IBIS Macromodel Task Group

Meeting date: 01 September 2015

Members (asterisk for those attending):
ANSYS: * Dan Dvorscak
                                 Curtis Clark
Avago (LSI)   Xingdong Dai
                               * Bob Miller
Cadence Design Systems: * Ambrish Varma
                                 Brad Brim
                                 Kumar Keshavan
                                 Ken Willis
eASIC   * David Banas
                                 Marc Kowalski
Ericsson: Anders Ekholm
IBM   Steve Parker
Intel: Michael Mirmak
Keysight Technologies: * Fangyi Rao
                               * Radek Biernacki
                                 Nicholas Tzou
Maxim Integrated Products: Hassan Rafat
Mentor Graphics: John Angulo
                               * Arpad Muranyi
Micron Technology: Randy Wolff
                                 Justin Butterfield
QLogic Corp.   James Zhou
                                 Andy Joy
SiSoft: * Walter Katz
                               * Todd Westerhoff
                                 Mike LaBonte
Synopsys   Rita Horner
Teraspeed Consulting Group: Scott McMorrow
Teraspeed Labs: * Bob Ross
TI: Alfred Chong

(Note: Agilent has changed to Keysight)

The meeting was led by Arpad Muranyi.

Opens:

- None

Call for patent disclosure:

- None

Review of ARs:

- None

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Review of Meeting Minutes:

- Minutes of the 8/25/15 meeting were approved.

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New Discussion:


Backchannel BIRD:
- Ambrish reported that there was no update.


[C Comp Corner] ambiguities of interpretation:
-  Walter: There are two phrases in the spec that appear conflict with
   one another, in terms of whether [C Comp Corner] overrides other
   C_Comp definitions or not. Walter provided a syntax example and
   enumerated the different ways an EDA tool could interpret it.
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[Model] C_comp?
C_comp_pullup   2.0p 1.0p 3.0p
[C Comp Corner]
C_comp_pulldown 4.0p 8.0p 2.0p

There are the following possible expectations:

1. Capacitor to A_puref 1.0pF
2. Capacitor to A_puref 3.0pF
3. Capacitor to A_puref 3.0pF|1.0pF   (Note treat C_comp_pullup as a range and try both extremes)
4. Capacitor to A_pdref 8.0pF
5. Capacitor to A_pdref 8.0pF   Plus   Capacitor to A_puref with the values in expectations 1., 2. or 3.

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-  Radek: Phrase "any other C_comp representations" is not clear.

-  Arpad: Relationship between C_comp and C_comp_*** subparameters is
   pretty well defined in the second phrase, I don't have a problem with
   that.

-  Bob: [C Comp Corner] and [Model] C_comp parameters were intended to be
   mutually exclusive. An EDA tool should use one or the other, not both.

-  Walter: …so the question is, what should the model maker expect the
   EDA tool to do? According to Bob's statement, the EDA tool should use
   #4.

-  Bob: Correct, unless the EDA tool doesn't support [C Comp Corner], in
   which case the model maker should expect the EDA tool to do what it
   normally does with C_comp.

-  Walter: Legacy C_comp handling does not explicitly specify which value
   of C_comp should be used for which corner.

-  Radek: A model must have at least one value under C_comp, independent
   of any C_comp subparameters. On other words, the parser should
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generate an error if *only* C_comp subparameters are defined and
C_comp parameters are not defined at all.

- Arpad: The central question is "Are the C_comp subparameters additive, or overrides?"
- Bob: They are overrides. And some form of model C_comp is always required.
- Ambrish: The spec says [C Comp Corner]s are overrides and C_comp is still needed.
- Arpad: It's becoming clear what the rules were intended to be … now the question is how clear the spec actually is.
- Radek: Can we handle this in the IBIS editorial group?
- Arpad: Any changes by the editorial group now would have at least a 3 week impact on the next version of IBIS. Should we do that or write a BIRD instead and pick it up in the next IBIS version?
- Radek: The second option (IBIS BIRD) is better.
- Walter: Can we make a motion to pass IBIS 6.1 with a specific editorial change, instead?
- Bob: That seems workable.
- Walter: So the editorial change would something to the effect of:

Make following change
- "If [C Comp Corner] is present, its value or values override any other C_comp* representations."
to
- "If [C Comp Corner] is present, its value or values override all [Model] C_comp, C_comp_* representations, regardless of whether the sub-parameter sets are the same or not.."

- Bob: This change is substantial enough that we're close to the point where a BIRD would be required.
- Walter: I think we have a clear statement of the intent, whether it makes it into IBIS 6.1 or not.
- Arpad: Can we make a recommendation to the editorial committee and let them decide whether or not to include it in IBIS 6.1?
- Radek: Does editorial suggestion clarify the case where C_comp values are not defined and C_comp subparameters are?
- Arpad: I think so, because if we clarify that sub-parameters are intended as overrides, then, if the EDA tool does not support sub-parameters, there is nothing to override.
- Radek: OK

- Walter motioned to (1) agree to above wording as to "the intent of IBIS 6.0", and (2) recommend to editorial committee for inclusion into IBIS 6.1.
- No one objected. The motion was approved by acclamation.

- Todd motioned to adjourn. Arpad seconded. No one opposed.

Meeting ended at 3:52PM.

Next meeting: 01 September 2015 12:00pm PT

IBIS Interconnect SPICE Wish List:

1) Simulator directives