Date – 11/25/2013
Attendees: CJ Clark, Adam Ley, Bill Tuthill, Brian Turmelle, Bob Gottlieb, Craig Stephan, Dwayne Burek, Frans de Jong, Dharma Konda, Gurgen Harutyunyan Ismed Hartanto, John Colburn, Kevin Gorman, Marc Hutner, Tapan J Chakraborty, Zahi Abuhanmdeh,

Absent with Excuse: Teresa McLaurin, Steve Sunter,
No Present for ¾ of meeting: Philippe Lebourg,

Missing: Kent Ng, Tom Waayers, Bill Huott, Saman Adham, Jim Wilson, Dave Armstrong, , Gobinathan Athimolom, Josh Ferry, Mike Ricchetti, ,

Agenda:

1) Patent Slides
2) Further discussion on slides
   a. Brainstorming session on communicating scan chain data. If chain/WSP select is one-hot encoded, what’s the most efficient way to send the chain selections when chain count is large?
3) New Business

Meeting Called to order at 11:03 am EST

Minutes:
   Solicited input from anybody who is aware of patents that might read on our standard.
No Response

Review of slides labeled P1149_10_high_speed_jtag_basicsv2.pdf that were sent on the reflector
CJ updated the packet definitions in this version of the slides.
Chain select in scan packet (slide 23) is there a more efficient way to convey this information?
Dwayne – you could have chain select define an interface and add a level of hierarchy (Grouping)
Frans – agrees with a grouping method
Jon- would be more of a selection of a target which the ATE doesn’t need to understand.
CJ – sees a need for when we compile the scan information that there is a way to tell the chip which scan chain needs to deliver the data.
Jon – sees scan chains as internal scan channels and not scan chains.
CJ – likes the term scan channels.
Marc – channel is a super set of scan chains.
   Need terminology defined
Jon – define them as groups for the interface.
Dwayne – might have to have different definitions of channel grouping for different maskings.
Dwayne – will come down to channels (group A, group B, etc..)

Dwayne – similar clock going to groups there is no way to throttle a clock.
Jon – could we qualify the clock by the chain select?
Dwayne – would need a clock by chain.
CJ – Is thinking of terms of 1500 WSP where you can clock the chain as long as C/S/U is not asserted
Dwayne – would want to run the groups concurrently with padding.
Jon - Which subsystems get the clock?
CJ shows the Capture non gated TDR from 1149.1-2013
Jon – can’t put flops with 2 mux’s in the core. Ok on the boundary cells. Designers already do not like to put a single mux on flop.

CJ – would you want to send the data in without packets?
Dwayne - possibly
CJ – packets would allow you daisy chain the scan chains, Also need the packets to route the data
Dwayne – Is there any path to do any prototypes of these ideas?
CJ – Yes. is trying to have some prototyping done.
Dwayne – wonders how complicated it might be to do the deep packet inspection of the packets.
CJ – doesn’t think it will be bad but we will have to see.

CJ – Feels we need the response packets
Scan Packet
CJ – is it required to tell the data words and cycle count?
    Might be hard for the encoder to do it if you want asymmetrical packets.
Philippe – should inform the encode/decode of the structure of target being addressed in terms of width of the input and width of the output.
CJ – yes encoder needs to be aware of the architecture.
Bob – limit it for each packet to a single bit shift. So there would be 1 bit of depth.
Would interleave better.
Dwayne – agrees. It would eliminate some buffering as well.
Dwayne – width of receive data on TX line could be different with asymmetric. If we do 1 bit per output channel per packet than it would be simpler.
Jon – using 32 channels that is more than doubling overhead
Dwayne – right.
CJ – 32 channels might be limiting
Jon – 32 at a time. Still can address it.
Dwayne- would limit the channels to the digital pin access.
CJ – should allow both interfaces to work. Can still do some regular access through the pins.
Motion to adjourn – Marc
Seconded – Dwayne
Meeting adjourned: 12:08 EST
Next Meeting:
December 2nd, 2013 11:00am

Motion Summary
0 motions

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.

NOTES:

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

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