

Date – 09/28/2015

Attendees: CJ Clark, Adam Ley, Bill Tuthill, Bob Gottlieb, Brian Turmelle, Craig Stephan, Dharma Konda, Dwayne Burek, Ismed Hartanto, Jon Colburn, Josh Ferry, Mike Ricchetti, 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, Saman Adham, Teresa McLaurin, Philippe Lebourg, Steve Sunter, Gurgen Harutyunyan, Frans de Jong, John Braden, Marc Hutner, Gobinathan Athimolom,

Agenda:

- 1) Patent Slides
- 2) Continue discussion on how packets (other than ch-select/scan) are generated
 - a. Josh Ferry proposal on new PDL commands
 - b. iPDLLLevel command can indicate iProcs which contain .10 specific commands
 - i. iPDLLLevel 0 -version STD_1149_10_2016 ;
 - c. Dwayne Burek – show use model for ATPG
 - i. I have a slide that may help the discussion
- 3) New Business
- 4) Adjourn

Meeting Called to order at 11:05 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 other responses noted.

Continued discussion on how packets other than ch-select/scan packets are generated

Josh – PDL

Proposing 5 new PDL commands

iConfig[Target ID]

iTarget[Targe ID]

iReset10[Type]

iRaw[Count]

iBond[LANE]

Any response packet would be verified by the tool

Bob – how does iWrite iApply converted to DOT10 scan.

Josh – in BSDL registers are associated with scan channel. Tool should know where those registers are in the chip.

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CJ – different in DOT 10 is in the iApply packets are generated for channels that are active and data that is being created in the scan packet.

Bob – apply is a scan apply.

CJ – 1149.1 iWrite is always doing a frame. No data sent to DUT. Sent when you do the iApply. That causes the data to be transmitted

In 1149.10 that iApply is the generation of the scan packet

Bob – so depending on how we have this interleaved we would either do 3 or 12 shifts.

Josh – and a tool would know how that is structured.

CJ – deliberate attribute in the draft called a scan channel association. Tells us what scan channel has what numeric association. Tells the tool how to generate the packet underneath the iApply. Might need to fill in some of that information.

Dharma – do we need an iCLOCK command? To tell the number of clocks we have

CJ – there is already an iClock command in PDL.

Dharma – so these are addition commands over DOT1?

CJ – correct.

Josh makes motion:

Editor to create a first draft of incorporating these additional PDL commands to Clause 9. Subject to further WG approval

Craig seconds.

Yes

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

No

Abstain

Adam L
Dwayne B

Passes 9 yes 0 no 2 abstain

Editor will go and develop text to go along with these new commands for review of the working group.

CJ – Need an easy way for the Tester to know how to get packets into chip.

CJ – planning that the HSTAP description is sufficient unless anyone is finding holes in it.

Ismed – chip to chip at the board, they don't have to follow this. They can use functional mode?

CJ – would not have to follow this electrically but would have to do higher level DOT10 protocol.

Bob – in system there is still a lot of clocking requirements to get DOT10 packets across.

CJ – lot of stuff that needs to be done to make it work.

Bob – right need to match data rates. Lots to get scan packets to work in a system.

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CJ – agreed.

CJ – Example 7.7.3 needs some refinement.

Scan Channel Association tells us the number of the scan channel.

Bob – would be good to go through all setup when we go over the ATPG example. A full example.

Jon – not clear on what the bounds of what ATPG sees and performs design rule checks on. ATPG is going to check clock connectivity, understand data pipelining into compression. Exactly what the edge of the packet encoder and what ATPG sees in model and understands.

Dwayne – Interface needs to be defined so rule checking for retargeting knows if it is ok.

Bob – Motion to adjourn

Ismed –seconded.

Call for New Business

No New Business

Motion to adjourn:

Seconded:

Meeting adjourned: 12:05pm EST

Next Meeting:

October 5th, 2015 11:00am

Motion Summary

1 motion made

Editor to create a first draft of incorporating these additional PDL commands to Clause 9. Subject to further WG approval

9 Yes / 0 No / 2 Abstain

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~~

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

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

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Access code: 194 196 960