Minutes of Virtual Rapporteur Meeting for   
MBT ES “Concepts for Modelling”

# Date & time

Tue 7.12. 2010 9am-3pm CET

# Participants

Stephan Schulz / Conformiq (Rapporteur), Wolfgang Grieskamp / Microsoft, Andreas Ulrich / Siemens, Jayakishor Bhanja / Wipro, Andres Kull / Elvior, Alain Vouffo / FOKUS

# Summary

Numerous reviews were analyzed and changes discussed in document. Most discussed issues were proper referencing of already existing standards, integration of flowchart/interaction based approaches, removal of the model graph section and removal of test generation part. Nevertheless is seems still possible to reach agreement at least between tool vendors and finalize this standard in upcoming MTS meeting. Stephan promised a new revision of the standard by end for the week. A short 1 hour meeting was planned for Mon Dec 13 evening to discuss final open issues.

# More Detailed Notes

Introduction

* Should be clarified what means “open market”
* Maybe stress more it being mainly targeted for tool vendors.

Scope

* should state more clearly its contribution (especially in context to other existing standards)
  + it establishes a clear and consistent for concepts of modeling in context of MBT
  + general requirements on modeling notations for specifically testing
  + functional testing, conformance and interoperability testing
  + protocols/communicating systems
* Should clarify that only generation of abstract test cases and test instructions but not their refinement of abstract tests or test execution
  + Idea of first step in test specification. Clarify relation to TTCN-3.
* ISO-9646 test architecture part 2 should be referenced
* Z.500 needs to be take into account - emphasize this standard is more practical.

Terms

* Wolfgang crosschecked all of them with TEDDI
* coverage goals definition needs to be revised.
* Andres’ suggestions for changes were welcomed in general
* “extra functional” means “non-functional”
* “singular” means “atomic” .. or remove it.
* “requirement” definition needs to be redefined as an entity that can be linked to anything in a model
* “test specification” definition is not referenced and can be removed.

Model-Based test development process

* Heading should be changed to “Test development with Model-Based Testing” – current title is misleading and suggests definition of an ETSI MBT process
* abstract test cases needs to be mentioned .. abstract tests generated from abstract model.
* Should become more clear what is a model, relation to test purposes and descriptions (and ETSI test specification process), system under test.
* use “models for testing” instead of “system models” since term “system model” is misleading and not necessarily linked to testing

General modeling requirements

* Add request for graphical specification
* Mention hierarchy as example for 5.1 b)
* Remove 5.1 c) "(restrict) access to module information / visibility"

Modeling the system interface

* Call back scenario in missing in text on operations
* 6.1 c) should be removed
* Behavioral model with data vs. without data ... interaction based modeling does not require data
* Ok to extend set of required data type set, finite maps only a must for MS
* Port classically has FIFO semantics but buffering are classically excluded from modeling; example list should be extended and less “API like” with access point, endpoints of communication channels.
* Remove "reflecting a dynamically evolving architecture"
* Add 6.4 Configurations: set up initial static configuration, connection, create instances, associating them with end points. define the initial state, behavior associated with structural units, term “thread” should not be used as it is implementation specific

Modeling of system behavior

* It should also be mentioned to be able to attach requirements with to modelled states
* Requirements are not considered be part of model documentation.
* Concept of a requirement identifier is missing
* Add “Any modeling notation shall be based on a formal (i.e. unambiguous) operational semantics to support automatic test generation”
* Discussion on relation of requirements to interaction based MBT - "MSC Scenarios" produced by test generators; generated MSC are different from handwritten as they usually do not contain or unroll alternatives, loops and concurrency
* Big debate on removal of section 7.1 (informal); original idea was to define 7.1.1 terms model state, transition and label on transitions, then in 7.1.2 to introduce the meaning of conformance of model to system behavior; critique was that model graph appears as first glance as suggested modeling notation, model graph and game theoretic approach is not generic enough /not covering all scenarios and is potentially too tool specific, definition of semantics not related to SUT; proposal to remove the section and use introduce the term “abstract modeled system state” instead; drawback: harder to understand for readers who are not familiar with the concept of state
* 7.2. reference to “state machine” should be changed to “abstract state machine” with ESFM, statcharts in UML as example (reference)s, flowchart should have as example activity charts, sequence charts, e.g., UML sequence charts,
* Requirement for final state to be enable to modeling of final system state to be able to model quiescent, i.e., a state in which the system no longer produces observable responses. Remove rational related to “test case start and end” since it is causing misunderstanding. It is not related to test generation.
* 7.3 and 7.4 were not discussed in meeting. Rapporteur shall make proposal with track changes.

Instrumenting the model for test selection

* Decision to remove this section and handle it separately; difference in opinion if instrumentation is in scope of document or not; additional factor is work needed to make this section address all factors. Some explanation of test generation aspects could be moved to section 4.