIB interface
- Digital Communication Link (two HDSL modems)
- LabVIEW full development system
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Project Deliverables:

By the end of this project an automated application will be designed and developed using labview and associated interfaces and BER tester with complete test setup, test procedures…..etc.

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