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Multi-agent based scheduling in manufacturing cells in a dynamic environment

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Abstract

Manufacturing systems are required to react to changes in demand and to deal with concerns in real time. This paper presents an architecture for manufacturing cells based on multi-agent systems. A simulation approach is used to investigate the utilisation of multi-agent systems in order to search for an architecture of manufacturing cells. The generic approach is to use multi-agent systems to approach the problem. A multi-agent system is used to complement the generic approach. The multi-agent system is used to measure the average performance of the system. The multi-agent system is used to manage the very dynamic conditions for internal and external exceptions of the manufacturing system. The

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simulation results highlight that the performance of the proposed approach outperforms the performance of the benchmark in all conditions.

Keywords: multi-agent systems scheduling negotiation dynamic environment simulation

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