

**Date – 03/31/2014**

**Attendees:** CJ Clark, Adam Ley, Bill Tuthill, Bob Gottlieb, Brian Turmelle, Dave Armstrong, Dharma Konda, Frans de Jong, Gobinathan Athimolom, Ismed Hartanto, Jon Colburn, Josh Ferry, Marc Hutner, Philippe Lebourg, Roger Sowada, Tapan J Chakraborty, Teresa McLaurin,

**Absent with Excuse :,  
Not Present for  $\frac{3}{4}$  of meeting:**

**Missing:** Bill Huott, Carol Pyron, Jim Wilson, Kent Ng, Kevin Gorman, Saman Adham, Tom Waayers, Heiko Ehrenburg, Gurgun Harutyunyan, Zahi Abuhanmdeh, Mike Ricchetti, Steve Sunter, Dwayne Burek, Craig Stephan,

**Agenda:**

- 1) Patent Slide
- 2) Clause 5 Discussion on Draft 8
- 3) [New Business](#)

**Meeting Called to order at 11:05 am EDT**

**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

Clause 5

Frans- Why fix the length of the target ID to 16? Could it be put in BSDL?

CJ – do we need that flexibility?

Frans- don't know. Maybe we will need more in the future?

CJ – don't know what the future is either but 16 would be 64k devices on a chain.

CJ – not sure it needs to be programmable.

Frans – it's fixed but could be variable

CJ – fixed packet size would make it more straightforward

CJ – target wouldn't know where the boundaries of the fields would be if the data size shifted.

Jon – sounds like 16 bits is fine.

Frans- ok as long as we note it is a fixed number. If we can live with that than it's ok.

Rule h) – fixes target id length at 16 bits

Frans – rule g) has open reference to 4.1.2j

CJ – should be clause5 and what was j) on line 125 which is now l).

## IEEE 1149.10 High Speed JTAG Working Group Minutes

Frans – should be optional in clause 4, TRST\* isn't mentioned

CJ – 4 is incorrect. It is referring to figure in clause 5. The reference is completely wrong. Should be 5.1.2

Frans- how does it relate TRST\* to RESET\*

CJ – Reset Packet has a type field. And type field would be 0 for RESET\* and 01 for TRST\*. So this is how to assert.

CJ – there are 2 separate signals TRST\* and RESET\*

CJ – rule g) is refereeing to the packet.

CJ - the rule should also reference the figure.

Frans – this clarifies it.

CJ – similar in rule f) where the time isn't specified.

Frans – when “Enable\_1149.10 interface “this should be signal

Bob – j) missing full operation on how to assign target and config ID

Jon – thought the idea was to

Bob – program devices from first to last.

Jon – if you have a non zero target ID and a config ID

Bob – target command listens

Config command doesn't look to see if it matches. Is where we are assign targets?

CJ - right. The downside is that you are configured and don't have a way to unconfigure unless you do a clear. Could clear out target ID. It's just an enumeration of the interface.

Don't see a reason for renumbering interfaces as part of the test process.

Jon – was thinking of vector retargeting. Have a vector stream and want to reapply that device.

CJ – it is for retargeting. Have 1 set of patterns for 2 devices that are the same. You send the target command to target the device and then apply patterns. And send the target command to target the second device and apply the patterns.

Bob – if clear operation is target specific you can do it.

CJ – so there is a clear character that will clear the interface. Whether or not it clears the ID we need to decide as a group

Bob – a reset will clear all the target IDs.

CJ – a reset packet wouldn't clear Target ID. Just asserting the signal on the right hand side on the PEDDA. Shouldn't change the Target ID because the test programs have RESETs in them. Wouldn't want to go through the enumeration again.

Bob – thought a TAP reset would clear the Target ID. Should have some way to do it other than power cycling.

CJ – that would be in the Clear Control character (0x5C) that is for when something really goes haywire.

Bob – was thinking that we would like the ability so that each pattern is an autonomous unit. Need a starting from Scratch sort of thing (not a power cycle). If TRST is just clearing the right side, then need to think about it some more.

CJ – since resets occur during testing wouldn't want to have to enumerate the interfaces. Would like to enumerate only once. Clear signal is what you are looking for.

CJ – if enumerating interface, is there a testing advantage to be able to renumber those?

Bob – not saying there is an advantage for that. But there is an advantage to starting a pattern and not needing to know what the enumeration is.

CJ – we will probably need to discuss it some more to better understand the issue.  
Frans – slide 17 - After power-up Test? How does it know yes or no? Is this the right position to ask this question?  
CJ – what does the “person” do if they don’t want to test? Go into mission mode.  
Frans – ok. .see what you are saying .  
CJ – so the next one Pre-P1149.10 test. This is where you would do your BERT test or whatever necessary before you start your dot 10 test.  
CJ – a little confusing. Not part of the draft.  
Frans – should break out to show what a chip would do vs a test engineer.  
Also break out how a chip would react.  
Marc- shouldn’t the first box be reset or mission mode. Power up seems sort of restrictive.  
CJ – more than just power up? Power reset?  
Marc – maybe a more general state. Like just Reset.  
CJ – will put SYS RESET so it is clear we are not talking about TLR

**Motion to Adjourn: Bill**

**Seconded: Frans**

**Meeting adjourned: 11:59 EDT**

**Next Meeting:**

April 7<sup>th</sup>, 2014 11:00am

*Motion Summary*

*0 motions made*

*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.*~~

NOTES:

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

## IEEE 1149.10 High Speed JTAG Working Group Minutes

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