

Date – 07/10/2012

Attendees: CJ Clark, Adam Ley, Adam Cron , Bill Bruce, Bill Eklow, 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, Peter Elias, Roland Latvala, Wim Driessen,

Missing with pre-excuse: Roger Sowada, Ken Parker,

Missing: Lee Whetsel, Matthias Kamm , Mike Richetti, Neil Jacobson, Ted Cleggett, Brian Erickson, Scott Wilkinson, Jason Chodora , Sam McMillan
Kent NG, Sankaran Menon, Ted Eaton, John Braden,
Rich Cornejo,

Agenda:

- 1) Patent Slides and Rules of Etiquette
- 2) Use LiveMeeting “Raised Hand” to be recognized and take the floor
- 3) Review of 7/05 draft
- 4) Discussion of 1500 SEGSTARTM/SEGMUXM. To do is a second 1500 example (note 1500 example complete with R_M for the WIR. Also need to check the BSDL portions in a parser.
- 5) Need to get this one on the table. Motion to go to submit draft for balloting when editor is ready. We need a few more reviews and incorporation of feedback given this past weekend. I would think we would be ready to submit the draft for ballot within two weeks. We can make minor tweaks/fixes to text during the balloting process as well which will be incorporated with balloters feedback.

Meeting Called to order at 10:30 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 Response

Review of Working Group Meeting Guidelines

No Objections

#3) Discussion of July 5th version of draft.

Carl has no comments to add.

Has not received any feedback yet.

Heiko will provide some feedback in the next week.

#4) 1500 Standard

CJ sent out document with proposal for what to be added to 1149.1 standard.

Field multi-bit mux assignment added

Added ken's diagram

CJ will fix segv and resend.

Added register mnemonics that Francisco wanted to see.

Example shows how to assign register mnemonic

Definitions and values of segments.

Hieko –on last page SegmentVal “select register” should be field

Bill B- could you add some PDL to example?

CJ – yes we can add some

Bill B- could show how you use instance names to get at each of the register_assemblies
iwrite to WIR. How would you put it in as an instance name?

CJ – not a bad idea to show how PDL and instances go together.

Carl – we have examples in PDL section. That is where we would want to put it.

CJ- would probably remove WIR1, WDR1 in reg_1500 example.

Bill B – might need different names.

Have an outer mux and inner mux which is different than other examples.

CJ – right.. going to instantiate two of these and put a selector between the two of them..
this is what we are doing in JEDEC and that will show how that is supported.

Adam C – serial port should be connectable between TDI-TDO complete.

CJ – all the WSPs?

Adam C- yes.

Adam C – internally you might have different instruction that select different WSPs.

Adam C – There is a select that turns on access to the serial port?

CJ – 1500 doesn't go into what drives the Select WIR. It is just an input into a wrapper
serial port.

Carl – definition of 1500 wrapper and WSP is a single SI/SO. We can treat that entire
1500 as a segment. It's the 11491 instruction that is deciding which 1500 segment is
selected. The Single Scan I and Single Scan Out is what 1500 requires. Doesn't say
anything about what 1149.1 can create to hook up to those.

CJ – Doesn't see a problem, just looking for some advice from any of the 1500 standard ;
people on the call.

CJ – where you don't have a WSP daisy chained is really just a 1149.1 architecture. The
thing that gets you to select multiple WSOs on WSP is 1149.1.

Adam C – Figure at back of 1500 standard does show 1149.1 hooking up to it. You can
select in and select in WSP from the TDI/TDO path

CJ – that is just informative. Not part of the rules.

Adam C – if you have some selection mechanism to select WSPs in a row that
mechanism comes from the TAP

Carl – since 1149.1 didn't support excludable segments it was not included in the 1500
standard, but there is nothing there keeping 1149.1 from using it.

Adam L – figure 36 shows parallel WSP

CJ – not a rule though

Adam L – doesn't believe there are any 1500 rules on how the cores are integrated.
Carl – we have rules in 1149.1 draft about how segments can be excluded or selected. If a segment is excluded, it does not respond to update DR. Recommendation it does not respond to capture-dr or shift-dr. Is there a similar rule in 1500.
Carol – We do clusters with 1500. For BIST engines.
 Nothing in 1500 that prevents that as a rule. We shouldn't either.
Carl – our rules do, if you are not selected the segment should hold its value.
CJ – would argue that it is selected.
Carol – in our case they are selected. Selected things in parallel
Carl – don't have a structure for that now.
CJ – could have a key word and add to it.
Carol – wonders if Mentor's BIST engines do something similar.
CJ – could indicate with a keyword for the mode to turn them all parallel. Might not want to go there.
CJ – could clarify definition of selected. What it means. Segments that are getting parallel scan are selected
Carol – selection on parallel scan is done by shiftEnable.
Carl – only one that we say we are violating are update.
Carol – chains don't have an update stage.
 Could have a parallel chain with no update.
Carl – could shift and capture with none selected.
 Non selected means TDO isn't connected.
Adam C – 12.3 shows rule for changing
CJ – rule is only on wrapper boundary register.
Carol- why was there an update rule?
Carl – in many cases you need segments to hold their values when they are excluded.
CJ – difference is architecture in what someone is trying to do. If you are using the TDRs and control and observation you need these updates to hold these signals from toggling. If you are using 1500 and serial chains where the objective is ATE you might not have an update register and not care if you have something wiggling.
Carl – if you there is a go bit you might need that to have update and nothing else does.
Bill B- if you care we have the rule. If we don't care, than it doesn't matter if we do the update. For an unselected register. Doesn't think that the rule existing matters.
Bill B – rules show what to do when selected but says nothing about when it is not selected.

Carl – if we didn't allow broadcast what would it cost if they are in serial not parallel
Carol – over 100 BIST engines.
Carl – how many bits
Carol – several hundreds
Carl – that is only tens of thousands on a 20 MHz clock. Is this something that the standard really needs to deal with?
Carol – yes.
Carl – are you willing to do it outside the standard?
Carol – yes.

Carol - today there is nothing to stop you from programming serial. The parallel is only for efficiencies.

CJ- the broadcast is very desired by the community.

Carl – I know but we need to draw a line somewhere or we will never be done.

CJ – could do broadcast under segment val.

Carol needed to know what segmentval was being broadcasted to.

Bill B – what is the definition of broadcast

Carl – scan fan-out. Multiple segments are shifting the same data.

Bill B - shift isn't gated off?

Carol – deliberately loading the same data onto multiple segments.

Bill B- so the rule for segments under the broadcast would be that they would all shift, capture and update simultaneously.

Carol – could do without update.

Bill B- need a uniform rule

Carl – if you don't have a rule about holding values in segment you would never know what the value was going to be when it is included.

Bill B – broadcast is permanent?

Carol – it is broadcast off of your select registers

Roland – does it infer which segment is connected to TDO

Carl – first one

SEGMENTVAL syntax worked on.

CJ – Do we need a broadcast keyword?

need to have a comma separated format, do we want to have the tool look for common values across the lists. Doesn't think the tool should infer broadcast

Will work on SEGMENTVAL on line. Need to incorporate into draft.

CJ would like to go to Ballot next month.

Meeting adjourned: 12:05 pm EST.

Summary of Motions Voted on

0 Motions voted on

Next Meeting: 7/17/2012 10:30 AM EST

NOTES:

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

To Join the meeting

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IEEE 1149.1- 2012 JTAG Working Group Minutes

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

AUDIO INFORMATION

-Computer Audio(Recommended)

To use computer audio, you need speakers and microphone, or a headset.

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