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Impact of Industry 4.0 on decision-making in an operational context

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ABSTRACT

The implementation of Industry 4.0 technologies suggests significant impacts on production systems productivity and decision-making process improvements. However, many manufacturers have difficulty determining to what extent these various technologies can reinforce the autonomy of teams and operational systems. This article addresses this issue by proposing a model describing different types of autonomy and the contribution of 4.0 technologies in the various steps of the decision-making processes. The model was confronted with a set of application cases from the literature. It emerges that new technologies' improvements are significant from a decision-making point of view and may eventually favor implementing new modes of autonomy. Decision-makers can rely on the proposed model to better understand the opportunities linked to the fusion of cybernetic, physical, and social spaces made possible by Industry 4.0.

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