

Date – 02/21/2012

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

Missing with pre-excuse:

Missing: Bill Bruce, Brian Erickson, Lee Whetsel, Matthias Kamm, Mike Richetti, Neil Jacobson, Ted Cleggett, Rich Cornejo, Roger Sowada, Sankaran Menon, Ted Eaton,

Agenda:

- 1) Patent Slides and Rules of Etiquette
- 2) Use LiveMeeting “Raised Hand” to be recognized and take the floor
- 3) C.3.5, C.3.6, and C.3.7 review
- 4) Editor’s motion for draft

Meeting Called to order at 10:35 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

The chair inquires as to if people in the working group

Several members intend to sign up but have been busy with work

Dave – Can more than one per company vote in the Ballot

CJ points out that more than one vote counts per company in Balloting

Review of C.3.5

Carl – would like to continue the discussion of the Endstate until after the vote

Wim – yes.

Not clear on which model to use based on sequences

Carl – we are not doing read/modified/writes in normal states.

Capable to do it in Pause DR states.

CJ – We need to prepare before the meeting. If there is email coming in on the morning we can't start digging into that email in the meeting. We will hold off on those topics till next meeting. Want to get through the agenda

Carl – back to the iExport command...

It is unique to 1149.1

Should we drop iExport and add it as dash options to the iproc statements

Carl would like to know if there is there anyone who objects?

Ken – thinks it is a worthy idea. Maybe change iExport to public?

CJ – Shouldn't have to explicitly call –public or –export for any of the predefined procs.

Hugh – is this normative? Is this a case to guide someone?

CJ – ECID, INIT_RUN, INIT_SETUP, IC_RESET those are already public by definitions.

Carl – wants to know if we are getting rid of the export command and putting the – params on iproc. Key words are not decided yet. Don't want to spend time yet working on which ones are –private or –public.

Hugh – the four functions are public for sure. Are they different from saying –public as you would have to do for other commands?

Carl – no

Hugh – doesn't want to make exceptions. Shouldn't assume “public” for those four commands as it would add confusion to knowing if the other commands are public.

CJ – want to discuss public and private at a different time.

Wim – if you make the procedure private or public, what happens if there is a IP block function and move it. Is it still public?

CJ – lets table iExport. There seems to be a lot of confusion on its use.

CJ – Export is important to let the tool let the user know which procs he can run.

Carl – iExport was already raised on reflector. Need to know if we should go forward making the change.

Is there anyone who objects to dropping the iExport and putting parameters on the iProc command instead? ?

No Objections.

Will go ahead and make change.

That will be 1 of the editorial changes and will be presented to the working group on the reflector

No changes to the C.3.6 from published draft

Motion – accept with subject to future editorial and technical changes sections C.3.4, C.3.5, C.3.6 .

Seconded –Brian

No Discussion.

Question Called – Carol

Yes

Bill T, Brian T, Carl B, Carol P, Craig S, Dharma K, Heiko E, Josh F, Roland L

No

Adam L, Francisco R,

Abstain

Bill E, Dave D, Hugh W, Jeff H, Ken P, Peter E, Wim D.

Yes – 9

No – 2

Abstain – 7

Motion Passes

C.8

Carl – It was suggested that we change Irunloop to iWait.

However iRunLoop is a command in pdl0 in 1687

We should retain the iRunLoop.

Does anyone object keeping the iRunLoop to be aligned with 1687?

CJ – Thinks it would be better to be in alignment with 1687

Carol – are the parameters the same in 1149.1 as in 1687?

Carl – no. –tck only.(1687 has sck and tck) we have tck_off

Hugh – most of the parameters are in alignment with what the function does. We don't need to be lock step with parameters to 1687

Carl – 1687 assumes that all clocks are running all the time.

Hugh – you can determine if they are on or off.

Carl – is time a real number in seconds

Hugh – 1687 wanted to go to integer in nano or pico seconds. Wanted to avoid real number arithmetic.

Carl – so the way you specify time is different. No TCK_OFF is different. Tester can control clock. Use Real numbers for time in BSDL already.

Hugh – fundamentally it delays time and they both delay time.

Ken – that was the rationale thinking it should be called iWait. If we go that way(iWait) we can have whatever parameters we want because it would be different from 1687. No ambiguity.

Carl – not clear that it is fundamentally different enough to call it a different name.

Carl – iRunLoop in 1687 is time only? No cycle count?

Hugh – they have cycle count too. But both are time.

CJ – a little more than waiting. It also has to do the clocking.

Carol – likes the integer time, but we have real numbers in BSDL. But it could simply things overall.

CJ – that is a parameter thing.

Carol – true.

Heiko – would prefer iWait. Not enough of a preference though to go around in the discussion.

Ken – Real number saves you from a number format that is “out of date”. Time is an analog parameter. As opposed to clocking through a state machine. Example of this is the time it takes for a fuse to blow.

Carol – another use is waiting for a circuit to power up. (Time)

CJ – we also use iRunLoop where we need to generate the clocks.

Carl – yes.

Carol – yes we will have clocking state machines internally.

Carl – looking for guidance. Really an editorial change. So looking for a

Carl no objections to changing it. Will change it back to iRunLoop in all places. Had made some changes to iWait and will change it back.

Ken – 1678 doesn't have a time concept?

Carl – yes. it Has time. But has an integer and a time unit instead of a real number.

Carl – if 1687 and 1149.1 use “-time” than it should be the same.

Carl has put out the homework assignment. Has provided a suggestion in email as to which user might want to review which sections based on use case.

Optimization commands.

Miscellaneous commands.

iScan – 1687 changed its definition. No longer does a scan it simply does an iread and iwrite for a register you know nothing about other than it's default length. It would be a way to address a private register in a sense.

iScan – has changed its definition in alignment with 1687

Ken – was this in an email? When

Carl – it was in Friday's email

Ken – Feb 18th draft?

Carl – yes. C.3.9, and C.3.10

List of things we need to complete.

iExport

Need PowerPoint and definition

iMerge

Cleanup List (Carl's list)

CJ – let's publish the list of things we want to get done and resolved.

CJ – let's go through what iMerge does

This is a 1687 command.

CJ goes over PowerPoint

By using iMerge you can optimize the commands.

Will merge iApplies.

Ken – what does merge mean with respect to DR Scans. Or even IRScans

When I do an iapply that may imply an IR scan followed by DRScans. So each one of the iapplies can be some number of scans.

How do I line up the DR and IR scans?

How does that happen?

Adam C – It is Random.

CJ – same way.

Not random order. It is a fixed order.

Carl – there is no allowance for multiple IR scans with a single iapply.

All ireads and iwrites have to apply to the same TDR

There is only one irscan.

Hugh – made a statement iapply applies to one TDR.

CJ – definition of TDR is not consistent with 1149.1 when Carl says TDR he means that entire test data register in the chip. This is different than 1687

Having a single IR scan and up to 3 dr scans.

CJ – you don't have to do this. You can parse the iMerge begin and do each call sequentially and parse the iMerge end. No optimization but it is compliant.

So the tool can optimize or not. Both are legal.

CJ – iTake and iRelease tells the tool that this is a limited resource. i.e. taking the PLL and can't be touched. So the tool won't do anything until the PLL is released (iTake and iRelease)

PowerPoint that CJ is showing is in the private section of the 1149.1 WG website.

Wim – Suppose you have the requirement that the second iApply should be alleged with the iApply of the 3rd iCall. How do you handle this with a relation between the two?

CJ – the rules don't say you can or not. But might not be a way to do what you are saying.

Jeff – don't you have to be incredibly lucky to have everything line up well. ?

In the simplest parts where there is only 1 register you can do this.

In more complicated parts you won't be able to merge much because you are moving things between register and have other sequential restrictions that will make this not a very used feature.

CJ – thinks the more complex the chip, the more procedures you will have, so you will have more opportunities.

The more things on each TDR the more chances to merge. If you have a lot of separate TDRS you will have less chance to merge.

Jeff- you the procedure write can break it if you are putting procedures that alternate registers.

CJ – no sequence in procedure to merge procs together

Carl – there may be sequence in a single iProc with different TDR. Is the tool free to reorder that?

CJ – No. Can't reorder the iApplies /iReads/ iWrites in a proc.

Carl – as far as the standard goes. PDL is a documentation language. So Imerge is documenting that the following iCalls are believed to be mergable. Has to be an assertion that these iCalls are meragable. You shouldn't add iMerge at the beginning and end

Hugh – the assumption to start with is that the things you are merging are independent of each other.

If you know you need a relationship you write your test with a merge to make it come out the way you want.

Peter – iCalls were only instructions inside an iMerge. Not what I see in the standard(draft)

Carl – that is one of the changes that were made. iNode also allowed.

Meeting adjourned: 12:01 EST.

Summary of Motions Voted on

1 Motions voted on

accept with subject to future editorial and technical changes sections C.3.4, C.3.5, C.3.6 .

Yes 9 /No 2 / Abstain 7

Pass

Next Meeting: 2/28/2012 11:00 AM EST

NOTES:

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

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