

**Date – 03/08/2011**

**Attendees:** CJ Clark, Bill Tuthill, Dave Dubberke, Carl Barnhart, Wim Driessen, Brian Turmelle, Craig Stephan, Roland Latvala, Adam Ley, Adam Cron, Carol Pyron, Heiko Ehrenberg, Francisco Russi, Bill Eklow, John Braden, Ted Cleggett,

**Missing with pre-excuse** Ken Parker,

**Missing:** Lee Whetsel, Neil Jacobson, Ted Eaton, Mike Richetti,

**Agenda:**

- 1) Patent slides
- 2) Further review of Clause 6, 7 and 8

**Meeting Called to order at 11:00 am EST**

**Minutes:**

Review Patent Slide

Carl will post new version of draft to website after today's meeting

Continuation of Clause 6 review

Figure 6-9 State diagram for Persistence Controller

Rules mimic for Tap Controller.

Initialization mimics Tap Controller.

**Motion to adopt changes made to date to Clause 6 into draft without prejudice to future discussion or future changes.**

**Adam C seconds**

**No one opposed**

**Motion passes**

Clause 7 discussion

Very few changes made to this Clause

7.2.1b rule moved to 8.1.1

7.2.1b was a rule about how the test logic responds to instructions. Better suited for section 8.1.1

Moved text to describe the rule to 8.1.1

Clarified the text. “test logic responses to” rather than “actions resulting from”

Leaving b) with a pointer to 8.1.1 to avoid renumbering rules.

Francisco: add comment or rule regarding the state of TCK

Carl: descriptive text made it clear that the use of the word actions was different than in 6.2, because of execution of internal self test.

Francisco: action in state-machine. And action in instruction register.

Carl: took out the word action. Now Test Logic Responses. In regard to instruction register. The word “actions” was being used differently and modified rule to make it clear

Adam L: Seems like the original rule and the new rule stands in conflict with the test mode persistence controller.

Carl: controller isn’t an instruction. So it is not subject to this rule.

Adam L: controller is part of test logic.

Carl: test logic response is to set the state of the controller.

CJ: consider note or language that exempts clamp hold

Adam L: seems like an explanatory note is in order.

**Motion to adopt changes made to date to Clause 7 into draft without prejudice to future discussion or future changes.**

**Francisco seconds**

**No one opposed**

**Motion passes**

Clause 8 discussion

8.1

Only change was the rule that was moved down to 8.1.1

Permission g modified

Clarification that Rule e and Permission g ensures that the operation of the test logic is determined only by the current instruction plus data currently in the selected test data registers.

Adam L: suggests adding “controller states” to clarification.

Paragraph is slightly modified from descriptive text from 7.2.1 rule

b/permission f

Carl had distributed this change in email prior but this was not updated on website.

8.2

Public includes standard instructions

Private instructions are device specific

Recommendation to support IDCODE/CLAMP/ICRESET/HIGHZ

Recommendation h ) Ken wants merged into permission f)

CJ: rules introduce “products” and not “IC” or “component”

Carol: h needs to be reworded

Carl: if we remove if and add ClampHold and ClampRelease to f

Carol: agrees and remove h

CJ: text for h) might make better note

Carl: move to description.

CJ: note next to permission might highlight why this is done

Carl feels that 8.2 needs some work and will not move to accept changes now

Carl makes a motion to adopt changes in 8.1

CJ has some questions on 8.1.1e

Does not allow family of instructions

Carl: nothing in the rules to prevent a family

Adam C: instead of terminating talk about the new instruction activating?

Carl: intent is that when an instruction is loaded there is nothing going on that is not defined as part of that instruction.

CJ: likes Adam's suggestion

Carl: Changes rule e) to add "unless the new instruction supports the same response"

Francisco: would use term active instruction rather than terminate

CJ: word of response is leading people to think of the output of test.

Adam C: suggests "override".

CJ: hung up on Response

Roland: hung up on terminate

Carl: What do you do with a process that is kicked off by an instruction when that instruction goes away??

CJ: thinks that the addition gets us closer

This topic will be taken off line with an email discussion.

**Meeting adjourned: 12:06 pm EST.**

**Next Meeting:** 3/15/2011 11:00 am EST

Motions Made and Seconded

- 1. Motion to adopt changes made to date to Clause 6 into draft without prejudice to future discussion or future changes.**
  - a. Motion Passed Unopposed**
  
- 2. Motion to adopt changes made to date to Clause 7 into draft without prejudice to future discussion or future changes.**
  - a. Motion Passed Unopposed**

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### Current Issues listed and who will champion that issue.

1. Observe only. – Ken and Carl
1. Directionality linkage. - CJ
2. Power Pins. - Heiko
3. Pairing power pins with functional I/O - CJ
4. Sample / Capture. – Carol (Freescale) & Roland
5. TRST included in PCB level diagram. – Adam L.
6. Slow to Fall/Rise signaling issue – CJ
7. “No Connect” – Ken and Francisco.
8. Device ID – Still needs work
9. Low-Voltage self observe shorts coverage problem – JJ & Intel
10. Init – Carol & Carl

### Action Items:

- CJ will post 1149.1 draft on website with line numbers to make it easier to refer to items in discussion

## IEEE 1149.1- 2011 Boundary Scan Working Group Minutes

- Comment #10 CJ will take action to look at possibilities to add to the 1149.1WG website a document which shows which standards are based on 1149.1
- Comment #8 CJ will make changes to draft for observe only
- Comment #7 CJ will get in touch with Doug to get input regarding Comments
- Comment #5 CJ will Add a figure and little text to address TRST use with interconnection of components
- Comment #4 Adam L to add comment about TRST. Update figure 6.8
- Comment #3 Adam L will update language for any proposed change for this section.