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Industrialization of Maintenance by Means of Intelligent Automation

Taking the first steps toward intelligent automated maintenance processes

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Maintenance of large and old plants with high complexity is of great importance for productivity, safety, and environmental impacts. Maintenance planning and scheduling are known to rely on manual and time-consuming processing which is driven by expert knowledge. This can result in resource intensive and costly maintenance processes that are prone to human errors. Some automation criteria from the manufacturing domain have been used in previous studies such as the degree of repetition, tasks on the critical path, and the frequency of task execution. Many areas in the maintenance domain can be automated but a systematic approach for identifying the most profitable areas has yet to be identified.

This project aims at developing a systematic method for the identification and implementation of intelligent automation initiatives in maintenance planning and scheduling. By intelligent automation is meant processes that can be automatically processed by data-driven systems. The goal of introducing a systematic method is to achieve higher plant availability, an increased production output, and a better utilization of resources without compromising environmental impact and safety.