Abstract

In today's car production quality management is becoming an essential part of manufacturing. It is owing to the fact that spare parts are provided by suppliers and producer undertakings mainly focus on the assembly of single components. In order to meet the growing requirements of the clients more and more precise control procedures are needed. The acquisition of professional testing devices is extremely sumptuous and there are tasks, which do not require the complexity provided by them, so the companies are striving to establish specified measuring stations.

I have chosen the construction and reconstruction of such a station as the subject of my thesis. During the realisation of the task I have established a testing environment with the help of which analyses can be carried out on the climate controller of the third generation Audi TT cars.

The introductory chapters are devoted to components of the electric system of modern cars, from sensors and actuators, through controllers to communication networks. Then I give information referring to car diagnostics, in order to make the topic more understandable. I describe the tests carried out in connection with the functioning of the climate controller. I present the steps of planning and realisation of the simulation environment, and the API designed to the simulation environment. After that I give an outline of the possible directions of future development. I end my work with the summary of the experiences gained during implementation and with the recommendations for development.