1450.4 meeting minutes – 03/11/11

Attendees: Ernie Wahl, Ajay Khoche, Markus Seuring
Not present: Oleg Erlich, Jim O'Reilly, Paul Reuter

Agenda:

- IEEE Meeting Preamble (No discussion of proprietary information).
- Discuss pros and cons of keyword "Track" (in addition to Const) for variables/parameters. Explanation is as indicated in the minutes of last week's meeting.
- Continue work on section 7.6 "Variables and Expressions".

Summary:

Lengthy discussion regarding the Track proposal which affects how we view mathematical expressions in
STIL.0: Spec/Category/variable , Timing(WaveformTable), DCLevels.
STIL.4: SpecVariable, math_expr (Real, Compound, Seconds, etc.), Boolean, Integer, Limits.

The following is not the only difference between the status quo and the keyword Track proposal but I believe it focuses on the key.

Status quo (Current syntax doc, March 11, 2011, line 1640):
1 Seconds strb = 0.9*prd;
2 Seconds strb = 9ns;

Keyword Track proposal (Current syntax doc, March 11, 2011, line 1655):
3 Track Seconds strb = 0.9*prd;
4 Track Seconds strb = 9ns;

All four statements are legal. Lines 1 and 3 track prd, lines 2 and 4 have nothing to track on the right-hand side.

The difference is that for lines 1 or 2, an action block runtime assignment statement may assign a non-tracking literal value to a variable that was tracking or vice versa. For lines 3 or 4, the right-hand side can only be set at initialization, i.e., runtime assignment is illegal: this is the benefit of using tracking, i.e., once it is set to track as in line 3, it is guaranteed to do so while the test program is running.

The downside, I believe, is that the behavior of STIL.0 Spec/Category/variables doesn't follow that model, i.e., they track or not by virtue of association with different selectors during test program execution, e.g., consider:

```
Spec spec {
   Category cat {
      period = '10ns';
      strobe { Typ '9ns'; Max '0.9*prd'; }
   }
}
```

The virtue of the status quo model, lines 1 and 2, is that like Spec/Category/variables, it tracks when the right-hand side contains a variable, prd in our example, and doesn't when the right-hand side contains are no variables regardless of whether that variable appeared at initialization or at run-time.

The draw-back of the status quo model, is that it does not guarantee tracking during runtime due to the possibility of re-assignment.

Cost/benefit analysis does not lead to a black and white picture, so we have to make an engineering decision.

Polling results to date:

Ajay Khoche: Keyword Track proposal
Jim O'Reilly: Status quo (was originally in favor of Track proposal, but further discussion leads me to now favor the status quo).
Paul Reuter: Status quo? please confirm
Markus Seuring: Status quo
Ernie Wahl: Status quo

If there are more considerations to bring to bear, I ask members to bring them forward in the hope of reaching a decision next week so we can move forward.

Summary (based on meeting minutes and post-meeting email discussions via the reflector).

- Status quo (don't include the Track keyword)
  - Pro: Tracks when the RHS contains a variable, doesn't track when the RHS doesn't contain a variable - regardless of whether the variable (tracking) or literal (non-tracking) on the RHS was assigned at initialization, or at run-time in an Action block. Consistent with the behavior of spec variables.
  - Con: Does not guarantee tracking at runtime, since the variable may be reassigned (at runtime, in the Actions block) to take its value from a literal rather than another variable.
- Tracking:
  - Pro: Guaranteed to track during test program execution (this is accomplished by making it illegal to reassign the RHS of a Track variable at runtime).
  - Con: Inconsistent with the behavior of STIL.0 Spec/Category/variables. Spec variables (with categories and selector fields) track or not by virtue of association with different selectors during test program execution.

Actions:

- All WG Members: Please respond and state whether you agree or disagree with the two recommendations above
  - To include an additional keyword Track (along with Const) for variables/parameters (syntax and semantics as described above).

Reference documents (If logged into your google account, can edit. If not, can only view.)

- http://spreadsheets.google.com/ccc?key=0AoKiPr1I9LY9dF95dkhSTVVqOU5GbWJyWFNhY0JPX0E&hl=en
- Namespace resolution examples document: http://docs.google.com/Doc?docid=0AYKiPr1I9LY9ZGY4dmNjNTNfMGZkOGJ2bmZy&hl=en
- Scratchpad spreadsheet: https://spreadsheets0.google.com/ccc?key=tQ93VDnAZ-Cl9RFKpPrPDzw&authkey=COzyro8K&hl=en&authkey=COzyro8K#gid=0
- Scratchpad "Word" doc: https://docs1.google.com/document/d/1zVu2M8nTJsrm0nFbBhiuM8-YRt4ErYqdy_uSa3x3_T4/edit?authkey=CLrgwrsG#

Next meeting: 03/18/11

For reference STIL .4 information can be found at the IEEE STIL website: http://grouper.ieee.org/groups/1450/ (select the P1450.4 link from the table) or use the direct link http://grouper.ieee.org/groups/1450/dot4/index.html