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Abstract

The paper targets the applicability of model-driven methodologies to the validation of complex systems and presents a case study of a mobile radio network. Validation relies on the availability of a collection of models formally describing various aspects of the system behavior and an execution trace obtained through monitoring the system during the execution of designated test cases. The models describe system properties and are derived from existing (informal) system specifications or other traces. The recorded trace is reverse engineered to produce a model of the system that is used to visualize the architecture of the system during test execution and to verify the system against the specified properties using model checking technology. The obtained results and lessons learned from this case study are discussed.

Keywords: Model-driven development, reverse engineering, model verification, trace analysis, system validation, telecommunication industry, experience report.