

Date – 11/09/2015

Attendees: CJ Clark, Adam Ley, Bill Tuthill, Bob Gottlieb, Brian Turmelle, Craig Stephan, Dharma Konda, Ismed Hartanto, JF Cote, Jon Colburn, Josh Ferry, Marc Hutner, Mike Ricchetti, Saman Adham, Steve Sunter, Tapan J Chakraborty,

Absent with Excuse:

Missing: Bill Huott, Carol Pyron, Jim Wilson, Kent Ng, Kevin Gorman, Tom Wayers, Heiko Ehrenburg, Dave Armstrong, Roger Sowada, Zahi Abuhanmdeh, Teresa McLaurin, Philippe Lebourg, Gurgen Harutyunyan, Frans de Jong, John Braden, Dwayne Burek, Gobinathan Athimolom,

Agenda:

- 1) Patent Slides
- 2) Review of Clause 9. We've had the new PDL commands since version 73. Is there a motion to accept Clause 9 in draft 74 or do we need more time to refine?
- 3) Review of Clause 10, draft 75. I've begun on the compliance check description. I ran into a couple of areas that I'd like your feedback on.
- 4) New Business
- 5) Adjourn

Meeting Called to order at 11:04 am EST

Minutes:

Review Patent Slide – Slides Presented to the Group.

Solicited input from anybody who is aware of patents that might read on our standard.

No responses noted.

Review of Clause 9

Craig makes motion to adopt Clause 9 as written in version 74 subject to any editorial pending changes.

Seconded by Bill

No discussion.

Yes/10

Bill T	Craig S	Jon C	Tapan C
Bob G	Dharma K	Josh F	
Brian T	Ismed H	Mike R	

No/0

Abstain/1

Adam L

IEEE 1149.10 High Speed JTAG Working Group Minutes

Motion passes

Yes -10 / No-0/ Abstain-1

Review clause 10

Steps for compliance

Step 3

Do we need an attribute that says that we have an 1149.1 TAP and we need it to enable 1149.10?

Saman – The design of a chip might have both TAPs, if we have another attribute for the DOT1 BSDL wouldn't that conflict with the DOT10 TAP

CJ – You can use 1149.1, compliance character, or compliance pins to enable DOT10

Saman – so for this case you are suggesting BSDL Attribute?

CJ – right. We have the HSTAP attribute. Tells the tester company how to plug into the HSTAP. Might be useful to be able to tell tester that the 1149.1 TAP is needed to enable DOT10 TAP. Would be clearer.

Saman – makes more sense to add it to make it clearer.

JF – what happens if someone wants a PEDDA but doesn't have a boundary scan register?

For BSDL to exist do you need a boundary scan register?

CJ – check out the BSDL section.

Steve – 3 methods listed for enabling the PEDDA are a logic OR. There is no way to disable the PEDDA. No way to not recognize compliance characters even if they came in.

CJ – right.. No way to do that.

CJ – do we want to include an attribute for that parameter that documents the need to enable 1149.1 tap to enable the DOT10

Josh – would like to see what it looks like.

CJ – proposed 1149_1_ENABLE with TRUE/FALSE.

Let's user know that it is needed and procedure should exist.

Currently the only way to know this is if you have the procedure or not.

So we don't have to look for the absence of those procedures.

Josh – thinks we need the attribute

Steve – you don't need 1149.1 TAP to enable DOT10 interface since there is this OR.

Bob – does that mean we are not compliant if we support this just by having the DOT1 mechanism.

CJ- compliance character is optional. You are not required any of those.

Steve – if you do have a compliance character defined than it always enables the PEDDA.

Step 6

Might need refinement.

Send IDLE as specified.. Not clear in HSTAP attribute that you need to do this.

Shouldn't we specify to say that IDLES are needed to keep link active?

Might want to be clearer on what we are sending, either IDLES or Mission Mode IDLES.

Keep_alive attribute to tell tester that it needs to send IDLES

Craig – I think this is a required parameter. As a tester you would need to know if you were a SERDES link and need the clock free running.. Maybe it can be inferred from a flag.

Marc – flag at beginning that you require continuous clock

CJ – flag or attribute.

Craig – this Boolean being a flag True/False

Marc – Is it just the Clock or do you need IDLES. Not sure if there are links that can survive with clocks and no IDLES.

CJ – Lets us describe the links. We have SERDES. Clock is recovered from Data. IDLES need to be sent so we can keep alive.

SPI interface with clock, this is a common clock driven from ATE. Wouldn't need free running clock or IDLES in this interface.

Not sure of other interfaces.

Marc – 3rd case could occur which is clock is necessary even though there is no data being transmitted.

CJ – ok.. Maybe it needs to be improved a little.

Steve – SPI example is not a high speed interface.

High speed interfaces almost always need something to keep it alive.

CJ – depends on what you define as high speed. SPI can run at 100Mbps

So we should understand the interface to get it right.

So we might want to improve step 6 to better describe what to do.

Raw_Return_Time: time required for the HSTAP to return to packet mode after the last COUNT value is used. I.e. when COUNT goes to zero.

Bob – what is happening in the interim?

CJ – COUNT is at zero. The expectation is that it should return to DOT10 mode. Might not be instantaneous. So this is the delay

Bob – what happens in between after count goes to zero and the delay?

CJ – it would be configuring the interface so it can receive the packet.. No expectation from standard.

Bob – so we don't have to do anything?

Steve – think you would have to send IDLES

CJ – after that count goes to zero you would need to send something to keep the link up.

If you want the link to still be there you would need to send IDLES.

Bob – so we really need a MAX number there. So as soon as you send this much data than you need to start sending IDLES.

CJ - there is some non-zero time that it takes before that interface is ready to take packets.

Bob – the interface does need to be able to decode IDLES right away?

CJ – raw mode doesn't mean that control characters disappears. Just that the packet decoder is not present.

Bob – in raw mode we are still decoding control characters?

CJ – still honoring the encoding that is present.

Steve – raw is anything. Return from Raw than you need to send non-garbage data for maximum interval.

CJ – raw would be garbage but required to be formatted in the encoding selected.

Steve- Nothing in the document says that.

CJ – encoding in the HSTAP attribute.

CJ – we can add HSTAP attribute is persistent.

Bob – if we have a RAW command with some count, that count could be numbers that could be interpreted as IDLES characters?

CJ – it can be whatever we want.. At the moment RAW data is random data that is still meeting the encoding standard.

CJ – are you turning encoding off?

Bob – expectation is that we would still have encoding.

CJ – so there are still control characters in the encoding.

Steve – they are ignored by the PEDDA.

CJ – but not ignored by the HSTAP

CJ – if it is still encoding we still can send IDLES.

Steve – but will still be ignored by the PEDDA

Motion to Adjourn – Craig

Seconded – Bob

Meeting adjourned: 12:03pm EST

Next Meeting:

November 16th 2015 11:00am

Motion Summary

1 motion made

adopt Clause 9 as written in version 74 subject to any editorial pending changes.

Motion passes

10-yes/ 0-No/ 1Abstain

Action Items

~~***Bill Tuthill – 10-21-2013 – Add minutes and Attendance spreadsheet to the website.***~~

~~***CJ – 11-11-2013 – Reach out to ATE industry and Probe Industry to get update on future of ATE equipment to see which data speeds and protocols they are heading towards.***~~

~~***Philippe – Look into alternative method to create control information (pause, start, terminate, etc.) rather than using K characters in packet.***~~

~~***Bob – create a case study to show use of Attributes***~~

~~***Frans – will start some block diagrams of a simple use case to help illustrate the current architecture***~~

IEEE 1149.10 High Speed JTAG Working Group Minutes

***Dwayne—present to the group his ideas for a simplified scheme—Direct Interface.
Adam—invite someone from IEEE to speak on IEEE benefits of standardization at
WG meeting***

Call for Essential Patent notes

Adam Ley 12/1/2014

PN, TTL, AN

7348796, METHOD AND SYSTEM FOR NETWORK-ON-CHIP AND OTHER INTEGRATED CIRCUIT
ARCHITECTURES, DAFCA INC.

Steve Sunter 11/17/2014

1. US 7610532 "Serializer/de-serializer bus controller interface" Avago, granted 2009
2. US 7739567 "Utilizing serializer-deserializer transmit and receive pads for parallel scan test data" Avago, granted 2010
3. US 8543876 "Method and apparatus for serial scan test data delivery" Altera, granted 2014

NOTES:

1149.10 working group website - <http://grouper.ieee.org/groups/1149/10/>

Here is the WebEx conference link.

<https://meetings.webex.com/collabs/meetings/join?uuid=MAG12PB7HN5W24AM2EOKIOM9KS-KERT>

You can use VOIP on your computer or dial-in using the phone number below.

Audio Connection

+1-415-655-0001

Access code: 194 196 960