

A review of the negotiation protocol for agent based manufacturing system control

ABSTRACT

An investigation in traditional approach to manufacturing system control based on centralized or hierarchical control structures presents good characteristics in terms of productivity due to its inherent optimization capabilities. However, it does not possess the dynamic and adaptive response to change which is currently the key to competitiveness in global market. Agent-based manufacturing system control fits into this gap left by the traditional approach and it is potentially beneficial due to the need for automated decision-making, reaction to disturbances and the parallel computation. This paper reviews the negotiation protocol in agent based manufacturing systems control and also explore negotiation mechanisms. While there are other interesting artificial intelligence techniques that have already been employed in manufacturing system controls for more than two decades, however, recent developments in multi-agent technique will bring new and interesting possibilities.

Keyword: Manufacturing system control; Multi-agent system; Negotiation protocol; Generative functions; Reactive functions