

A Testing Theory for Real-Time Systems

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Temporal logic is a branch of logic which examines the logical structure of statements about the time with which the classical propositional or predicate logic can not fully cope.

The research in question is focused on „develop a testing theory for real-time systems“. We keep the usual notion of success or failure (based on finite runs) but we also provide a mechanism of determining the success or failure of infinite runs, using a formalism similar to the acceptance in Büchi automata. We present two refinement timed preorders similar to De Nicola and Hennessy's may and must testing. We then provide alternative, behavioural and language-based characterizations for these relations to show that the new preorders are extensions of the traditional preorders.

Another part will be focused just on the description of the characteristics of the logic TTL(TPTL). The reader is assumed a basic knowledge of propositional and predicate logic. A presentation will be focused introduction to temporal logic, ultimately will describe how to exploit the temporal logic.