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Operator-centred Lean 4.0 framework for flexible assembly lines

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Abstract

This article provides a starting point for developing a methodology to successfully implement Industry 4.0 technology for assembly operations. It presents a novel multi-layer human-centred conceptual model in line with Lean philosophy which identifies the assembly operator functions and relates them to other production departments, identifying how they would be affected by incorporating new digital technologies. The model shows that assembly operators would only be directly supported by hardware digital technologies; while the production support departments would mainly employ Industry 4.0 software technologies. The work presented here paves the way for developing a methodology for implementing Lean Assembly 4.0.

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