

IBIS Open Forum Minutes

Meeting Date: **August 20, 2010**

Meeting Location: **Teleconference**

VOTING MEMBERS AND 2010 PARTICIPANTS

Agilent	Radek Biernacki*, Ming Yan, Fangyi Rao, Gilbert Berger, Amolak Badeasa, Jose Pino, Junaid Khan
AMD	Nam Nguyen
Ansys (Ansoft Corporation)	Danil Kirsanov
Apple Computer	(Matt Herndon)
Applied Simulation Technology	(Fred Balistreri)
ARM	(Nirav Patel)
Cadence Design Systems	Terry Jernberg*, Wenliang Dai, Ambrish Varma
Cisco Systems	Syed Huq*, Mike LaBonte*, Tony Penaloza, Huyen Pham, Bill Chen, Ravindra Gali, Zhiping Yang
Ericsson	Anders Ekholm, Pete Tomaszewski
Freescale	Jon Burnett, Om Mandhana
Green Streak Programs	Lynne Green
Hitachi ULSI Systems	Yutaka Uematsu
Huawei Technologies	(Jinjun Li)
IBM	Adge Hawes, Greg Edlund*
Infineon Technologies AG	Christian Sporrer
Intel Corporation	Michael Mirmak*, Myoung (Joon) Choi, Vishram Pandit, Richard Mellitz
IO Methodology	Lance Wang
LSI	Brian Burdick*
Mentor Graphics	Arpad Muranyi*, Neil Fernandes, Zhen Mu
Micron Technology	Randy Wolff*
Nokia Siemens Networks GmbH	Eckhard Lenski*
Samtec	(Corey Kimble)
Signal Integrity Software	Walter Katz, Mike Steinberger, Todd Westerhoff*, Barry Katz
Sigrity	Brad Brim, Kumar Keshavan, Srdjan Djordjevic, Ben Franklin
Synopsys	Ted Mido, Paul Lo, Geoffrey Ying, Frank Lee
Teraspeed Consulting Group	Bob Ross*, Tom Dagostino
Texas Instruments	Bonnie Baker
Toshiba	Yoshihiro Hamaji
Xilinx	Mike Jenkins
ZTE	(Huang Min)
Zuken	Michael Schaefer, Ralf Bruening

OTHER PARTICIPANTS IN 2010

Actel	(Prabhu Mohan)
AET, Inc.	Mikio Kiyono
Altera	John Oh, Hui Fu
Avago	Razi Kaw
Bosch Car Multimedia	Rene Steinberg, Patric Kessler
Broadcom	Mohammad Ali
Curtiss-Wright	John Phillips
ECL, Inc.	Tom Iddings
eSilicon	Hanza Rahmai
Exar Corp.	Helen Nguyen
ICT-Lanto	Steven Wong*
JEITA	Atsushi Ishikawa
Leading Edge	Pietro Vergine
Magna Design Automation	Anand Ramalingam
Mindspeed	Bobby Altaf
National Semiconductor	Hsinho Wu
NetLogic Microsystems	Eric Hsu, Edward Wu, Antonio Orphanou, Halil Civit
NXP Semiconductors	Gerald Krasemann
Politecnico di Torino	Igor Stievano, Stefano Grivet-Talocia, Piero Triverio, Flavio Canavero
Renesas Technology	Takuji Komeda
Siemens, AG.	Manfred Maurer, Michael Flint
Simberian	Yuriy Shlepnev
Span Systems Corporation	Vidya (Viddy) Amirapu
Summit Computer Systems	Bob Davis
Tabula	David Banas
TechAmerica	(Chris Denham)
Vitesse Semiconductor	Bob McDonough
Independent	AbdulRahman (Abbey) Rafiq, Robert Badal

In the list above, attendees at the meeting are indicated by *. Principal members or other active members who have not attended are in parentheses. Participants who no longer are in the organization are in square brackets.

UPCOMING MEETINGS

The bridge numbers for future IBIS teleconferences are as follows:

Date	Meeting Number	Meeting Password
September 10, 2010	200-424-632	IBIS

For teleconference dial-in information, use the password at the following website:

<https://cisco.webex.com/cisco/j.php?J=200424632>

All teleconference meetings are 8:00 AM to 9:55 AM US Pacific Time. Meeting agendas are typically distributed seven days before each Open Forum. Minutes are typically distributed within seven days of the corresponding meeting. When calling into the meeting, follow the prompts to enter the meeting ID. For new, local international dial-in numbers, please reference the bridge numbers provided by Cisco Systems at the following link:

http://www.cisco.com/web/about/doing_business/conferencing/index.html

NOTE: "AR" = Action Required.

INTRODUCTIONS AND MEETING QUORUM

No new participants.

CALL FOR PATENTS

Michael Mirmak called for any patents or pending patents related to the IBIS 3.2, IBIS 4.2, IBIS 5.0, Touchstone 2.0 or ICM 1.1 specifications. No patents were declared.

REVIEW OF MINUTES AND ARS

Randy Wolff called for comments regarding the minutes of the July 30, 2010 IBIS Open Forum teleconference. The minutes were approved without changes.

MEMBERSHIP UPDATE AND TREASURER'S REPORT

Michael Mirmak reported that we still have 31 members. He mentioned that any new logo updates are appreciated.

Bob Ross reported that he is reconciling a new financial report from TechAmerica. Income from three members is missing. We sold another parser, so the report should show five for 2010, although it only shows income for two. We should be in a very positive cash situation this year.

WEB PAGE UPDATES

Syed Huq reported that FAQ, roster and poster pages were updated to reflect the latest membership. The events page was updated to reflect new summit information.

MAILING LIST ADMINISTRATION

Mike LaBonte reported that he has had concerns with emails bouncing. Many rejections are not just for ibis and ibis-users lists but also on ibis-info and ibis-requests lists. He is keeping track of which lists are causing problems. He sent another query on interest in a paid smtp server. There have been no responses yet. There was a request for a new email list: ibis-summit@eda.org. He put in a request, but the administrator hasn't added it yet. Bob Ross asked if we have considered using freelists for IBIS purposes. Mike's only concern is that we

wouldn't have eda.org addresses. Michael Mirmak added that attachments aren't saved in the archives on freelists. Mike will look into freelists and report at the next teleconference.

MODEL LIBRARY UPDATE

No report.

MISCELLANY/ANNOUNCEMENTS

None.

OPENS FOR NEW ISSUES

None.

INTERNATIONAL/EXTERNAL ACTIVITIES

- DASC

Michael Mirmak noted that a new set of meetings is scheduled with the next one August 26. The DASC file and e-mail archive may be found at:

<http://www.dasc.org/>

- P1735 Encryption

No update. The IEEE Study Group on Encryption web reflector archives are found at:

<http://www.eda-stds.org/ip-encrypt/hm/>

-VHDL-AMS meeting

Arpad Muranyi reported that he did not attend the last meeting. This subcommittee is working on table-driven models.

-Conferences

Michael Mirmak noted that the IEEE Conference on Electrical Performance of Electronic Packaging and Systems (EPEPS) is October 24-27, 2010 in Austin, Texas. There are usually topics of interest to IBIS. More information can be found at the following link:

<http://epeps.ece.illinois.edu/>

-Press Update

Bob Ross noted a recent article that mentions IBIS and IBIS-AMI. It is "Keeping a Lid on Interference" in the July 15, 2010 issue of EDN, pages 26-32. The article is at:

<http://tinyurl.com/2ftjztg>

Michael noted that he has seen announcements of webinars from several companies on multi-gigabit serial differential signaling. Many mention IBIS-AMI.

TECHAMERICA STATUS

Michael Mirmak reported that TechAmerica's manuals of procedures and operations have been updated. These are now available free. There is a link on the IBIS Open Forum info page for the new manual.

There has also been an offer of training on TechAmerica's new online standards system. We are trying to find more details.

IEC APPROVAL ACTIVITIES

Randy Wolff reported that he contacted Stan Krolikoski, the new DASC chair. Stan responded that he is not directly involved in the IEC process, but he would forward Randy's email to several people including Victor Berman.

SUMMIT STATUS

-China Summit Planning

The meeting is at the Four Points by Sheraton hotel in Shenzhen on Tuesday, November 9. Bob noted that the first announcement went out. Lance Wang and Bob will handle the signups. There will be vendor tables. The deadline to submit presentations is October 12 to allow time to print the booklets. Another announcement may be sent out next week.

-Taiwan Summit Planning

The meeting will be held Friday, November 12 at the Sherwood Hotel in Taipei near Intel. Sigrity will assist with the registration. Bob reported that the first announcement will be sent out soon. There is some discussion with the board on how to handle presentation copies. We may decide to have a booklet, but that will require an earlier presentation deadline. The room can handle more than 100 people. Vendor tables will be arranged. Someone locally will need to handle making copies of the presentations.

-Japan Summit Planning

Bob reported this will be Monday, November 15 at the JEITA headquarters near Tokyo Station. Sponsors should be arranged within the next few weeks. No lunch is planned.

Steven Wong asked if there was a maximum limit to attendees at any of the summit meetings. Michael Mirmak responded that we do not close the rooms or set any arbitrary limits. Bob noted that we do require signups, although these are not rigorously enforced. We usually plan for all the signed-up attendees as well as a few extras. We are comfortable in the 100-150 range in Shenzhen and at least 100 in Taipei.

Sponsorship opportunities for all upcoming IBIS summits are available, with sponsors receiving free mentions in the minutes, agenda, and other announcements. Contact the IBIS Board for further details.

IBIS QUALITY TASK GROUP

Mike LaBonte reported that they are continuing to study the IEEE Feature Selective Validation specification. They are trying to understand the process and what the reports mean. They are working with Professor Orlandi who developed the FSV1D software. The group is starting with the IBIS Accuracy handbook as a skeleton for the IBIS Correlation document. They need to find someone to write the bulk of the document. The group is meeting every two weeks, and the next meeting is August 31.

The Quality Task Group checklist and other documentation can be found at:

http://www.eda.org/ibis/quality_wip/

IBIS MODEL REVIEW TASK GROUP

No update.

ADVANCED TECHNOLOGY MODELING TASK GROUP

Arpad Muranyi reported that IBIS-ISS discussions have moved to the Interconnect task group meeting. The ATM group is continuing with AMI related discussions. They are approaching the end of flow diagram related discussions. They are reviewing a BIRD from Arpad on terminology cleanup such as defining float and integer.

Task group material can be found at:

http://www.eda-stds.org/ibis/macromodel_wip/

INTERCONNECT TASK GROUP

Michael Mirmak reported that the group is reviewing the IBIS-ISS document every other week. They are also talking about Model Connection Protocol (MCP) on alternate weeks. Steven Wong asked about the IBIS-AMI versus Stateye labeling. Michael noted that IBIS-AMI is a labeling for a portion of the IBIS 5.0 specification. There is an IBIS parser. Stateye is freely developed software not associated with IBIS.

Task group material can be found at:

<http://www.eda.org/ibis/adhoc/interconnect/>

NEW ISSUES

None.

TSIRD2.1 – BINARY FORMAT SUPPORT

Michael Mirmak received a comment to add a pair of blank lines so some of the text in the example is easier to read. Bob Ross suggested that this is just a minor editing task that doesn't

require official changes to the TSIRD. A vote was called for inclusion of TSIRD2.1 in the next release of the Touchstone specification, Touchstone 2.1.

The vote was approved with the following vote tally:

Agilent – yes

Cadence – yes

Cisco – yes

IBM – yes

Intel – yes

LSI – yes

Mentor – yes

Micron – yes

Nokia Siemens Networks – yes

SiSoft – yes

Teraspeed - yes

Bob noted that it needs to be discussed how to integrate the TSIRD into the new specification. He will also plan to discuss with the tschk2 parser developer plans to update the parser code.

TSCHK2 BUG STATUS

No BUGs to report. Michael Mirmak noted that the source code is available for purchase.

IBISCHK5 BUG STATUS

Michael Mirmak noted there are no new BUGs to report. All current BUGs have been classified.

IBISCHK5 UPDATE DEVELOPMENT

Bob Ross reported that nine BUGs are being fixed and two others are being looked into for possible fixes. He had suggestions for fixing BUG104. It will require a BIRD, so it is suggested to simply remove the error from the parser at this time. BUG112 will be changed to “Not a BUG” status based on further analysis. The developer found that three of the error messages were wrong in the error code/message mapping table, and he is fixing this. A BUG report will be filed to address this error.

PULLUP/PULLDOWN RESISTOR DETECTION PROPOSAL

Greg Edlund filed BIRD113. Greg noted that Tom Dagostino had commented that it was unclear if the information was being used by a simulator to change any electrical characteristics of the [Model] during simulation. Greg plans to update the language in the BIRD to clarify that this is informational only for the purpose of checking. Michael Mirmak suggested adding that this information is independent of buffer type too, as this could be found in a Terminator model. He added that all the parameters under [Model Spec] do not change the buffer behavior but are only informational for simulators to decide how to process simulation results. This new information does not even affect simulation results. Greg noted that he was asked if any of this information could be found in the model I-V curves already. Greg said that this was not easy to

find.

Michael Mirmak commented that chip designs have strapping that changes the state of the chip during certain events or when certain pin conditions exist. Is there any information needed to define a state condition for the weak pullup/pulldown? For instance, if the weak pullup/pulldown is present at all times, you should see the information in the I-V tables. If it turns off at some point, it might not be seen in the I-V tables. Mike LaBonte felt you should have a [Model Selector] if this is the case. Mike noted that when he does see weak pullup/pulldown data present in the I-V tables, he usually questions the data and consults datasheets. The BIRD113 information does help confirm that the I-V table data is correct. Greg added that he plans to request that his vendors add this new information into their models. He noted that he wants to know whether a weak pulldown/pullup exists even if it is programmable or static. When programmable, this will require more work to classify it. Michael added that it might be useful debug information to know if the weak pullup/pulldown noted in [Model Spec] should be seen in the I-V tables. Greg doesn't think it is that important to flag the weak pullup/pulldown as static or dynamic. Bob Ross agreed with this statement.

Michael noted that there are line wrap issues in the file. Also, any changes to the IBIS specification as noted in the BIRD should be noted with the "[*]" syntax. Greg will update this in a BIRD113.1 revision.

Arpad Muranyi asked if the parser would be expected to flag mismatches between the resistor value and the I-V data. Bob suggested the parser should not check this. Bob also noted that "K" in 10K in the BIRD should be lower case. Arpad also preferred that the parameter names have "r" and "v" in upper-case. Bob also suggested that language be added to specify what parameters are required such as if a Weak_pull_up_r resistor is specified, a corresponding Weak_pull_up_V voltage be specified. Randy Wolff added that he preferred the parameter names be Weak_pullup* and Weak_pulldown* (no "_") to be consistent with the rest of IBIS. Bob suggested that language be added to note that the actual I-V data associated with this information would normally apply to the [POWER Clamp] and [GND Clamp] tables.

Mike LaBonte noted that the example in the BIRD shows both a weak pullup and a weak pulldown, but he doesn't think this would ever happen. Michael noted that there wouldn't be a reason to have two resistor and voltage options when only one voltage and one resistor would ever be present. Bob wondered if you could document any termination with these parameters such as a strong Vtt termination in DDR. Greg thought this should only document weak terminations. Bob noted that you would need to define a cutoff of what would be considered weak. Greg clarified that this information is meant to screen those nets that don't use high-speed type, strong terminations. Greg will update the BIRD for the next teleconference.

IBIS-ISS – STATUS

Michael Mirmak reported that the document is at Revision 0.5. Comments are welcome.

The work in progress document can be found in the following directory:

http://www.eda.org/ibis/ibis-iss_wip/

NEW ISSUES

Bob noted that there is an issue with the BIRD directory on the website where there are no line feed/carriage return characters. Michael Mirmak will fix this page.

NEXT MEETING

The next IBIS Open Forum teleconference will be held September 10, 2010 from 8:00 to 10:00 AM US Pacific Standard Time.

NOTES

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This meeting was conducted in accordance with the GEIA Legal Guides and GEIA Manual of Organization and Procedure.

The following e-mail addresses are used:

majordomo@eda.org

In the body, for the IBIS Open Forum Reflector:
subscribe ibis <your e-mail address>

In the body, for the IBIS Users' Group Reflector:
subscribe ibis-users <your e-mail address>

Help and other commands:
help

ibis-request@eda.org

To join, change, or drop from either or both:
IBIS Open Forum Reflector (ibis@eda.org)
IBIS Users' Group Reflector (ibis-users@eda.org)
State your request.

ibis-info@eda.org

To obtain general information about IBIS, to ask specific questions for individual response, and to inquire about joining the EIA-IBIS Open Forum as a full Member.

ibis@eda.org

To send a message to the general IBIS Open Forum Reflector. This is used mostly for IBIS Standardization business and future IBIS technical enhancements. Job posting information is not permitted.

ibis-users@eda.org

To send a message to the IBIS Users' Group Reflector. This is used mostly for IBIS clarification, current modeling issues, and general user concerns. Job posting information is not permitted.

ibis-bug@eda.org

To report ibischk parser BUGs as well as tschk2 parser BUGs. The BUG Report Form for ibischk resides along with reported BUGs at:

<http://www.eda.org/ibis/bugs/ibischk/>
<http://www.eda.org/ibis/bugs/ibischk/bugform.txt>

The BUG Report Form for tschk2 resides along with reported BUGs at:

http://www.eda.org/ibis/tschk_bugs/
http://www.eda.org/ibis/tschk_bugs/bugform.txt

icm-bug@eda.org

To report icmchk1 parser BUGs. The BUG Report Form resides along with reported BUGs at:

http://www.eda.org/ibis/icm_bugs/
http://www.eda.org/ibis/icm_bugs/icm_bugform.txt

To report s2ibis, s2ibis2 and s2iplt bugs, use the Bug Report Forms which reside at:

<http://www.eda.org/ibis/bugs/s2ibis/bugs2i.txt>
<http://www.eda.org/ibis/bugs/s2ibis2/bugs2i2.txt>
<http://www.eda.org/ibis/bugs/s2iplt/bugsplt.txt>

Information on IBIS technical contents, IBIS participants and actual IBIS models are available on the IBIS Home page:

<http://www.eigroup.org/ibis/ibis.htm>

Check the IBIS file directory on eda.org for more information on previous discussions and results:

<http://www.eda.org/ibis/directory.html>

Other trademarks, brands and names are the property of their respective owners.

IBIS CURRENT MEMBER VOTING STATUS

I/O Buffer Information Specification Committee (IBIS)

Organization	Interest Category	Standards Ballot Voting Status	June 15, 2010	July 9, 2010	July 30, 2010	August 20, 2010
Advanced Micro Devices	Producer	Active	-	X	X	-
Agilent Technologies	User	Active	X	X	X	X
Ansys	User	Inactive	-	-	-	-
Apple Computer	User	Inactive	-	-	-	-
Applied Simulation Technology	User	Inactive	-	-	-	-
ARM	Producer	Inactive	-	-	-	-
Cadence Design Systems	User	Active	X	-	X	X
Cisco Systems	User	Active	X	X	X	X
Ericsson	Producer	Inactive	X	X	-	-
Freescale	Producer	Inactive	-	-	-	-
Green Streak Programs	General Interest	Inactive	-	-	-	-
Huawei Technologies	Producer	Inactive	-	-	-	-
Hitachi ULSI Systems	Producer	Inactive	-	-	-	-
IBM	Producer	Active	X	X	X	X
Infineon Technologies AG	Producer	Inactive	-	-	-	-
Intel Corp.	Producer	Active	X	X	X	X
IO Methodology	User	Active	X	X	X	-
LSI	Producer	Active	-	X	X	X
Mentor Graphics	User	Active	X	X	X	X
Micron Technology	Producer	Active	-	X	-	X
Nokia Siemens Networks	Producer	Active	-	X	X	X
Samtec	Producer	Inactive	-	-	-	-
Signal Integrity Software	User	Active	X	X	X	X
Sigrity	User	Inactive	-	-	-	-
Synopsys	User	Inactive	X	-	-	-
Teraspeed Consulting	General Interest	Active	X	X	X	X
Texas Instruments	Producer	Inactive	-	-	-	-
Toshiba	Producer	Inactive	X	-	-	-
Xilinx	Producer	Inactive	-	-	-	-
ZTE	User	Inactive	-	-	-	-
Zuken	User	Inactive	-	-	-	-

CRITERIA FOR MEMBER IN GOOD STANDING:

- MUST ATTEND TWO CONSECUTIVE MEETINGS TO ESTABLISH VOTING MEMBERSHIP
- MEMBERSHIP DUES CURRENT
- MUST NOT MISS TWO CONSECUTIVE MEETINGS

INTEREST CATEGORIES ASSOCIATED WITH TECHAMERICA BALLOT VOTING ARE:

- USERS - MEMBERS THAT UTILIZE ELECTRONIC EQUIPMENT TO PROVIDE SERVICES TO AN END USER.
- PRODUCERS - MEMBERS THAT SUPPLY ELECTRONIC EQUIPMENT.
- GENERAL INTEREST - MEMBERS ARE NEITHER PRODUCERS NOR USERS. THIS CATEGORY INCLUDES, BUT IS NOT LIMITED TO, GOVERNMENT, REGULATORY AGENCIES (STATE AND FEDERAL), RESEARCHERS, OTHER ORGANIZATIONS AND ASSOCIATIONS, AND/OR CONSUMERS.