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Performance Analysis of the Linux based Test System for Car Electronics during the Vehicle Assembly for the Validation of new Multi-Function-Tester MFT-3.

ABSTRACT - Masterthesis

In the recent times, the role of electronics in enhancing vehicle performance has grown tremendously. Subsequently, the complex network of Sensors, Actuators and Electronic Control Units (ECU) inside the car thereby increases testing and commissioning activities in the area of vehicle assembly. By utilizing test systems, electronic failures can be detected during the assembly process and be resolved. To improve efficiency, it is important that these failures are documented, analyzed and eliminated.

For this purpose, the Multi-Function Tester is a vital device for testing in the assembly line. These Testers have to be continually improved for consistency and better functionality. In this Master thesis on "Performance Analysis of the Linux based Test System for Car Electronics during Vehicle Assembly for the Validation of the new Multi-Function Tester MFT-3", the existing MFT was replaced by its successor MFT- 3, and thus it will be further analyzed for its performance. This study aims to create a possibility of raising efficiency and saving time during vehicle testing. Early detections and fixing of resource bottlenecks is also aimed at in this performance analysis study. By comparison measurements, this thesis work attempts to achieve a better differentiation of load cases in the production, concerning MFT-3 utilization. Additionally, this work estimates effects of various hardware and software specifications for systemic risk minimization.