IEEE 1149.4 Mixed-Signal Test Bus Working Group Meeting Minutes

for
March 28th , 2007

8:00 AM – 9:00 AM PDT

Meeting Agenda:

Time	Topic	Responsibility

8:00-9:00 AM	1. Review the meeting minutes for January 23rd, 2007
	
	2. Update/Review on ABSDL for:
	
	   a. Straw Dog example.
	   b. STA400 chip.
	
	3. Update/Review on action items for ABSDL documentation draft.
	   a. Example of ABSDL for section 10.4.5.
	   b. Revise the following attribute MST_PORT_GROUPING rules:
	     i. 10.4.4.5.2d.
	     ii. 10.4.4.5.2e.
	     iii. 10.4.4.5.2g.
	   c. Provide a note for differential output in attribute MST_PORT_GROUPING.
	   d. Provide ABSDL introduction at the top level of section 10.4.
	   e. Insert differential output and bidirectional types in page 7, line 24.
	   f. Insert differential output and bidirectional types in page 8, line 9.
	
	4. Other issues.
		Adam Ley
		Bambang
		
		Bambang
		Adam Ley
		
		Adam Ley
		
		Bambang
		
		Adam Cron
		
		Adam Cron

9:00 AM	Meeting adjourned	Bambang

Meeting Attendees:

Name	Company
Adam Cron	Synopsys
Adam Ley	Asset-Intertech
Heiko Ehrenberg	Goepel Electronics LLC
Ken Parker	Agilent Technologies
Zafar Quadri	Solectron Corp.
Bambang Suparjo	Mentor Graphics

1.   Review the Meeting Minutes for January 23rd, 2007

The meeting minutes for January 23rd, 2007 have been approved, suggested by
Adam Cron and seconded by Zafar Quadri.

2.   Update/Review on ABSDL for:

a.   Revise Straw Dog example.

The status is still pending.

b.   ABSDL for STA400 chip.

The status is still pending.

3.   Update/Review on action items for ABSDL documentation draft.

a.   Example of ABSDL for section 10.4.5. (Bambang)

The example has been reviewed and will be updated based on the following
corrections and suggestion:

i.   Heiko and Ken identified three syntax errors in attribute
BOUNDARY_REGISTER:

- "0 (BC_1,   *, internal,   0), " & should be replaced by
"0 (BC_1,   *, internal,   0)); since this is the last line defined in the
attribute.

- For cell 16, output_3 should be replaced by output3 as shown below:
"16 (BC_7,   D3, output3,   x, 17, 0, Z), " &

- For cell 21, output_2 should be replaced by output2 as shown below:
"21 (BC_1,   D2, output2,   x), " &

ii. Adam suggested the cell order in attribute BOUNDARY_REGISTER to
follow the normal practice in writing a BSDL file i.e. starting with the highest
cell order number.

b.   Revise the following attribute MST_PORT_GROUPING rules (Adam Ley):

i.   10.4.4.5.2d.

Draft 1.9:
In the case of the <MST twin group type> equal to Differential_Digital, each member
of a <MST differential capture cell list> shall refer to a DBM cell.

Revised:

If an <MST twin group type> equals **DIFFERENTIAL_DIGITAL**, each member of all <MST differential capture cell list> elements within the corresponding <MST twin group entry> shall refer to a DBM cell.

Comment:

Need to expand what "refer to a DBM cell" means syntactically.

ii. 10.4.4.5.2e.

Draft 1.9:

In the case of the <MST twin group type> equal to Differential_Analog, each member of a <MST differential capture cell list> shall refer to an ABM cell.

Revised:

If an <MST twin group type> equals **DIFFERENTIAL_ANALOG**, each member of all <MST differential capture cell list> elements within the corresponding <MST twin group entry> shall refer to an ABM cell.

Comment:
Need to expand what "refer to an ABM cell" means syntactically.

iii. 10.4.4.5.2g.

Draft 1.9:
The function of DBMs associated with the single-ended capture point of differential pins shall perform an observe-only function.

Revised:
All DBM cells referenced in all <MST differential capture cell list> elements shall perform an observe-only function.

Comment:
Need to expand what "perform an observe-only function" means syntactically.

Both **DIFFERENTIAL_DIGITAL** and **DIFFERENTIAL_ANALOG** are using Arial font, shown in bold uppercase letters, to make them consistent with the twin group type in 1149.1 attribute PORT_GROUPING. In this case, the MST twin group type syntax in 10.4.4.5.1 needs to be updated to:

<MST twin group type> ::= **DIFFERENTIAL_DIGITAL** |
DIFFERENTIAL_ANALOG

While reviewing the above rules, the following rules have also been revised:

iv. 10.4.4.5.2f.

Draft 1.9:
In the case of the <MST twin group type> equal to Differential_Analog, one of the capture cells listed in the <MST differential capture cell list> shall refer to the BUS1 bit of the respective ABM cell (See 7.4.1.1 h) and i)).

Revised:
If an <MST twin group type> equals **DIFFERENTIAL_ANALOG**, exactly one of the members of all <MST differential capture cell list> elements within the containing <MST twin group entry> shall refer to the BUS1 bit of the respective ABM cell (See 7.4.1.1 h) and i)).

Comment:
Need to expand what "refer to the BUS1 bit of the respective ABM cell (See 7.4.1.1 h) and i))" means syntactically.

v. 10.4.4.5.2b.

Draft 1.9:
Devices with differential ports shall have exactly one <MST diff statement>.

Revised:
Devices with differential ports shall have exactly one <MST differential statement>.

Comment:
For "differential" in <MST differential statement>, shouldn't this read as "grouped port" for symmetry with dot1 (would also affect <MST ~ group table string> and <MST ~ group table>; might also affect <MST ~ capture cell list> and <MST ~ capture cell?

c. Provide a note for differential output in attribute MST_PORT_GROUPING (Adam Ley).

The note was not able to be provided during the meeting. The note is related to no capture cell for differential output pins and hence the pins will not be defined in attribute MST_PORT_GROUPING. Adam Ley will prepare this note to be discussed in the next meeting.

d. Provide ABSDL introduction at the top level of section 10.4 (Bambang).

This action item is still pending. Bambang will prepare the information to be discussed in the next meeting.

e. Insert differential output and bidirectional types in page 7, line 24 (Adam Cron).

The statements below will be added in the draft:
```
D4, D4N: out bit;
```

4

```
D5, D5N: inout bit;
```

  f. Insert differential output and bidirectional types in page 8, line 9 (Adam Cron).

    The statements below will be added in the draft:
```
"Differential_Voltage ((D4, D4N)),"&
"Differential_Voltage ((D5, D5N))";
```

4. Other Issues

  a. The next meeting will be on April 24th, 2007 at 7:30 AM PDT.

  b. Bambang will contact Michael Kipness, the 1149.4 staff liaison to request the standard document in Microsoft Word format.

5. The meeting adjourned at 9:00 AM PDT.