

Date – 6/1/2015

Attendees: CJ Clark, Adam Ley, Bill Tuthill, Brian Turmelle, Craig Stephan, Dharma Konda, Gobinathan Athimolom, Josh Ferry, Jon Colburn, Mike Ricchetti, Tapan J Chakraborty,

Absent with Excuse: Bob Gottlieb, Frans de Jong, Marc Hutner,

Not present for $\frac{3}{4}$ of meeting:

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, Ismed Hartanto, John Braden, Dwayne Burek, Gurgen Harutyunyan, Steve Sunter,

Agenda:

- 1) Patent Slide
- 2) We've had several weeks now to review V58. I have not read of any problem or mistake introduced by the vote to format on 32-bits. Before we get into discussion for new changes (see below), it would appear appropriate that I entertain a motion, if made, "to accept the changes to draft v58 which incorporate 32-bit formatting". Based on that vote, we can then gauge how to proceed.
- 3) Review of Draft V59
 - a. I've added an example of 64b/66b encoding to a SCAN packet
- 4) New Business
 - a. Craig brought up in the last meeting separating out the channel-selects to avoid repeated transmission of the same data. Vectors for test will apply to the same scan-channels over and over in some cases. Even sending a SCAN to more than one channel where scan lengths are different will require two SCAN packets if you want to synchronize UPDATE. This will require making changes to a number of figures which were just updated to support 32-bit formatting.
- 5) Adjourn

Meeting Called to order at 11:08 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.

Discussion on incorporating 32-bit formatting

No discussion

Chair asks if there is any objection do draft v58

IEEE 1149.10 High Speed JTAG Working Group Minutes

Motion by Josh to accept changes made in V58 of the draft relating to 32 bit formatting subject to future editorial changes.

Seconded by Craig

Vote

Yes

Bill T.	Dharma K.	Jon C.
Brian T.	Gobi A.	Mike R
Craig S.	Josh F.	Tapan C

No

Abstain

Adam L

9 yes. 0 No 1 Abstain

Motion passes

Version 59 of the draft

Updated example for the 64B/66B encoding

Reviewed table 6-6 to show control characters

Reviewed table 6-7 to demonstrate different packets.

No comments on new section on 64/66 encoding

New Business

Continued from last meeting.

Craig's proposal to add new message for channel select to reduce overhead on large data scans.

Don't need to send the scan group when sending scan packets

Would need to send channel packets to update the channel

Mike – prefer this motion after some thought.

Motion

Craig moves to add a Ch-Select command packet 0x7 with a 2-byte SCAN_GROUP, a 2-byte #Ch-Select, and Channel-Select fields, and modify the existing SCAN command packet 0x5 to remove the SCAN_GROUP, #Ch-Select, and Channel-Select fields.

Seconded by Bill

Tapan – got rid of scan group and channel select.

Get wrong scan packet. Do you need to go back and reconfigure everything from the beginning?

CJ – if you have a single scan doesn't apply correctly you can't rescan correctly, even today. If one vector fails you can't just rescan that bad vector. You need to go back to

IEEE 1149.10 High Speed JTAG Working Group Minutes

vector 1. Same thing with this. You would reapply setup packet and then reapply scan packets.

Tapan – debug is a big thing. Would like bigger id field

CJ – would like to vote on current motion and then can make motion to make id field bigger

No further discussion.

Question called.

Vote

Yes

Bill T.	Dharma K.	Jon C.
Brian T.	Gobi A.	Mike R
Craig S.	Josh F.	Tapan C

No

Abstain

Adam L

9 Yes 0 no 1 Abstain

Motion passes

How many scan channels is practical

Tapan – 4000 is totally impractical. Today's chips use compressor/decompressors.

CJ – without compression how many channels would you have?

Tapan – if the chip is that big you would use compressor/decompressor.

Mike – routing just local to the IP block. Not to common point like PEDDA.

CJ – could have multiple PEDDAs. One for each compactor/decompressor? Or is that cumbersome

Tapan – boils down to how much over head in area.

CJ – if it is in lieu of decompressor it is not much more

Tapan – without decompression/compression use PEDDAs all around?

CJ – no rule to prevent you from having multiple PEDDAs in a chip.

Tapan – would have compressor/decompressor pairs for each core.

You could come up with a group of cores for a single PEDDA. And geographically they could be in similar areas.

Motion to adjourn: Brian

Seconded: Bill

Meeting adjourned: 12:03 pm EST

Next Meeting:

June 8th, 2015 11:00am

Motion Summary

2 motions made

- 1) **Accept changes made in V58 of the draft relating to 32 bit formatting subject to future editorial changes.**
 - a. **Passed**
 - b. **9 Yes 0 no 1 Abstain**
- 2) **add a Ch-Select command packet 0x7 with a 2-byte SCAN_GROUP, a 2-byte #Ch-Select, and Channel-Select fields, and modify the existing SCAN command packet 0x5 to remove the SCAN_GROUP, #Ch-Select, and Channel-Select fields.**
 - a. **Passed**
 - b. **9 Yes 0 no 1 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***~~

~~***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/>

IEEE 1149.10 High Speed JTAG Working Group Minutes

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