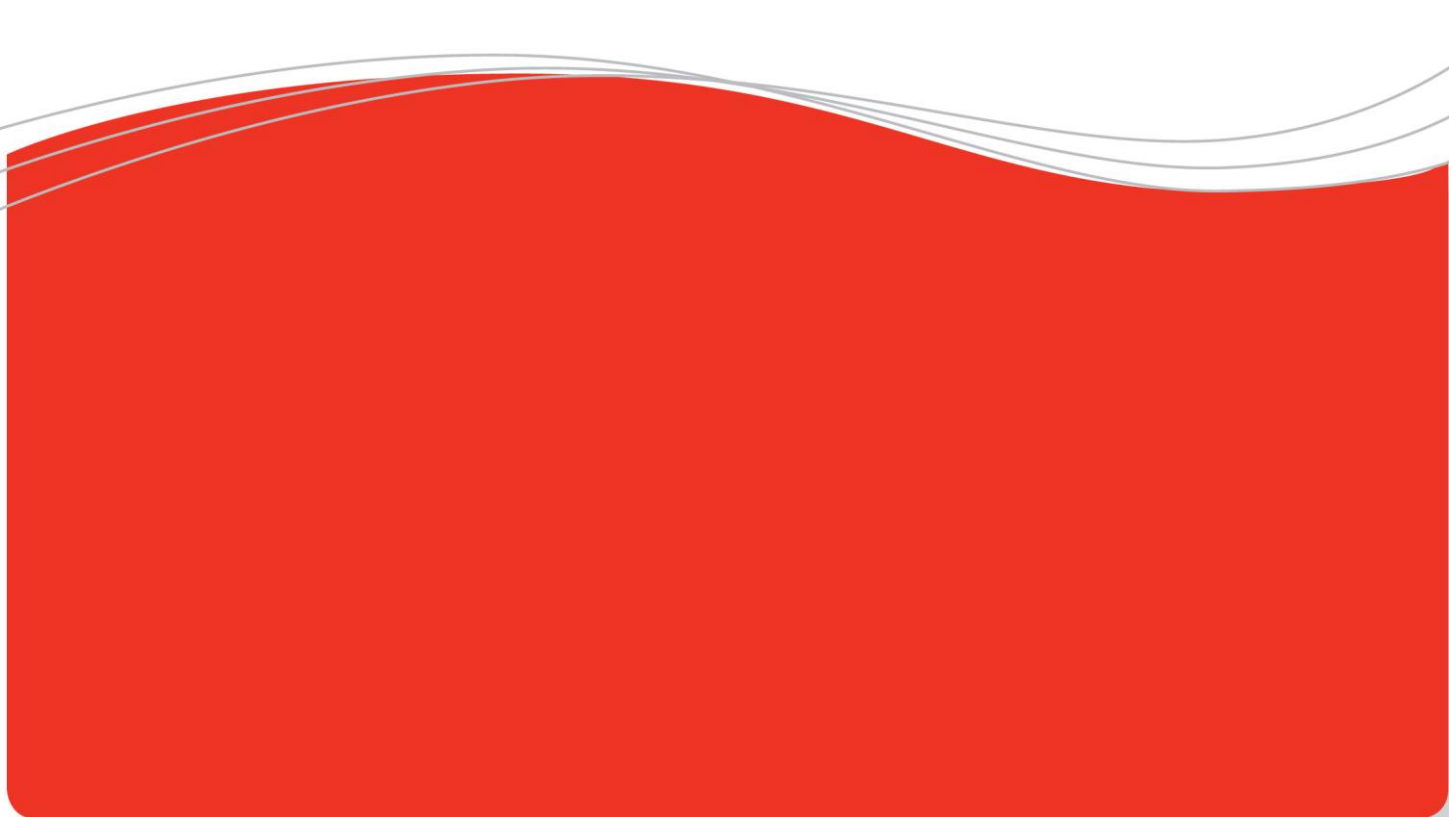




Integrating OEE and SPC: A SMED example



By Marc Schaeffers





Integrating OEE and SPC: A SMED example

INTRODUCTION

OEE is a proven technology to improve productivity. OEE systems typically have a large amount of data which can be analyzed in all kind of different ways. But data is not always the same as information.

By applying SPC techniques on OEE data you can turn valuable OEE data into information.

Monitoring the change over process

An important cause of downtime is changeover. Change over times can be dramatically reduced by applying Single Minute Exchange of Dies (SMED). This will have a major impact but how do you make sure that the change over procedure stays at an optimum level and how do you know the changeover process is not getting worse.

In OEE coach you can analyze change over data by showing a graph of the average change over time per shift for example. This data is shown in figure 1.

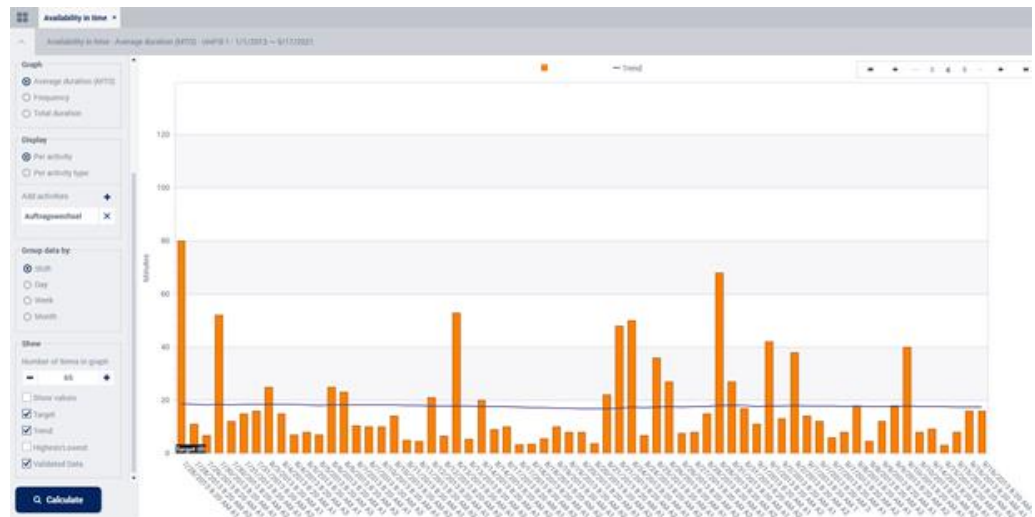


Figure 1: Change over data per shift for machine X

This data is very useful to see variation but instead of making the analysis periodically we would like to monitor this real time and get alarms if a change over time exceeds specification limits or control limits.



By integrating OEE and SPC we can show the changeover times real time in a control chart



Figure 2: Change over data of machine Y in a real-time control chart

A trend or out of control can immediately be signaled and corrective and/or preventive actions can be taken to prevent out of controls in the future. With each change over we can add tracking and tracing information like shift information or from which product to which product we are changing over providing valuable information to improve the change over process or keep the change over process at the required level.

DataLyzer offers a flexible interface between the OEE and SPC data. You can configure for almost any OEE characteristic a control chart which will be updated real-time. This interface will support the operator in signaling out of control situations and following the appropriate corrective and preventive actions and assist engineers and managers to continuously improve the process and get alerts for example by Email if a special situation occurs on the shop floor.

Conclusion:

SPC is a powerful technique to improve processes. Many OEE characteristics can be viewed as a process and applying SPC to these characteristics will help you to improve your OEE. In this document we showed you an example of SMED and how OEE Coach and SPC Qualis are integrated.



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