

Title: STIL 1450.3 Internal Review of 1450.3-D07

History:

- 01/17/03 - Added issues from Dan Fan as decided in 1/17 working group meeting
- 01/31/03 - Added issues from David Gallagher as decided in 1/31 working group meeting
- 02/14/03 - Added issues from Gregg Wilder as decided in 2/14 working group meeting
- 03/04/03 - Added issues from Bruce Kaufman as decided in 2/28 working group meeting
- 03/14/03 - Added issues from Don Organ as decided in 3/14 working group meeting

The working document “1450.3-D06” was reviewed by the following people.

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5. (GW) Gregg Wilder, TI, gwilder@dal.asp.ti.com

Significant issues and changes are listed in the table below. All issues not listed are editorial in nature and appropriate changes have been made in D07. Standard black font is used for resolutions that have been fully addressed and documented in the D07 document. Red italic font is used for resolutions that are still under discussion or have not been updated in D07.

Table 1: Summary of issues resolved in 1450.3-D07

Ident	Issue	Resolution
BK-1	Many typos, clarifications, and suggestions	3/4/03 - All have been incorporated in D07.
DF-1	3. Clause 5.1, Page 6, statement 22: - Why do we need list D/U and also D, U separately? Is the following statement identical? DriveEvents D/U/Z/P 2 1;	1/17 - There were two points of view on this: 1) to require all single or composit events that are allowed in the waveform to be specified, or 2) to require specification of composit events and define that any subset is also allowed. It was decided that option #2 is sufficient and is more concise. Note that the number of composit events is bounded by the second integer of the attribute list.

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DF-2	<p>6. Clause 5.2, page 10, statement 108: and 110: - Should these two events be D/U to provide pulses (opposite to 107 & 109)?</p>	<p>1/17 - wg concurred that it really doesn't matter in which order the states are specified as long as the wfc used in the pattern agrees with the wft definition. As a side note it was pointed out as we discussed this issue that the waveform labeled WCKVC should really be called "four state" waveform.</p>
DF-3	<p>8. Clause 5.4.2, page 15, statement 247: and 261: - Are these valid STIL syntax that we have same label <SEQ1> for the same scope under signal DIR in different WaveformTable ONE and THREE? The same question applies to <PER1> in both Waveformatble ONE, TWO, and FIVE. 12. Clause 7.4, page 21, statement 441: and 445: - Duplicate label question as item 8.</p>	<p>1/17 - wg decided that the example is OK and depends on the actual ATE architecture whether this assignment actually is possible or not. The targeting tool should know how to make the assignments. In separate discussion it was decided to call these tokens "resource tags" to differentiate from "labels".</p>
DF-4	<p>10. Clause 7, page 19, Table 3: - It is better to allow T (Tester Target) and L (Tester Loading) column has the same "X". It is ATE vender's choice to perform these checking in either (not both) stage. For the performance of test pattern loading, most of ATE vender will do the checking in Tester Target phase and only need to performance once.</p>	<p>1/17 - wg decided that table 3 should be put into a separate sub clause with a better lead-in description. It really isn't defining statement structure. This problem is addressed by renaming clause 7. The words at the beginning really are a lead in to the table already.</p>
DF-5	<p>15. Clause 12.1, page 26, all NOTES: - It will be better that we also add in the page number for each Clause reference, such as (5)... clause 18, page 38. and (7) clause 13, page 17.... The note (4) has invalid clause reference , clause 661 should be clause 19, page 42.</p>	<p>1/17 - done</p>

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DF-6	<p>20. Clause 19.1, page 42 - Keyword "Contents" and "Scope" have very similar role. Why do we have different syntax definition? The Contents will required multiple statements to facilitate multiple blocks while Scope can just use one statement with multiple parameters. Could we make them consistent, as -</p> <p>(Contents (STIL_BLOCK_NAME)+ ;)*</p> <p>(Scope (STIL_BLOCK_NAME)+ ;)*</p>	<p>1/17 - Greg (as author of this syntax) and rest of wg agreed that syntax should be same. Syntax to be:</p> <p>(Contents (STIL_BLOCK_NAME)+ ;)</p> <p>(Scope (STIL_BLOCK_NAME)+ ;)</p>
DF-7	<p>25. Clause 16.1, page 32: How do we specify RTD (Round Trip Delay) limitation of a channel? There is a limit for strobe to drive on which is the RTD on an IO channel. The current syntax specifies most of the limitations drive to drive or strobe to strobe.</p>	<p>1/17 - wg identified that RTD is covered by MinTimeAfterMatch. Note this is the time after a compare when the ATE can react.</p> <p>Discussion also revealed two missing statements:</p> <p>MinDriveOnToCompare</p> <p>MinCompareToDriveOn</p>
DF-8	<p>21. Clause 19.1, page 43, Note (4) - Need to resolve the TBD. i.e., need reference to regular expression document</p>	<p>1/17 - Contact Gordon Robinson suggests - Mastering Regular Expressions, Second Edition by Jeffrey, E. F. Friedl.</p>
DG-1	<p>1,2,3. Definitions of Timing sets and Channel - These terms are not clear what you are referring to, channel is a common term used by test engineers, but the term timing sets are used differently by different people.</p>	<p>1/31 - wg decided that terms such as these need to be defined in the glossary. Annex A will be re-instated and we will make a pass through the document extracting the key words to define.</p>
DG-2	<p>9. p14, note 3 - What if a pattern needs a label for one "Resource" and not for another, how is that sorted, if only one label is included in the "<...>"</p>	<p>1/31 - We need a symbol that indicates that there is no tag being referenced for a given ATI. wg decided to use '*' for this purpose.</p>
DG-3	<p>12. clause 7 - Statement Structure and Organization - does a block does have to be defined before it is used?</p>	<p>1/31 - Define before use is not required for TRC block. Add following sentence: "A reader is expected to process an entire TRC block prior to interpreting".</p>

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Ident	Issue	Resolution
DG-4	13, 14, 15. p21, clause 7.3 - Makes sense to keep with pattern, and imbedding it in the pattern file would insure this.	1/31 - No change required to the document. The issue as to whether the TRC is in the same or separate file is a function of the tool. It is also a function of the usage (i.e., 4 flows of figure 1). The standard allows either usage.
DG-5	16. p22, clause 8.1 - EXT_NAME will this allow multiple EXT_NAMES, TRC and CTL.	1/31 - The usage of this statement will be clarified by putting the keyword 'TRC' into this statement definition. Also need to remove the '+'.
DG-6	17. p26, clause 12.1 - are Constraints and PatternReport mutually exclusive?	1/31 - YES! The syntax requires that they be mutually exclusive. It depends on the application (i.e., which flow in fig 1)
DG-7	18. p26, clause 12.1 - are WaveformCharacteristics and WaveformDescriptions mutually exclusive.	1/31 - NO! Will add a sentence to each of these definition that so states. And, also will remove the 'may'.
DG-8	19. p28, clause 13.1 - MaxScanMemory - there is nothing defined here to specify the type of memory, xxx behind a pin, or a heap style for all scan.	1/31 - This issue led to a discussion of full support for any given ATE architecture. We decided to add a clause 1.3 which explains the 80/20 rule of TRC. Basic architecture rules, expression usage can go further, don't expect 100%.
DG-9	20. p28, clause 13.1 - SignalCharacteristics – Syntax (8) MaxVectorMemory - what is the purpose, as a limitation to pattern size / amount of memory behind a pin, or as a informational message to let the user know that there will be multiple vector memory loads. If the latter, should that be included here?	1/31 - The answer to the questions posed depends on the flow (fig 1 again). WG decided to add to clause 1.0 information explaining that the semantic of a statement changes depending on whether it is a "constraint" application or a "report" application.
DG-10	21. p42, clause 18.2 - PatternCharacteristics Example Line # 353 MaxVectors 5_000_000; ?? 5_000_000 isn't that supposed to be an interger_expr ?	1/31 - This confusion is caused by the use of things that are defined in 1450.1. WG decided that a sub-clause be added which discusses the dot1 dependencies used in dot3 - i.e., Environment, expressions, ...
DO-1	Many typos, clarifications, and suggestions	3/14 - All have been incorporated in D07.
DO-2	Clause 17: Suggestion to change the Min/Max notation for constraining timing edges to the use of an assert expression.	3/14 - This change has been incorporated. In conjunction with this change, the assert expression is to be used in place of the time_expr prior to the event-list. Also, the term @@ is used to represent the current timing edge.

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DO-3	Clause 12.1: Add Selector reference to the TRC block.	3/14 - This additional reference is added. Also, a clarification as to how to interpret Min/Max statements when a Spec variable that also has Min/Max is used.
DO-4	Integers: Don points out that testers will soon be exceeding the 2G limit of STIL integers. Can STIL support larger integers?	3/14 - The wg decided to propose a new statement to STIL.1 such as MaxIntegerSize that would be allowed somewhere in the header of a STIL file.
GW-1	Many typos, clarifications, and suggestions	2/14 - All have been incorporated in D07.
WG-1	clause 10 - Pragma - Proposal to move this block to 1450.1. There is a general need to use this facility to resolve UserFunctions. In particular, for CTL usage, a Pragma Tcl { * * } may be used to define the code that resolves a user keyword.	3/4/03 - The Pragma clause has moved to STIL1. All references to it and targetting application that use Pragmas still remain in this document.
WG-2	clause 14 - SignalCharacteristics Supply - need to define	1/31 - Greg Wilder working on it (chair of dot2)