EIA IBIS Open Forum

Meeting Date: **August 29, 2008**

VOTING MEMBERS AND 2008 PARTICIPANTS

Actel	(Prabhu Mohan)
Agilent	Sanjeev Gupta, Radek Biernacki, Amolak Badesha Fangyi Rao, [Ian Dodd], Yutao Hu, Vuk Borich Nobutaka Arai, Ludwig Eichingner
AMD	Nam Nguyen*
Ansoft Corporation	Steve Pytel, Ricardo Teliuteuesh, Dan Dvorscak
Apple Computer	(Bill Cornelius)
Applied Simulation Technology	(Fred Balistreri)
ARM	(Nirav Patel)
Cadence Design Systems	Terry Jernberg*, Hemant Shah, Ambrish Varma [C. Kumar], Brad Griffin, Zhen Mu
Cisco Systems	Syed Huq, Mike LaBonte*, AbdulRahman (Abbey) Rafiq Huyen Pham, Emily Yao, Susmita Mutsuddy John Fisher, Paul Ruddy, Jun Li, Jianmin Zhang Luis Boluna, Kelvin Qiu, Jane Lim, Ilyoung Park Rick Brooks, Chris Padilla, Ehsan Kabir
Ericsson	Anders Ekholm*
Freescale	Jon Burnett
Green Streak Programs	Lynne Green
Hitachi ULSI Systems	Kazuyoshi Shoji
Huawei Technologies	Tao Guan*, Xiaoqing Dong
IBM	Adge Hawes*
Infineon Technologies AG	Christian Sporrer
Intel Corporation	Michael Mirmak*, Rich Mellitz, Wei-hsing Huang Vishram Pandit
LSI	[Frank Gasparik], Brian Burdick*, [Kim Helliwell]
Marvell Semiconductor	(Itzik Peleg)
Mentor Graphics	Arpad Muranyi*, John Angulo
Micron Technology	Randy Wolff
Nokia Siemens Networks GmbH	Eckhard Lenski*, Klaus Huebner, Katja Koller
Samtec	Jim Nadolny, Justin McCalister
Signal Integrity Software	Mike Steinberger, Walter Katz, Todd Westerhoff* Doug Burns, Mike Mayer, Barry Katz
Sigrity	Sam Chitwood, Brad Brim, Ben Franklin Kristopher Stytte, Raymond Chen
Synopsys	Ted Mido
Teraspeed Consulting Group	Bob Ross*, Tom Dagostino, Al Neves
Texas Instruments	Richard Ward, Pavani Jella*
Toshiba	Yasumasa Kondo, Noriyasu Yoshikawa
Xilinx	David Banas*, Ajay Shah, Suzanne Yiu

	Mustansir Fanaswalla
Zuken	Michael Schaeder, Ralf Bruening
ZTE	(Ying Xiong)

OTHER PARTICIPANTS IN 2008

Aeroflex Metelics	David Nguyen
Aica Kogyo	Akihiro Tanaka
Altera	Ravindra Gali, Jing Wu, John Oh, Hui Fu
Avago Technologies	Minh Quach, Sari Tocco
Bayside Design	Elliot Nahas, Kevin Roselle
Celestica	Ihsan Erdin
ECL Advantage	Thomas Iddings
EFM	Ekkehard Miersch
Elma Bustronic	Michael Munroe
Exar	Helen Nguyen
Flextronics	Hasnain Syed
GEIA	(Chris Denham)
Golden Bridge Networks	Saman Sadigh
ICT Solutions	Steven Wong
Interface Technologies	Dan Waterloo
IO Methodology	Lance Wang, Zhi (Benny) Yan, Li (Kathy) Chen
JEITA	Atsushi Ishikawa
Magma DA	Anand Ramalingam
NEC	Takeshi Watanabe
NetLogic Microsystems	Eric Hsu
North Carolina State University	Paul Franzon
Nokia	Ali Arsian
Nuova Systems	Zhiping Yang
Prentice Hall	Bernard Goodwin
Physware	Marc Kowalski
Politecnio di Torino	Igor Stievano
Qimonda AG	Md Morshed Alam Heial, Suhas Jawale
Siemens AG	Manfred Maurer, Annika Woehner
Simberian	Yuriy Shlepnev
SimLab Software GmbH	Heiko Grubrich
Tektronix	Steve Corey
TietoEnator GmbH	Heinz-Hartmut Ibowski
Tyco Electronics	Chad Morgan
Vertical Circuits	Mark Egbers
Xsigo Systems	Robert Bada
Independent	Guy de Burgh, Ardy Forouhar, Dave Galloi Kazuhiko Kusunoki

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	Telephone Number	Meeting ID
September 19, 2008	1-866-432-9903	1-2119-1267

All 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, press 1 to attend the meeting, then 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 members.

CALL FOR PATENTS

Michael Mirmak called for any patents or pending patents related to the IBIS Version 3.2, 4.0, 4.1, 4.2, or ICM 1.1 specifications. No patents were declared.

MEMBERSHIP UPDATE AND TREASURER'S REPORT

Michael Mirmak reported that two additional membership renewals had been confirmed since the last meeting, making a combined membership of 31. Bob Ross confirmed that revenue targets have been met for the year, and that any surplus was likely to be applied to an IBIS 5.0 parser contract.

[After the meeting, Zuken’s membership was confirmed, bringing the total membership to 32. This is reflected in the attendee list above and the voting status listing below.]

REVIEW OF MINUTES AND ARS

Michael Mirmak called for comments regarding the minutes of the August 8, 2008 IBIS Open Forum teleconference. The minutes were approved without changes.

WEB PAGE UPDATES

Syed Huq reported that changes have been made to the membership poster to reflect membership renewals and updated logos. More updates are coming.

MAILING LIST ADMINISTRATION

Bob Ross reported that everything is working normally.

MODEL LIBRARY UPDATE

No update.

PRESS UPDATE

Bob Ross noted that a recent Cadence Design Systems product announcement mentioned IBIS-AMI support.

MISCELLANY/ANNOUNCEMENTS

No update.

OPENS FOR NEW ISSUES

Several opens were discussed at the end of the meeting (see below).

INTERNATIONAL/EXTERNAL PROGRESS

- DASC

Michael Mirmak noted that meeting of the DASC had been recently held, but that no information relevant to IBIS had been discussed.

The DASC file and e-mail archive may be found at:

http://www.dasc.org/

- P1735 Encryption

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

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

IEC APPROVAL ACTIVITIES

Michael Mirmak reported that he and Randy Wolff met with Chris Denham of the GEIA, and that the full IBIS board met with Victor Berman of DASC and TC93. Victor will be checking into the process necessary to move IBIS 4.2 through the IEC approval process, but that no action on IBIS 4.2 was likely at the Singapore IEC meeting on September 9. Chris Denham will also be confirming the IEC approval process and will confer with Victor. Chris suggested that IEC rules may enable the IEC to change the specification from the submitted version before approval, without the permission of the submitting group.

SUMMIT STATUS

- Asian Summits Planning

Michael Mirmak noted that the Japan summit will be held at JEITA headquarters November 14, 2008. Two official announcements have been sent out for both Asian Summits. Bob Ross or Kazuyoshi Shoji should be contacted if planning to attend the Japan summit. The China summit contacts are Bob Ross and Lance Wang. The China summit will be held November 11, 2008 in Shanghai, at the Shanghai Mart Convention Center.

- DesignCon Planning

Michael Mirmak mentioned that the DesignCon event is scheduled for February 2-5, 2009 at the Santa Clara Convention Center in Santa Clara, California. Thursday, February 5, 2009 is tentatively scheduled for the summit. Michael repeated an earlier call to members to provide updated IBIS booth logo plaques, as the current plaques may be damaged or out-of-date. Mike LaBonte suggested that a photograph of the booth from the 2007 DesignCon show floor be sent out, so that members can assess the condition of their plaques.

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 the Task Group has completed all I-V table discussions, and will move to V-T table discussions next. In response to a question from Michael Mirmak, Mike noted that the team will complete and release the 1.1 quality document before analyzing new IBIS features. At present, the checklists contain very few version-specific items. Bob Ross added that no multilingual checks have been discussed yet.

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

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

IBIS MODEL REVIEW TASK GROUP

No update.

ADVANCED TECHNOLOGY MODELING TASK GROUP

Arpad Muranyi reported that group discussion is continuing on SPICE-like interconnect format proposals, including Walter Katz's IBIS-SPICE. The team is now discussing requesting that a subset of a popular, proprietary SPICE be integrated into the eventual specification, along with the relevant user manual contents, with the permission of the vendor. This would be considered a donation for the purposes of standardizing common SPICE functions, and would not limit either vendors or the development of the new specification thereafter.

With SPICE variants being widely used in industry, Arpad encouraged participation in this effort from IBIS members and attendees.

Task group material can be found at:

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

AD HOC TASK GROUPS (INTERCONNECT)

Michael Mirmak reported that the group is meeting weekly and is reviewing Touchstone 2.0 draft language. Mixed-mode support is essentially complete in the current draft, with only minor syntax and editorial fixes needed. The group will turn to the grouping of ports for interconnect purposes next, and then prepare the resulting document for an approval vote.

Task group material can be found at:

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

NEW ISSUES

None.

BIRD111: EXTENDED USAGE OF EXTERNAL SERIES COMPONENTS IN EBDS

Bob Ross stated that no new progress has been made on BIRD111, but that he is working with Michael Schaeder on improvements. Differential support continues to be the most pressing concern with the current BIRD.

IBIS 5.0 DRAFT REVIEW AND VOTE

Michel Mirmak issued a call for comments regarding the draft document. No comments were received. Bob Ross moved, with Mike LaBonte seconding, that the IBIS 5.0 specification be approved by a vote of the membership.

A vote was held, with the following results:

AMD	Yes
Cadence Design Systems	Yes
Cisco Systems	Yes
Ericsson	Yes
Huawei Technologies	Yes
IBM	Yes
Intel Corporation	Yes
LSI	Yes
Mentor Graphics	Yes

Micron Technology	Yes*
Nokia Siemens Networks GmbH	Yes
Signal Integrity Software	Yes
Teraspeed Consulting Group	Yes
Texas Instruments	Yes

* vote via e-mail received before the meeting

[Xilinx joined the meeting after the vote was completed]

The text of the specification is available at the following link:

http://www.eda.org/pub/ibis/ver5.0/

Arpad Muranyi suggested that hyperlinks in the final PDF* version of the document be restored, to make document viewing easier. Bob and Michael will work offline to ensure this.

Michael noted that a press release draft had been prepared and shared the draft with the participants. Todd Westerhoff volunteered to provide editorial comments offline. The final release will be reviewed by the IBIS board before presentation to the GEIA for distribution.

The attendees discussed IBISCHK5 parser development. A bid packet, including a parser specification or statement of work, will be prepared, with open bidding as was done for IBIS 4.1. Arpad inquired whether the developer of the previous revision was available. Michael responded that he was not. Bob Ross suggested the formation of a small team to review the bid materials and decide on the winner. This team may consist of some or all of the members of the IBIS board. He volunteered to act as technical coordinator for the selected developer, to answer specification interpretation questions.

IBISCHK4 BUG STATUS

BUG99 and BUG101 are still open and will be fixed in the next revision of the parser.

The BUG report list is available at the link below:

http://www.eda.org/ibis/bugs/ibischk/

ICMCHK1 BUG STATUS

No update.

NEW ISSUES

Arpad Muranyi raised the issue of min/max conditions for clamps as relates to corners. This topic had been briefly mentioned in the previous teleconference. A reflector question recently highlighted confusion about how to pair diode corner information with driver corner. Diodes typically use a bipolar process, where most drivers use a CMOS process for their buffer transistors. This means that the temperature conditions for slow, weak diodes are the same as for strong, fast driver transistors. Further, SPICE models of diodes are often inaccurate. As a result, IBIS models may not include a true “worst-case” collection of total buffer behaviors for either the max or min corners.

Michael Mirmak noted that this should not be different than C_comp association by numerical size rather than corner, and that tools could enable users to associate the correct data with the correct conditions. Arpad responded that this was not necessarily a “mix-and-match” problem, but it was more of a data extraction conditions problem. Mike LaBonte noted that clamp subtraction may cause the resulting [Pullup] and [Pulldown] tables in an I/O model to be incorrect. Bob Ross proposed that the specification and associated documentation simply note that all data given for a particular “corner” (typ, min, max) simply be consistent with the conditions for that corner, with the exception of C_comp. The problem will be discussed in future meetings.

Michael Mirmak noted that a draft BIRD is being discussed to add enhanced buffer capacitance descriptions to IBIS. Some proposals have circulated privately, though none are ready for submission as BIRDs for approval. The proposals involve adding R-C circuits in parallel to the existing C_comp, using voltage-based tables of R and C. Individual tables would be used for the R and C values of each circuit branch. This enhancement would help model voltage- and frequency-dependent buffer impedances, for I/O, input-only and output-only buffer types at least. The problem has been addressed in IBIS summit presentations in 2002 and 2004.

Bob Ross raised the issue of the current IBIS logo. As discussed in a previous meeting, the current logo contains references to GEIA and EIA, neither of which may be appropriate as the IBIS parent organizations have changed. ITAA may have the capacity to generate an IBIS logo for official use. At present, the word “IBIS” in italic serif font, in blue and black, is used for DesignCon and other events. Mike LaBonte suggested that a new logo should involve square brackets, such as “[IBIS]”.

NEXT MEETING

The next IBIS Open Forum teleconference will be held September 19, 2008 from 8:00 AM to 10:00 AM US Pacific Time.

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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. The BUG Report Form resides along with reported BUGs at:

http://www.eda.org/ibis/bugs/ibischk/
http://www.eda.org/ibis/bugs/ibischk/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

All eda.org documents can be accessed using a mirror:

http://www.ibis-information.org

Note that the "/ibis" text should be removed from directory names when this URL mirror is used.

GEIA STANDARDS BALLOT VOTING STATUS

I/O Buffer Information Specification Committee (IBIS)

Organization	Interest Category	Standards Ballot Voting Status	June 27, 2008	July 18, 2008	August 8, 2008	August 29, 2008
Actel	Producer	Inactive				
Advanced Micro Devices	Producer	Active			√	√
Agilent Technologies	User	Inactive				
Ansoft	User	Inactive				
Apple Computer	User	Inactive				
Applied Simulation Technology	User	Inactive				
ARM	Producer	Inactive				
Cadence Design Systems	User	Active	√		√	√
Cisco Systems	User	Active	√	√	√	√
Ericsson	Producer	Inactive	√			√
Freescale	Producer	Inactive				
Green Streak Programs	General Interest	Inactive				
Hitachi ULSI Systems	Producer	Inactive				
Huawei	User	Active	√		√	√
IBM	Producer	Active	√		√	√
Infineon Technologies AG	Producer	Inactive				
Intel Corp.	Producer	Active	√	√	√	√
LSI	Producer	Active	√	√	√	√
Marvell Semiconductor	Producer	Inactive				
Mentor Graphics	User	Active	√	√	√	√
Micron Technology	Producer	Active		√	√	
Nokia Siemens Networks	Producer	Active	√		√	√
Samtec	Producer	Inactive				
Signal Integrity Software	User	Active	√	√		√
Sigrity	User	Active	√	√	√	√
Synopsys	User	Inactive				
Teraspeed Consulting	General Interest	Active	√	√	√	√
Texas Instruments	Producer	Active			√	√
Toshiba	Producer	Inactive				
Xilinx	Producer	Active		√		√
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 GEIA 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.