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Automated Process of Collecting Product Test Data and Creating Alarm Reports for Root Cause Analysis

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One of the most important product test machines (ATOS) are investigated in this global Autoliv project with the target to introduce an automated alarm system for product test data and a root cause analysis. We wanted a flexible automated software solution, which can transfer data into a SQL-database and perform a root cause analysis. Furthermore, we wanted to send web-based links of reports to an existing "leading-to-learn"(L2L) dispatch system, which informs machine owners via mail. For all these tasks we use JMP and automate all processes via Task Scheduler.

The investigated ATOS machines make 100% control and write all results of responses including additional data, e. g. machine parameters, into a daily log-file. We use the "multiple file import" of JMP based on "file date" to import the actual data of multiple machines/plants into the database. Before the transfer, different spellings of customers, product families etc. will be recoded/corrected. With a second SQL-database table we solved the challenge to get the last test result per part and all responses.

Our focus of this automated alarm system is based on scrap rates. As machine owners are not data scientists, each alarm report offers a top-down root cause analysis. We use the pre-defined JMP tool "Predictor Screening" to create analytical graphs, that highlights/color the root cause. If and only if alarm criteria are fulfilled, then the reports are saved, and the links are sent to L2L.

Keywords

automated reporting, industry 4.0, root cause analysis

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