Date – 04/10/2012

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

Missing with pre-excuse: Roger Sowada, Adam Ley,

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

Agenda:

1) Patent Slides and Rules of Etiquette
2) Use LiveMeeting "Raised Hand" to be recognized and take the floor
3) Follow up on use of system clock for init_setup (Matt Heath presentation on Friday)
    a. Motion to allow use of system clock for init_setup
    b. If pass, do we need an attribute or keyword to convey sysclock is needed in BSDL?
4) Editor's comments on draft
    a) Need latest version
5) Finalizing for Ballot (What is left to tweak?)

Meeting Called to order at 10:39am 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

Discussion on using system clock for INIT_SETUP

Carol - There are ways to implement INIT_SETUP and INIT_RUN with TCK, but more difficult but can be done.
       Sees pros and cons for doing it
Ken –sees Issues from board test point of view of having external clock

1)the clock needs to be available on the board such that it could be enabled.
Clock could come from outside board.
2)100's of MHz to a board through a fixture is a challenge
3)If there is a defect on the board that you can't get the clock to the part you need it ot.

Solution is to bring the clock in and get it where it needs to be.
Letting it run while INIT_SETUP and then turning it off for EXTEST- coordination issue.

Josh – having free running clocks running inside fixtures at running at 100's MHz is not a good thing. In tune with Ken's view.

Carl – Would it be impractical if we did not require an external clock but said that if the clock has a free running internal clock it can be used . Would that be sufficient?
Carol – don't have on chip oscillators. PLL's don't free run
Jeff – need to be careful that we don't step on ourselves.
Carl – if we go forward to allow system clocks, what does the test world need as documentation? What do you need to have documented for Pin to run this.
Ken – INIT_RUN might have "Clock_failed" bit. Would at least give you an idea where to look. Need status indication that the chip thinks that it is getting the clock requirement. Needs to be something that can read out in INIT_STATUS.
Carl – would you want documentation showing a specific pin that is system clock.
Ken – seems like some kind of tag on it would be useful
Carl – has iClk statement in PDL
Ken – On Chip oscillator would be a possibility. Would like that better than having an external board signal coming in.   If there is a way to shut off the clock at EXTEST would alleviate fears
CJ – not seeing how the on chip oscillator is practical.
Would want to document some method would be better than not saying anything at all. Something recommended or preferred would be better than nothing. You would end up with a lot of non standard proprietary setups.   Don't want a lot of permutations
Hugh – agrees with CJ . Address this by saying that if you people want to do this we should show how we would like to implement it.
This standard (1149.1) it's obvious we are becoming at internally focused at running things that will need clocks.
Dave – more on the board side. Agrees with everybody. Silicon point of view and board point of views make sense. Agrees with Hugh though. Should decide how to do it today.
CJ – do we try to come up with a recommendation or are we opening Pandora's box?
Carol – would like to take a quick straw poll
CJ – how many people would be in favor in restricting INIT_SETUP to test clock only
3 raised hands.
Hugh - what are debating exactly? Is it that INIT_SETUP can not use another clock other than TCK.
CJ – yes exactly

Ken – for the purposes for doing EXTEST would like to see a restriction. But for other setups you may need system clocks.

CJ – talking about INIT_SETUP for EXTEST.

Carl – default rules are show as using INIT_SETUP with EXTEST.

CJ – straw poll – how many people would like the standard to allow the system clock used to configure the IO?

  10 hands raised.

CJ – is this as simple as ECID and allow system clocks for ECID or is it more complex.

CJ – do we have time to add?

  Already missed the September RevCom . can try for December RevCom

Carol – is this extensive enough to require another MEC?

Carl – depends on how extensive the change is

Carl solicits Ken's help to write up a section allowing system clock to have something to vote on?

Ken is willing to help Carl .

CJ – Ok on the ECID.

Carl – are we going to restrict the system clock for ECID the same way we would for init?

  Detect if it is running

  Shut it down

Ken – issue too can you shut off the clock after you get INIT working. Is that allowable?

Carl – does it get shut down just internal to the chip or on the board.

CJ – not anything we can do on the board level. The standard doesn't have to address this. Do we want to require some mechanism both in BSDL and architecture? That is what it comes down to. . is that difficult for IC designers to achieve as well ?

Ken – intent for INIT_SETUP and INIT_RUN was to get the proprietary stuff out in the open.

Roland – question about shutting the clock off inside the chip. If you allow the system clock that the clock should be shut off at the source and not at the end point.

Carl – from a board point of view that is obvious. From a standard point of view we can't dictate that since it is a board level thing.

CJ – should take this conversation to the reflector.

  Will need something to vote on

Bill E – Sounds like a non detectable non compliant type thing. How do you detect that someone turned the system clock off. Good to highly recommend to people to turn the system clock. If you make it a rule it will probably not happen all the time. We have system clocks running during EXTEST

CJ – contrary to the safe and cool thing. Opposite is happening as well.

Ken – if I require the clock running for some boundary scan stuff and after INIT_RUN and then turn off , would that be good for people?

Carol- thinks it does.

Bill E – ok with what Ken said.

Dave D – agrees with as well.

CJ – how crazy is it to have a bit in INIT_SEUP to turn the clock off ?

Carol – only during INIT should the clock be allowed. And should be a requirement that you can do EXTEST after INIT without system clocks present.

Would like Dave to come up with some rules that INTEL would be happy with. Ken would help Dave. Ted also indicated he would like to help (in email)

Carl – Doesn't look like a major change.

have already changed rule on INIT_SETUP and INIT_RUN about which clock to be used. Allowed system clock to be ruled. Already have the concept for fault cell. So need an added rule that would use a fault cell to report on status of clock. And a recommendation to allow the clock internally to be shut down after the initialization (INIT). In PDL look to add a key word to the iCLK so that there is a parameter to request the system clock be shut down.

CJ – doesn't agree with iCLK. Need more bits.

Carl – referring to board level clock. Documentation of the PDL coders intent to shutdown the clock.

Cj- the thing we don't have is that I have multiple pins that are clocks. Nothing that is communicating to the tool that this clock is required for INIT.

People will want from BSDL an indication that the system clock is required prior to running the BSDL. Need an attribute or other construct in the BSDL to describe requirement for clock.

Carl – do we allow more than 1 system clock

Ken - and more frequencies

Carol – no.. usually there are groupings.

Carol – Multiple clock architectures out there

Question is do you do native clocking or allow an alien clock?

CJ – ECID was an easier time.

Carl – ECID will probably run off of only one clock ?

CJ – May want to just deal with the few non compliant chips that come along instead of having to deal with multiple different system clocks.

Dave will come back with a recommendation for the system clock.

Meeting adjourned: 12:04pm EST.

Summary of Motions Voted on
0 Motions voted on

Next Meeting: 4/24/2012 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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