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Abstract

In this paper, we define a formal approach for translating internal tests derived for a component embedded within a modular system into external tests defined over the external observable alphabets of the system. The system is represented as two communicating complete deterministic finite state machines, an embedded component machine to be tested and a context machine that represents the remaining part of the system. The context is assumed to be fault free and the interactions between the component machines are observable. When an internal test can not be translated in the given context, we demonstrate how another test with the guaranteed fault detection power could be determined (if such a test exists) that can be translated in the given context.