

Master 2014

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A Software Management Framework for Test Automation.

ABSTRACT - Masterthesis

From the past few years the popularity of xDSL services has increased drastically. As cost effective services are provided by the service providers with the usage of the existing copper loop, more and more customers are opting for it. As the demand is increasing the service providers must meet the customer expectations and provide a more reliable, high speed service. In order to meet their requirements and guarantee proper operation, extensive testing is required which plays a crucial role in the whole process.

KEYMILE GmbH, a company in Hannover has developed a product "MILEGATE". MILEGATE is a next generation platform access which accommodates broadband access, telephony and data service interfaces in a single platform. It also allows value added triple play services. The system is used worldwide and operates with end devices (CPE's) coming from third parties. To guarantee proper operation and high quality of the MILEGATE system, extensive interoperability tests are required. Hardware related xDSL performance tests, xDSL functional tests and CPE interoperability tests are currently automated by a Microsoft Windows XP based software framework mainly programmed in C/C++. Test setup configuration and test sequence configuration are done on the source level. The test results are generated in the form of a text based logging files, which need to be processed manually to get a presentable form (graphs, formatted tables, test report document).

The main aim of the thesis work is to create a software management framework for control and configuration of KEYMILE's test environment. The KEYMILE's test environment consists of a MILEGATE system with changing line card configurations, different xDSL CPE's (e.g. VDSL CPE's) and measurement equipment for data traffic tests.

The main intent of the master thesis is the development of software frontend and result postprocessor which runs on a PC (Windows or Linux) and controls and configures KEYMILE's test environment. The different tasks that has to be accomplished in the thesis work are

- Selection of interface architecture and method between new Frontend/Post processing and existing software (e.g. static library, dynamic library etc.)
- Practical test of an early software prototype. Review of the work together with KEYMILE team members.
- Setup of a full featured test environment. Demonstration of full featured implementation.
- Documentation of the software and the supported features.