

Overview

The motivation is to restrict the usage of automatic variables in action block as the behavior is not well defined right now. This restriction may be lifted later. This proposal takes into account 1995 (assertions in for and foreach loops).

Suggested Resolution

In Clause 16.14.1, add at the end:

The action block of an assert statement shall not refer to an automatic variable declared outside of the action block, other than a loop control variable. An automatic loop control variable shall be treated like a constant in the action block of the assert statement that is within a **for** or **foreach** loop (see 16.14.5).

In Clause 16.14.2, add:

If the property has a disabled evaluation, neither the pass nor fail statements of the *action_block* are executed. The execution of pass and fail statements can be controlled by using assertion action control tasks. The assertion action control tasks are described in 19.11.

The action block of an assume statement shall not refer to an automatic variable declared outside of the action block, other than a loop control variable. An automatic loop control variable shall be treated like a constant in the action block of the assume statement that is within a **for** or **foreach** loop (see 16.14.5).

In Clause 16.14.3, add:

The pass statement specified in *statement_or_null* shall be executed once for each successful evaluation attempt of the underlying *property_spec*. The pass statement shall be executed in the Reactive region of the timestep in which the corresponding evaluation attempt succeeds. The execution of *statement_or_null* can be controlled by using assertion action control tasks. The assertion action control tasks are described in 19.11.

The pass statement of a cover statement shall not refer to an automatic variable declared outside of the pass statement, other than a loop control variable. An automatic loop control variable shall be treated like a constant in the pass statement of the cover statement that is within a **for** or **foreach** loop (see 16.14.5).

In clause 16.10, add:

Each argument of a subroutine call attached to a sequence must either be passed by value as an input or be passed by reference (either **ref** or **const ref**; see 13.5.2). Actual argument expressions that are passed by value use sampled values of the underlying variables and are consistent with the variable values used to evaluate the sequence match. The variable passed by value as an input can only be of a type allowed in 16.5.1. An automatic variable, other than a loop control variable, shall not be passed as an argument to subroutine call either as input or ref type. An automatic loop control variable shall be treated like a constant when passed as an argument to the subroutine call. The rules for passing elements of dynamic arrays, queues and associate arrays as ref arguments are described in 13.5.2.