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Abstract

This paper introduces a method to correctly order events in model based testing for concurrent systems, in particular multi-threaded programs, whose events are only partially ordered. For a sequential, centralized tester, we need merge (local) traces of each component into a (global) trace of a system in such a way that the ordering constraints are observed. To this end, we instrument multi-threaded program under test so that the order of lock events is visible. This additional information helps a so-called multiplexer to reconstruct a fully serial trace consistent with the partial order. We describe programs and the multiplexer as labeled transition systems and give pseudo-code of the algorithm implementing the latter. The implementation of the algorithm presented is used in an industrial context.