

"Petri nets in flexible manufacturing systems - current challenges and proposed novel deadlock recovery policy"

Petri nets are a powerful technique for modelling flexible manufacturing systems. However, in some situations the system may get stuck in a deadlock state and suspend its operation mode. We propose a novel deadlock recovery policy that may be used to automatically recover from the deadlock states, based on the analysis of a full reachability graph with minimized traversing. Additional recovery transitions are added to the existing structure of a Petri net without changing the existing state space. The solution may not be optimal regarding the number of added recovery transitions, but it can be found in a simple way by considering the closest legal markings. The preliminary results show, that despite its simplicity, the found deadlock recovery solution is comparable to other more complex methods from the literature, regarding the number of added recovery transitions.