



Research School for Operations
Management and Logistics

Design of a Smart Network for Optimal Planning in Semiconductor Industry

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Equipment makes up the heart of the production process with manufacturing as its core task. However, setups, maintenance and engineering require time as well. Although all these tasks occupy the same equipment, in the current organization, they are scheduled manually and separately. On top of that, these schedules all rely on the assumption that everything occurs as planned.

The objective of this research is to maximize equipment utilization through the design of a smart network that unites all key operations through real-time data streams and uses this data to make well informed real-time decisions. With data as its lifeblood, the smart network is a autonomous system that can optimize performance across its entire territory, it can self-adapt and learn from changes that occur in real time. To ensure that the goals of this system are well aligned with the goals of our own, it is necessary to build and educate this system step-by-step. Thus, it is needed to start small, with smart solutions for each individual operation and smart links in-between.