

In the conventional supervisory control framework for discrete event systems (DESs) with partial event observation, it is assumed that, for each event, the corresponding output symbol is determined uniquely. However, this assumption does not hold in DESs such as a system with sensor errors and a mobile system, where an output symbol depends on not only an event but also a state at which the event occurs. In this technical note, we model such a DES by a Mealy automaton with a nondeterministic output function. We consider a supervisor, called the anti-permissive supervisor, that assigns its control action based on an anti-permissive policy. We introduce a notion of AP-achievability to characterize a class of languages achievable by the anti-permissive supervisor, and discuss the existence of a nonblocking supervisor.