1450.4 meeting minutes – 06/15/11

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

Agenda:

- IEEE Meeting Preamble (No discussion of proprietary information).
- Continue work on section 7.6 "Variables and Expressions".

Summary:

- **Issue**: Unless we make assumptions like use prd.Typ instead of, e.g., prd.Meas, line 23 or 24 (alternate representations) is in error because TestType has no Selector parameter so we don't know the value of spec.strb.Typ which according to our rules (unquoted mathematical expression) is evaluated at line line 23 or 24.

```
1 Spec spec1 {
2 prd {Meas None; Typ '50.00ns'; }
3 strb {Meas None; Typ '0.9*prd'; }
4 }
5
6 Spec spec2 {
7 prd {Meas '30.00ns'; Typ '50.00ns'; }
8 strb {Meas None; Typ '0.9*prd'; }
9 }
10
11 TestType T {
12 Parameters {
13 In Seconds strb1;
14 InOut SpecVariable strb2;
15 }
16 Variables {
17 Seconds s1 = strb1; // legal
18 Seconds s2 = strb2.Typ; // legal
19 Seconds s3 = strb2.Meas; // legal
20 }
21 }
22
23 Test T t1 {
24 strb1 = spec1.strb.Typ - 1ns; // RHS: unquoted mathexpr - legal
25 strb1 = spec1.strb - 1ns; // RHS: unquoted mathexpr - legal; equiv line
24
26 strb2 = spec1.strb; // RHS: reference - legal
27 }
28
29 Test T t2 {
30 strb1 = spec2.strb - 1ns; // RHS: unquoted mathexpr - illegal
31 strb2 = spec2.strb; // RHS: reference - legal
32 }
```

- **Consensus:** From the following two excerpts below we conclude that when only Typ values exist, as in "spec1" above, a selector (either a Selector block or an explicit selector field specification) is **not required** to resolve spec variable expressions.

  From "Elements of STIL", p136:

  > If a Spec Variable does not require multiple expressions for min, typ, or max, consider using the assignment statement for this definition. **The assignment statement will define only the Typ value of this variable, and all applications of that variable will reference that single definition.**

  From IEEE 1450-1999, pg 80:

  > If the Timing block referenced contains spec variables that have multiple categories, then one or more Category statements shall be specified in the PatternExec block. If the Timing block references spec

variables that contain multiple values (i.e., Min, Typ, or Max values), the variables shall be specified in an unambiguous manner, either by resolving which value to apply via a Selector block, or qualifying the variable name in the reference (for example, 'var.Min').

NOTES:
Since PatternExec allows 0 (or more) Selectors, this implies that Selector may not be required – which can be true Implies that Selector may not be required when all variables have only one value but different fields are set for each, e.g, one Meas and one Typ.

The text at line 2834 has been changed from:

When referring to a STIL.0 spec variable in a STIL.4 expression, one of the fields, Meas|Min|Typ|Max, must be selected, either directly, e.g., specname.catname.varname.Typ, or indirectly via an accompanying STIL.0 selector.

to:

When referring to a STIL.0 spec variable in a STIL.4 expression, one of the fields, Meas|Min|Typ|Max, must be selected, either directly, e.g., specname.catname.varname.Typ, or indirectly via an accompanying STIL.0 selector unless all spec variables in the containing block have only Typ values (None is not considered a value in this context) - in which case the Typ field is selected by default.

When assigning to a spec variable, whether directly or indirectly via a reference, the Meas field is automatically selected if not selected explicitly, e.g., statements

```
specname.catname.varname = 10ns;
```

and

```
specname.catname.varname.Meas = 10ns;
```

are in effect the same

- Added to Issues list as #54: Use keyword TestMethod instead of TestType?
  - P1450.5 is described as "Extensions to STIL for Semiconductor Test **Method** Specification", also, e.g., TestMethod DCMeas may be used to perform type VOH,VOL, IOZH, or IOZL, etc. If the term "Type" is already used in TestType, what do we call the parameter that describes the specialized use of this method ?

Actions:

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: 06/15/11

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