

An algorithm to translate UML behavioral diagrams for formal verification

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Verification and Validation of complex software developed according to UML is not trivial due to complexity of the software itself, and the several different UML models/diagrams that can be used to model behavior and structure of the software. This paper presents an approach to translate three different UML behavioral diagrams (sequence, behavioral state machines, activity) into a single Transition System to support Model Checking of UML-based software. In our approach, properties are formalized based on use case diagrams. The translation is done for the traditional NuSMV model checker.