Sophia Antipolis, 98.10.20 – 98.10.23

Question: 9 (MSC)

SOURCE: RAPPORTEUR

TITLE: INCOMPLETE MESSAGES

Contact: Jan Docekal, Telelogic AB, jan.docekal@telelogic.com

Abstract

The main problem is that found and lost messages where not defined properly, or that they don't catch the distinction of what is specified and what is observed. This problem has to do with the fact that incomplete messages are currently not allowed in the language. Incomplete messages, however, are a reality if the MSC language is to be able to catch incomplete traces.

Problem

A user can be in the situation that you specify that a message is lost or found and you want this to be the *specified* behavior. On the other hand, if you *observe* a system that has only an out event (that has not yet been rejected), you are not sure that that event has been lost, because it may be consumed later. Suppose you start a simulation and then start logging your system. After a while you stop logging your system (we call this log MSC A). You continue to simulate. Then You start logging your system again (we call this log MSC B). Then the following can happen.

A message m is sent in MSC A that is not consumed in MSC A. Instead it is consumed in MSC B. Now it would be wrong/unsuitable to say that message m was lost in MSC A, since the instance it was sent to did not explicitly reject the message. Later on we could observe that it was in fact consumed in MSC B. A situation when the message would have been lost is when the intended receiver has terminated for some reason or if the message was actively rejected by the receiving instance.

In MSC B, the situation is a little different. We get message m but we can't actually be sure if the message was found. Since we are in a simulated environment, we could be sure that this was actually a continuation of m or of it was a found message. Currently we do not have the possibility to express the fact that it is a continuation.

Proposal for solution

What we would like to se in MSC A and B are out and in connectors (similar to those in SDL) for message m, furthermore the connectors should have an attribute that identifies the message uniquely. This would enable us to show our lack of knowledge during MSC traces.