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Industry 4.0 Trends, Costs and Movements Optimization Using Simulation Software in an Automotive Industry Company

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Abstract: The prevailing need of the automotive industry to adjust to the changing market demand, as well as the constant requirements to optimize resources for cost reduction, push companies to look for tools that allow them to make these adjustments quickly and efficiently, in addition to the forthcoming migration of companies to the Industry 4.0 context which has in the simulation one of the pillars for this purpose because it allows the decision makers to test different proposals and analyze their results at a low cost. This research work utilizes ProModel Simulation Software to seek cost reduction for a company in the automotive sector dedicated to designing technologies and services for the motor transport sector in Mexico, specifically in its manufacturing line for the truck engine with the highest demand of the company. Analyzing the simulation outcomes and comparing its results with the current state of the production line, there was a reduction in workers' movements, a decrease in the cycle time, which together with the adjustments made to the line translates into savings for the company, and gives the first steps of the company transformation towards Industry 4.0

Keywords: Simulation, ProModel, Industry 4.0