

Optimization of Facility Layout and Production Systems through Digital Manufacturing Analysis

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In the context of dynamic global automotive technology competition, vehicle manufacturers must plan, organize and efficiently manufacture units without waste. Facilities planning and production systems have a significant impact on time-to-market and company's profitability. Facility layout decisions involve designing the arrangement of elements in manufacturing systems while the production process strategy have a long-term effect on efficiency and production, as well as flexibility. In this investigation a Reconfigurable Shared-Use Mobility Vehicle was designed and analyzed in order to improve product transition from product design into a production strategy to build and operate an efficient manufacturing facility. Production processes, equipment and systems were virtually validated by digital manufacturing and systems flow software to identify implemental solutions within the manufacturing strategy.

Keywords:

Lean Manufacturing, Manufacturing Analysis, Facility Planning, Process Strategy