

Date – 05/8/2012

Attendees: CJ Clark, Adam Ley, Bill Tuthill, Brian Turmelle, Carl Barnhart, Carol Pyron, Craig Stephan, Dave Dubberke, Dharma Konda, Francisco Russi, Heiko Ehrenberg, Hugh Wallace, Jeff Halnon, John Seibold, Josh Ferry, Ken Parker, Peter Elias, Rich Cornejo, Roland Latvala, Sankaran Menon, Wim Driessen, Kent NG , John Braden, Roger Sowada,

Missing with pre-excuse: Bill Eklow,

Missing: Lee Whetsel, Matthias Kamm , Mike Richetti, Neil Jacobson, Ted Cleggett, Brian Erickson, Adam Cron , Bill Bruce, Ted Eaton,

Agenda:

- 1) Patent Slides and Rules of Etiquette
- 2) Use LiveMeeting “Raised Hand” to be recognized and take the floor
- 3) A quick word on MEC
- 4) Carl’s proposal #1
 - a. Motion INIT_SETUP I/O parameters can take effect immediately or be deferred
 - b. Motion recommend all I/O affected by INIT_SETUP to have 3-states
Chair’s note: interconnect test strategy must be viable not just immediately after power on, but at any time.
- 5) Motion: Require PRELOAD before INIT_RUN. INIT_RUN a test mode instruction such that I/O would be disabled at INIT_RUN completion
(Chair’s note: This is hard to achieve for IC designer, how does one meet compliance since a sequence of operations are needed by the End user and not the IC producer?)
- 6) Motion to specify a system clock attribute needed for INIT_SETUP/INIT_RUN.
(This motion says two things, 1) system clocks are allowed for INIT_SETUP/INIT_RUN state machines 2) an attribute will specify the names of the ports required
 - a. Details to be specified later. Based on John Seibold’s example attribute SYSCLK_COMPLIANCE of xyz : entity is
“(“&
“(XUAI_REFCLK, 156.0e+6, OFF),”&
“(PCIX_REFCLK,100.0e+6, ON)”&
“”);
However, don’t want data clocks as shown. (FPGA one data clock per pair). Don’t need additional pinmap.
- 7) REGISTER_CONSTRAINTS
 - a. CJ to get with Carl, Bill, Hugh and anyone else for wrap-up
- 8) Finalizing for Ballot - Go to ballot before end of month

Meeting Called to order at 10:45 am 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

*Problem with VOIP on today's meeting. If any patent issues have come about please bring these up at next meeting as they may have been missed at today's meeting.

MEC – Positive MEC review and it has been returned. Need to wrap up loose ends to be ballot ready.

Need to clean up init-setup and other issues to be finalized by the end of the month.

Carl's Proposals

#1a [Motion INIT_SETUP I/O parameters can take effect immediately or be deferred](#)

Carol – standard documentation needs to notes that previous mission behavior will not be operating as expected.

CJ – as soon as you start init-setup your mission mode may not work.

CJ – right now as the standard is written it is deferred. Should it be immediate or deferred? Can the parameters take effect immediately?

Ken – if you decide to have a unspecified affect on the pins immediately you should document that.

CJ – could also be viewed as a big don't care. We are talking about analog parameters. Not talking about enabling bidirectional buffers.

Carol – part of the motion should include how we are going to document it.

CJ – sees it as separate and orthogonal

Carl – does not anticipate a need to document it. When you load the init-data instruction you are telling the world you don't care about mission mode anymore.

Carol –is the motion a standalone?

CJ – just discussing the first one.

Adam L – There was an idea that init-setup would help condition IO to support sample behaviors. Did we totally scuttle that?

Carl – during mission mode operation?

Adam L – some resemblance of mission mode

Adam L – is the consensus that we are not supporting it?

CJ – right

Ken – would like to understand the phrase immediate or deferred means.

Carl – can take effect immediately after init-setup. And update –ir of init setup instruction and update –ir after any test instruction after initialization

Ken – so UPDATE-IR can change IO.

Carl – OK then UPDATE-DR of init-setup and UPDATE-IR of the first test instruction other than INIT-SETUP and INIT-RUN

CJ – first DR scan of the data register. Does that affect anyone’s IC design or tools?

Anyone impacted if motion passes?

(Only Ken spoke up)

Ken – If we have init-setup which can begin to affect the board, subtly changed IO parameters, PLLs, IO’s changed and disturbs Communication paths between IC’s. Leads Intelligent ICs to react and go into alternative mode but reacting to bogus situations. Might need emergency response that you are not anticipating, worst of all it could be shutting down power in the system. The system could start behaving to these minor changes in the IO. Having an arbitrary amount of time, when it gets long there is opportunity for mischief that could be problematic for test engineers.

Carl moves that we modify the rules for init-setup to allow IO parameters to take effect immediately after being loaded or as currently prescribed

Dave D seconds motion

Yes

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

No

Adam L.	Jeff H.	Ken P.
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Abstain

Carl B.	Heiko H.	Hugh W.
Peter E.*	Wim D.*	

*Were not on phone at time of vote.

Motion passes

12/3/5

#1b [recommend all I/O affected by INIT_SETUP to have 3-states](#)

Ken – Cannot understand what motion means.

Carol- all IO affected by init-setup need to be tristateable.

CJ – just saying that the IO recommended having three states.

Carol – recommend or require?

CJ – motion says recommend.

Carol – most power-up of Chips goes into mission mode and not test mode. So we can't put strong requirements of what happens at power on or reset

Carl – If you don't have a requirement that these IO's go to tristated value (high-z) at some point, then why recommend this.. what does it for? The whole point of having tristate was to hide the fact that you were making changes to the IO. If you are no longer concerned on masking these changes they why have this. Doesn't see the point.

CJ – trying to capture the motion as it was written in email. And get the discussion going.

CJ – in favor of tristating IOs. For masking the effects of the IOs. Just trying to open up the floor for discussion to hash out the wording.

Carl – no longer serves a purpose.

Carol – as a recommendation doesn't have a problem with it. Generally good design practice. But can't make it a requirement. Could drop this.

CJ – no rule that the

CJ – in general we get more fault coverage if it can be tristated.

Hugh – may just list benefits of what you can get if you add this

CJ – we don't need anything to vote on here (unless any objections). For right now there isn't really a motion to be made here.

Proposal #3. Require PRELOAD before INIT_RUN. INIT_RUN a test mode instruction such that I/O would be disabled at INIT_RUN completion

Ken – why don't we have requirements like this for EXTEST and other invasive instructions?

Carl – don't know

Carl – would be a requirement on PDL processes.

CJ – in init-setup you would have to have some sort of PRELOAD

Dave – is it a test mode instruction or not a test mode instruction. Where does PRELOAD exist in that scenario?

Carl – INIT Run is going to be shutting down PLL and putting the board in a safe and cool state. Once done it is no longer capable running mission.

Dave – you would go to INIT-RUN , PRELOAD, EXTEST You don't know what init can be doing to your part. You might not be told all.

Initialization instruction would go first. And then PRELOAD type instructions.

Carl – for initialization wanted the PRELOAD before init run to put the chip into a 3state mode.

CJ – since we don't want to recommend the 3 state capability, not sure where this motion brings us.

Carl – if this motion passes and we have a need for it than we can revisit it.

Roland – INIT-RUN defined as a test mode instruction. Is this asserting the mode select lines and clamping the boundary?

CJ – yes asserting the test mode.

Roland – thought we had a discussion that it would clamp the boundary as well.

Ken – in the beginning not the end.

Carl – at INIT-RUN.

CJ – Don't need to make a motion for #3 as well. Consensus is that we need descriptive text to understand where PRELOAD plays a roll

Item #6

- 1) Motion to specify a system clock attribute needed for INIT_SETUP/INIT_RUN.
(This motion says two things, 1) system clocks are allowed for INIT_SETUP/INIT_RUN state machines 2) an attribute will specify the names of the ports require

Carol – is this to specify the min frequency of the clock?

CJ – or the range

Carol – this is a precise number, what is the precision going to be?

Carl – should be a max not min

CJ – would prefer to see minimum so it tells the test engineer what is the minimum clock that they can use.

Carl – should put in both min and max.

CJ – the thing we need to discuss is if we need to include system clocks.

CJ – would anyone like to speak up about the hardships of allowing them?

Carol – might have to specify which pins are connected to which clocks

Ken – board brings system clock in from external place. Needs to find where clocks are coming from and how to bring them onto the board in a reliable way.

CJ – applies to ECID as well because that needs System Clocks.

Jeff H – wants to endorse what Ken says . Few test engineers in the meeting.

CJ – would not want system clocks but thinks it might be challenging to the IC venders

Carol – system clock vs data clock. Data clock is main source for SerDes,

Carl – disagrees with Carol that you need to run large number of clocks into test logic.

Proposal does not mean you need to have an indefinite number of clocks. Could be used to restrict which clock used

CJ – defer motion till next week as we have run out of time.

Meeting adjourned: 12:05 pm EST.

Summary of Motions Voted on

1 Motion voted on

- 1) **modify the rules for INIT-SETUP to allow IO parameters to take effect immediately after being loaded or as currently prescribed**
 - a. Motion passes
 - b. 12/3/5

Next Meeting: 5/15/2012 11:00 AM EST

NOTES:

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

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