IEEE 1149.1- 2012 JTAG Working Group Minutes

Date – 03/13/2012

Attendees: (19) CJ Clark, Adam Cron, Adam Ley, Bill Tuthill, Brian Erickson,Brian Turmelle, Carl Barnhart, Carol Pyron,Craig Stephan, Dharma Konda, Dave Dubberke, Francisco Russi, Hugh Wallace , John Braden, John Seibold, Josh Ferry, Peter Elias, Rich Cornejo, Roland Latvala, Ted Eaton, Wim Driessen,

Missing with pre-excuse: Heiko Ehrenberg,

Missing: Bill Bruce, , Lee Whetsel, Matthias Kamm , Mike Richetti, Neil Jacobson, Ted Cleggett, Sankaran Menon, Bill Eklow, Jeff Halnon, Ken Parker, Kent NG , Roger Sowada,

Agenda:

1) Patent Slides and Rules of Etiquette
2) Use LiveMeeting "Raised Hand" to be recognized and take the flo**o**r
3) Motion for Editor to begin MEC review at Editor's discretion
4) Clarification on iRunLoop

13441 **C.3.7.2 iRunLoop command**
13442 The purpose of the **iRunLoop** command is to delay any additional register loads or unloads, either by waiting a
13443 minimum absolute amount of time or by generating a minimum number of clock cycles. A typical application for
13444 the **iRunLoop** command is to generate clocks for a component hardware state machine or built-in self-test (BIST).
13445 Of the instructions defined in this standard, PDL procedures in support of RUNBIST, INIT_RUN, ECIDCODE, and
13446 INTEST might require the **iRunLoop** command. If multiple **iRunLoop** commands are specified, additional clock
13447 cycles or wait time will be generated. While this command executes, the TAP controller is in the current
13448 **iEndState**. If desired, the test clock may be stopped to reduce noise by specifying the **-tck_off** parameter.

    TMSReset ;# in TLR
    iRunLoop 1   ;# am I in TLR here or a valid iEndState?

Propose that this is clarified that TAP controller would need to move to RTI. And one clock in RTI after
    Moving to RTI.

5) Motion for REGISTER_CONSTRAINTS to be added to draft subject to corrections
            <exponentiation> is a typo
6) iSync command – synchronizing IC to IC EXTEST operations (do we need it?)
7) Rule needed for DOMAIN_EXTERNAL that requires a P_P_A description

Meeting Called to order at 10:38am EST

Minutes:
Review Patent Slide – Slide Presented to the Group.
        Solicited input from anybody who is aware of patents that might read on our standard.

No responses
Review of Working Group Meeting Guidelines
    No Objections

MEC
    Goal is to create a draft that goes to IEEE and that is balloted and because a standard.
    Need to go through MEC
    Can't get to ballot without MEC Review

Carl thinks we can get to MEC
Hugh : Can we make any incremental changes during MEC and what is the impact.
Carl: yes. It is up to the IEEE if we start over.
Carl: we don't intend to add anything major.
Hugh: Let's be careful about what we add.
CJ: After MEC we can still make changes but it is up to the group and will be tougher to vote through.
CJ: If we vote for the Editor to go ahead to go to MEC it is at his discretion and will tweak what needs to be tweaked.
Adam C: if it is going to take a month to get through MEC then there is no reason to put it into MEC until we feel we are a month away.
Ted: when are we going to discuss the other open items?
    Context Based PDL procs?
CJ: We will add it to the agenda next week.
Ted will resend the presentation and description
CJ: will this have an impact on the draft?
Carol: can ted give a brief description of context based pdl procs?
Ted: add on or different solution to what we have for instance based procs. Concept of being able to create a set of procs to target a scenario that an IP will be tested.   Different procs to apply to an ASIC in an ATE vs. on the board. You might need different scenarios for different applications. Like iTarget
Carl: doesn't consider this a major change. It would be a change to an existing command.
CJ: boil down to adding to the iproc command.

Carol: motion –for Editor to begin MEC review at Editors discretion
Josh seconds.
NO discussion
16 voting members on call

Yes

Bill T.	Brian T.	Carl B.	Carol P.	Craig S.
Dave D.	Dharma K.	Francisco R.	John B.	Josh F.
Rich C.	Roland L.			

No

Adam L.	Hugh W.	Ted E.

Abstain
        Adam C
12 yes 3 no 1 abstain
Motion passes

iRunLoop
Carl: end state can also be TLR
        All of the rules say iEndstate command sets a target for next iapply.
        You could have the iEndstate set and in TLR
        iEndstate does not have any affect under the UUT
CJ: no iEndState of TLR
        What benefit is there to be in TLR
Carl: there are times you could be in TLR
        Change definition of iEndstate to a command that actually goes out and play with
UUT
CJ: questioning more the value of iRunLoop in TLR.
Adam L: critical requirement be possible at least enter and exit RTI having been in RTI
for a time certain.
CJ: agrees with that. But have no way to enter RTI
Carl: yes.. with iApply.
CJ: no way to enter without doing iApply
Carl: when would you do a reset and need to be in RTI without executing some
instruction.
        Why do you need an iRunLoop in RTI
Adam L: If the only way to enter RTI through an iApply then we are in an RTI
Carl: all of the rules in standard where there is some period required are required to
tolerate exciding minimum delays. No way to guarantee a maximum number only
minimum.
Adam L: need to be able to stay in RTI for a time certain.
        If it is required by the group than we would need to have a command that meets
the requirement.

CJ: Need to get into the RTI state. If you are in TLR do you need another command to
move to you RTI? Would this command leave you in TLR
Adam L: Not trying to say anything to example. Just trying to state broader requirement.
        Typical example in pause and involve runtest that cycles you through current state
to run state. And it is in the runstate that you require the specified time.
Ted: you don't leave the specified target state at the end of the sequence.
Adam L: you move back to the endstate.
Ted: don't think we should be making judgments on what people do concerning stable
states. Any state you can Hold TMS constant and stay in should be stable state and end
state.
        iRunLoop should work more like runtest did .
CJ: iRunLoop command might be missing a starting state paremeter.

Carl: The simplest way of meeting requirement is to change iEndState from a setup command to an actual test command that does something with the UUT. In this case changing states.
CJ: adding in the iRunLoop the state you want to move to makes sense.
Carol:end state might want to include pause IR as a valid place to wait.
        Also having one state at a time commands might be nice.
Brian: agrees adding another endstate to the iRunLoop. Closest to runtest command and familiar with SVF.
Adam L. Not so much interested in working out solution but want to record the requirement.
CJ: things making it like runtest is the solution.
Carol: does that satisfy Ted's comments.
Ted: yes. But that is only half of it.
        Still want to know what are the valid states for iRunLoop
CJ: We should take this off line to tweak the command.

REGISTER_CONSTRAINTS

Carl: if it is an info type constraint do we want to make the info tag a mandatory.
        Having an explanation as to what is in error or warning is of value.
CJ: Info tag. Simple to make mandatory. If you don't want anything in there you can make them blank.
CJ: Not clear on error/warning/info if the operation is to be different.
        Should we be clear so the tools behave similar that we don't do the iApply.
Carl: the rule is if the check expression is true ,then don't do the iApply.
Carol: is that a good idea for Info?
CJ: turning off constraints is necessary if you need to do something. So adding levels would let you do different things based on the constraint.
        Would think INFO should do the iApply
Adam L:how are constraints dealt with at run time or at GUI time. Might be different behaviors wanted in those two different environments.
CJ: would be a tool decision maybe.
        Would be a mistake to have error/warning/info have the same behavior.
Carol – wanted to make a note that peter sent an email on constraints since the meeting started
Carol – motion –register constraints to be added to the draft subject to corrections
Peter – seconded
Discussion?
No Discussion
Yes

Bill T.	Brian T.	Carol P.	Craig S.
Dave D.	Dharma K.	Francisco R.	John B.
John S.	Josh F.	Peter E.	Rich C.
Roland L.	Ted E.	Wim D.	

No

Adam L.
Abstain
Carl B.
15 Yes 1 No 1 Abstain
Motion passes
*Adam C. did not respond on the phone

iSync
Wim/Peter added example to Carl's write up.
Wim – execution is done in order of iCalls
Should not be an iTake inside an iSync block
Carl: keeping the iMerge and iSync pieces together.
Can remove it.
CJ: what is iSync and how do you use it?
Carl: summary of what iSync
iSync and iMerge are similar.
iSync begin/end with icalls in between.
Enter the first icall and go until you reach an iSync hold.
And that would call the next iSync command until that proc reached an iSync hold.
You have synchronization point to line up the procedures and put multiple procedures into lockstep.

Discussion will be moved to reflector.

DOMAIN_EXTERNAL
Move discussion to reflector

Meeting adjourned: 12:03 EST.

Summary of Motions Voted on
2 Motions voted on

• **For the Editor to begin MEC review at Editors discretion**
  o **passed**
• **Register Constraints to be added to the draft subject to corrections**
  o **passed**

Next Meeting: 3/20/2012 11:00 AM EST

NOTES:

1149.1 working group website - http://grouper.ieee.org/groups/1149/1/

To Join the meeting
https://www.livemeeting.com/cc/intellitech/join?id=2CQ2PQ&role=attend&pw=n%26d%5DNqX%284

Meeting time: Tuesdays 10:30 AM (EST)   (Recurring)

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