

## **Abstract**

The use of Surface Mount Technology (SMT) is widespread, because it has several advantages over Through-Hole Technology (THT). The electronic components are much smaller and without the wire leads much better electrical properties can be achieved. SMT components also have standardized packaging, which makes their storage and distribution easier. With this technology the production can be automated, making it cheaper.

MES – Manufacturing Execution System – is a computer system that supervises the production process. Its purpose is to follow the lifecycle of the product and to document the production and elaboration processes that it goes through. MES helps make it possible to switch from manual data input to automated solutions at every step of the manufacturing process.

The goal of my thesis is to improve the changeover and component inspection process of the inline programmer (RoadRunner) used on the SMT production lines, with support of the SMED method. The SMED method's purpose is to minimize the internal changeover processes. Internal changeover is the part of the changeover that can only be performed with the stopping of the machine.

The application prototype is capable of monitoring which product should be next on the given SMT. Based on this information it can stop, delete, modify or start the RodeRunner's current session. Furthermore the application also allows the survey of the product's MES system test data and the examination of the programmed components based on a reference file.

The final software helps minimize the faults caused by human error and supports the fast changeover between products.