

Date – 07/Oct/2011

Minutes of the IEEE-1149.1 Working Group Friday meeting

Attendees:

Bill Bruce
Brian Turmelle
Carol Pyron
CJ Clark
Craig Stephan
Dave Dubberke
Dharma Konda
Francisco Russi
Ken Parker
Roland Latvala
John Braden
John Seibold
Heiko Ehrenberg
Peter Elias
Carl Barnhart
Adam Ley
Sankaran Menon

Meeting called to order at 8:30 am MST (AZ)

Current Draft: P1149 1 Draft 20111001.pdf

Agenda/Overview:

SAMPLE Relaxation Discussions

Minutes:

Today we had another lively debate on SAMPLE and possible relaxation of the requirements on a per pin basis. Highlights below:

Bill Bruce – What does it mean to be compliant to SAMPLE:

1. Meet TCK rate and meet Setup and Hold times
2. Connected properly from the IO
3. No effect on system operation

The idea that you need to relax SAMPLE doesn't seem necessary if you follow the above rules. To make the claim that you don't capture something meaningful when you have met these requirements doesn't violate the Std.

Carl – I need to document that I cannot capture during SAMPLE when the design doesn't support it. Designers chose not to hook it up.

Carol – Energy requirements dictate blocks be shut down.
Carol – Sometimes the extra load affects mission operation
Bill – If a block is powered down you can only bypass it
Carol – How does SAMPLE work in that domain?
Carl – Are we going to provide guidance for SAMPLE operation during normal mission operation, or do we want to make SAMPLE optional?
Carol – We could have rules when SAMPLE can be relaxed.
Adam – If we for example have a Serdes and Giga transfers/sec, we are looking for data toggles. It provides extra information for bring up.
CJ – We had this same discussion a year ago. It's never been synchronous data. Just looking for toggling.
Ken – Does X mean it doesn't work or is not hooked up? 0/1 or not connected
Carol – 0/1/X
Bill – X = unknown
Adam – What can the user expect? Can he sample the state of the pin. X means forget about getting any information at the boundary cell.
CJ – In a user defined boundary cell it could sample X under certain conditions
Ken – Are we going to change the legality table to make more things legal?
CJ – Yes
John S. – I'm in favor of per pin SAMPLE exceptions. But not in favor of user defined packages cells. Expand the current boundary cell descriptions.
CJ – BC_11
Bill – BC_11 which samples X
Adam – I'm not in favor of per pin permissions. If we can provide a static 0 or 1 that is better than X.
Bill – Is the 'carve out' the exceptions that only some pins are candidates for exceptions?
CJ – Yes
CJ – Today the Std says 'ALL' pins shall sample.
Adam – Please don't put me in a situation that an X is in the field
CJ – Do we make a rule allowing per pin exceptions, or document non-compliance?
Carl – I'm against making SAMPLE optional.
Adam – No manufacturers claim compliance today. That said any non-compliance should be documented in the DESIGN_WARNING. It's used by most tools. Long lists of pins will give you a black eye.
Ken – DESIGN_WARNINGS are not machine readable.
Adam – Use of SAMPLE is seldom a machine driven process.
Carol – The interpretation of the data would be helped.
CJ – Can the group come to a decision? Straw poll: Are we going to allow per pin sample relaxation? Or describe pins which do not comply?

How many people would allow exceptions in the rules of the draft for SAMPLE only?
Strawman Vote#1 – 7 no, 6 yes, 3 abstain

How many people are in favor of defining a machine readable way to document pins that do not comply during SAMPLE?
Strawman Vote#2 – 1 no, 11 yes, 4 abstain

Carl – I'll go off and draft something?

CJ – Should we vote on the method?

Ken – Email thread

Carl – The right 2 columns of the legality tables will be removed. This takes us back to 2001 version

Roland – Can we have Carol/Carl draw up the 3 alternatives?

CJ – Yes, for Tues we can vote up or down

CJ – Let's make use of the email reflector

Carl – I second that

Carol – I agree

Meeting adjourned: 10:00am MST (AZ)

Action Items:

- Carol and Carl to present the 3 proposed methods for defining 'a machine readable format for identifying per pin exceptions for SAMPLE to the group on Monday for vote to pick one of the three methods on Tues.

Next Friday Meeting:

- Next week Friday Oct 14, 2011