IBIS Open Forum Minutes

Meeting Date: **February 20, 2009**

VOTING MEMBERS AND 2009 PARTICIPANTS

Actel	(Prabhu Mohan)
Agilent Technologies	Yutao Hu, Fangyi Rao
AMD	Nam Nguyen*
Ansoft Corporation	Steve Pytel*
Apple Computer	(Matt Herndon)
Applied Simulation Technology	(Fred Balistreri)
ARM	V. Muniswara Reddy*
Cadence Design Systems	Terry Jernberg, Ambrish Varma
Cisco Systems	Luis Boluna, Tram Bui, Bill Chen, Syed Huq*, Mike LaBonte, Pedo Miran Huyen Pham, AbdulRahman (Abbey) Rafiq, Ashwin Vasudevan, Zhiping Yang
Ericsson	Anders Ekholm*
Freescale	Jon Burnett, Om Mandhama
Green Streak Programs	Lynne Green*
Hitachi ULSI Systems	(Kazuyoshi Shoji)
Huawei Technologies	Xiaoqing Dong, Chunxing Huang
IBM	Adge Hawes*
Infineon Technologies AG	(Christian Sporrer)
Intel Corporation	Michael Mirmak*, Jon Powell, Sirisha Prayaga
LSI	Brian Burdick*
Marvell Semiconductor	(Itzik Peleg)
Mentor Graphics	Weston Beal, Vladimir Dmitriev-Zdorov, Zhen Mu, Arpad Muranyi*
Micron Technology	Randy Wolff*
Nokia Siemens Networks GmbH	Eckhard Lenski*
Samtec	(Corey Kimble)
Signal Integrity Software	Barry Katz, Walter Katz*, Todd Westerhoff*
Sigrity	Sam Chitwood
Synopsys	Ted Mido
Teraspeed Consulting Group	Bob Ross*
Texas Instruments	Pavani Jella*
Toshiba (I.S. Corporation)	(Yasumasa Kondo)
Xilinx	David Banas
ZTE	(Ying Xiong)
Zuken	(Michael Schaeder)

OTHER PARTICIPANTS IN 2009

AET	Mikio Kiyono
Bayside Design	Stephen Coe, Elliot Nahas

Circuit Spectrum	Zaven Tashjian
CST	Antonio Ciccomancini, Martin Schauem
Curtiss-Wright Embedded Computing	J. Phillips
EM Integrity	Guy de Burgh
Exar	Helen Nguyen
GEIA	(Chris Denham)
IO Methodology	Li (Kathy) Chen, Lance Wang*, Zhi (Benny) Yan
Juniper	Kevin Ko
Leventhal Design & Communications	Roy Leventhal
Mindspeed Technologies	Bobby Alkay
NetLogic Microsystems	Eric Hsu
Sanmina SCI	Vladimir Drivanenko
Sedona International	Joe Socha
Signal Consulting Group	Timothy Coyle, Nicole Mitchell
Simberian	Yuriy Shlepnev
Xsigo Systems	Robert Badel
Independent	Ian Dodd

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
March 13, 2009	1-866-432-9903	121217376
April 23, 2009	-- IBIS Summit at DATE; no teleconference --	

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 noted that members should let the board know if they have not received a notification for renewals for 2009. We have not received any end of the year status on financials.

REVIEW OF MINUTES AND ARS

Michael Mirmak called for comments regarding the minutes of the January 30, 2009 IBIS Open Forum teleconference. The minutes were approved without changes.

WEB PAGE UPDATES

Syed Huq reported that the Infineon logo was updated on the poster page, Ansoft contact information was updated on the roster page, and the events page was updated to remove the DesignCon summit.

MAILING LIST ADMINISTRATION

Bob Ross reported that everything is working normally.

MODEL LIBRARY UPDATE

Lance Wang reported that he has not updated the library yet, but he will check in 1-2 weeks for broken links.

PRESS UPDATE

Bob Ross mentioned three mentions of IBIS in the press.

A recently published book includes a section on basic IBIS. The book is “Signal Integrity and Radiated Emission of High-Speed Digital Systems” by Spartaco Caniggia and Francescaromana Maradei, 2008, Wiley. The book can be found at:

http://www.amazon.com/s/ref=nb_ss_gw?url=search-alias%3Dstripbooks&field-keywords=%22signal+integrity+and+radiated+emission%22&x=19&y=18

An article covering a DesignCon discussion panel mentions that SerDes AMI models are not widely available yet a year after addition to the IBIS specification. The article is "Signal Integrity Issues Dog High-Speed Design" by Rick Merritt, EE Times, February 3, 2009. The article can be found at:

http://eetimes.eu/design/showArticle.jhtml?articleID=213000730&printable=true

An article covers choices of simulation models including IBIS and IBIS AMI. The article is "Simulation: The Need for Speed" by Tim Coyle in Printed Circuit Design & Fab, February 2009. The article can be found at:

http://pcdandf.com/cms/cms/content/view/5805/95/

MISCELLANY/ANNOUNCEMENTS

No update.

OPENS FOR NEW ISSUES

Michael Mirmak noted that a Touchstone 2.0 introduction was added to the agenda.

INTERNATIONAL/EXTERNAL PROGRESS

- DASC

Michael Mirmak reported that there was a meeting on February 19, 2008. There were no issues discussed of relevance to IBIS.

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/

- GEIA/ITAA Issues

Bob Ross noted that the organization resulting from the ITAA/AeA merger is officially called TechAmerica. Email addresses have changed to name@techamerica.org. The GEIA name will be going away. We are not sure how this will affect ANSI accreditation. The new website is:

http://www.techamerica.org

Two upcoming conferences include Signal Integrity and Power Integrity topics. Information on these is below.

The 13th IEEE Workshop on Signals Propagation on Interconnects is May 12-15, 2009 in Strasbourg, France.

http://spi.univ-brest.fr

The 7th International Workshop on Electromagnetic Compatibility of Integrated Circuits (EMC COMPO 2009) is November 17-20, 2009 in Toulouse, France. The call for papers deadline is May 30, 2009.

http://www.emccompo.org

IEC APPROVAL ACTIVITIES

No update.

SUMMIT STATUS

- DesignCon Review

The DesignCon summit was held Thursday, February 5, 2009. Michael Mirmak reported that over 50 people from over 30 organizations were in attendance. There was a good technical program with good discussions. All the presentation material has been posted. He thanked the co-sponsors Cisco and IEC and also the presenters.

Bob Ross noted that there was a problem with DesignCon moving some technical content into the Thursday morning time slot. We will probably still schedule the summit for Thursday next year, but we may want to look at other days.

-DATE Planning

Ralf Bruening of Zuken has been organizing the event. It is scheduled for Thursday morning, April 23, 2009. Agilent, Sigrity and Zuken are the current sponsors. Several paper presentations are already planned.

-DAC Planning

DAC is scheduled for July 26-31, 2009 in San Francisco. We plan to have representation from GEIA at the event to explain the new parent organization. The IBIS summit is scheduled for Tuesday, July 28. Sponsorship is welcome. Elections are also held at this meeting.

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

Bob Ross reported that the group is working on Section 5 of the IBIS Quality Specification.

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

Lynne Green reported that the group reviewed 8 models from 7 companies last year. Many of the models did not pass the parser on the first check. There has been one model to review in 2009 so far.

ADVANCED TECHNOLOGY MODELING TASK GROUP

Arpad Muranyi reported that the group is working on IBIS Interconnect Spice details. They started discussing details of elements used in the specification such as transmission lines, S-parameters and RLC elements.

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 has finished a draft of the Touchstone 2.0 document, and it will be reviewed in this meeting.

Task group material can be found at:

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

NEW ISSUES

None.

BIRD111.2: EXTENDED USAGE OF EXTERNAL SERIES COMPONENTS IN EBDS

Bob Ross reported that the change to the BIRD deleted two paragraphs describing handling of differential pin pairs. Michael Mirmak asked should this BIRD be approved, would the parser have to change. Bob replied that it would not have to change, but if the BIRD is not approved, the parser may have to be updated. Michael noted that series components are listed, but could you put in series capacitors as well as inductors and resistors? Bob said that it is pathologically possible. Lance Wang felt that it should be described that any series element could be included. Bob will issue a BIRD111.3 to add in this clarification language.

TOUCHSTONE 2.0 DISCUSSION

Michael Mirmak re-introduced the specification and gave a presentation found at:

http://www.eda.org/ibis/docs/touchstone/touchstone2-summary-update-09.pdf

He summarized that Touchstone 2.0 is a revision to Touchstone and is fully backwards compatible. It adds language to remove the limit on the maximum number of ports, better organize network data, support mixed-mode data, support network data describing both power planes and signal lines through per-port reference impedances, support upper- and lower-half matrices, and remove normalization for non-S-parameter data sets. Michael described the changes that have been made since the 2007 review. He noted that support for data compression formats, complex reference impedances, and frequency-dependent reference impedances are not included. He showed a reference table highlighting the differences between the two versions. It is planned to have a review and comment period through the end of April. A call for vote will occur once all major issues are closed, followed by GEIA balloting after the IBIS vote.

Walter Katz noted that he liked how the document was written in a text and graphics format. He also plans to look into a sparse S-parameter format for data on large, many port structures. For interconnect files, one would like to know for near-end/far-end, which ports are differential and have physical pin information on the ports. He plans to submit improvements for this. Michael described that there is controversy about whether Touchstone is a data-only specification or should include usage data as well. Bob Ross noted that he is not in favor of making any of this usage data required. There is a placeholder in Touchstone 2.0 for this usage data, but it is not defined yet.

The draft Touchstone 2.0 document is found at:

http://www.eda.org/ibis/docs/touchstone/touchstone2_forum_review_draft_a.pdf

IBISCHK5 PARSER STATUS

Michael Mirmak reported that bidding has opened and closes on March 1. There have been requests for the bid packet. The bids will be reviewed after March 1, 2009. The total cost of the parser is not known yet.

IBISCHK4 BUG STATUS

Michael Mirmak reported that two BUGs are open right now and there is a potential one related to BIRD106. There are no plans to fix these in the near term, as they are not included in the IBISCHK5 parser development.

Lance Wang noted that he is looking into a potential BUG related to PECL models and checking between I-V and V-t curves.

The BUG report list is available at the link below:

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

ICMCHK1 BUG STATUS

ICMCHK1 version 1.1.3 has been released, and the executables can be downloaded.

NEW ISSUES

Michael Mirmak noted that the Touchstone 2.0 document followed IEEE document standards and the group used a document editor that allowed graphics. Bob Ross and Walter Katz thought that new documents should all be in non-txt formats. Discussion of updating the IBIS specification to a non-txt format ensued. There is a lot of work to update the IBIS specification.

Arpad Muranyi noted that the existing format is a parse-able style that includes most text after comment characters. Michael also felt that new BIRDs, especially those like AMI that are separate sections could be written in a new format and integrated into the original specification. The original specification could be re-formatted to remove the comment characters and update the graphics over time. Michael plans to make a proposal list on how changes to the document might be made.

NEXT MEETING

The next IBIS Open Forum teleconference will be held March 13, 2009 from 8:00 AM to 10:00 AM US Pacific Standard Time. The next IBIS summit will take place at DATE on April 23, 2009. No teleconference has been arranged for the meeting.

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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

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	January 9, 2009	January 30, 2009	February 5, 2009	February 20, 2009
Actel	Producer	Inactive				
Advanced Micro Devices	Producer	Inactive				√
Agilent Technologies	User	Inactive			√	
Ansoft	User	Inactive				√
Apple Computer	User	Inactive				
Applied Simulation Technology	User	Inactive				
ARM	Producer	Active			√	√
Cadence Design Systems	User	Inactive			√	
Cisco Systems	User	Active	√	√	√	√
Ericsson	Producer	Active			√	√
Freescale	Producer	Inactive			√	
Green Streak Programs	General Interest	Inactive				√
Hitachi ULSI Systems	Producer	Inactive				
Huawei	User	Inactive			√	
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	Inactive	√			√
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.