IBIS Open Forum Minutes

Meeting Date: **March 13, 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, Guan Tao*
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)
ICT Solutions	Steven Wong*
IO Methodology	Li (Kathy) Chen, Lance Wang*, Zhi (Benny) Yan
Juniper	Kevin Ko
Leventhal Design & Communications	Roy Leventhal
Maxim Integrated Products	Ron Olisar*
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
April 3, 2009	1-866-432-9903	121644215
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

Ron Olisar of Maxim Integrated Products introduced himself. He has had discussions with Bob Ross recently and decided to join the IBIS Open Forum teleconference. He works in a product group building drivers for up to 10Gbps channels. He has interest in IBIS AMI for internal use of models and as an easier way to co-model complete channels with customers. He wants to understand how well adopted IBIS AMI will be in the industry. He thinks the signs are positive for AMI. He wants to help support the transition to IBIS AMI by Maxim.

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 we are waiting on our financial update from TechAmerica to close 2008. Michael has gotten notes that some companies have not received renewal notifications. Let the board know if you are having any issues with membership renewal.

REVIEW OF MINUTES AND ARS

Michael Mirmak called for comments regarding the minutes of the February 5, 2009 IBIS Open Forum summit at DesignCon and the February 20, 2009 IBIS Open Forum teleconference. Both sets of minutes were approved without changes.

WEB PAGE UPDATES

No update.

MAILING LIST ADMINISTRATION

Bob Ross reported that everything is working normally.

MODEL LIBRARY UPDATE

Lance Wang reported that he will be reviewing model links before the next meeting and should have an update then.

PRESS UPDATE

Bob Ross mentioned four references to IBIS in the technical literature.

A recently published book includes a section on IBIS basics. The book is “Advanced Signal Integrity for High-Speed Digital Designs” by Stephen Hall and Howard Heck, Wiley and IEEE Press, 2009. The book can be found at:

http://www.wiley.com/WileyCDA/WileyTitle/productCd-0470192356.html

A professional journal article references IBIS work and several other IBIS people. The article is “Improving Behavioral IO Buffer Modeling Based on IBIS,” by A. Varma, M. Steer, and P. Franzon, IEEE Trans. Advanced Packaging, vol. 31, no. 4, Nov. 2008, pp.711-721. The article can be found at:

http://www.ece.ncsu.edu/erl/publications/papers/paulf/2008/paulf_2008_varma.pdf

A professional journal article develops the mathematical theory assuming a square-law FET structure similar to the earlier presentations, references IBIS and VHDL-AMS. The article is "A Modified IBIS Model Aimed at Signal Integrity Analysis of Systems in Package," by P. Pulici, A. Girardi, G.P. Vanalli, R. Izzi, G. Beranrdi, G. Ripamonti, A.G.M. Strollo, IEEE Trans. Circuit Theory, I, Reg. Papers, vol. 55, no. 7, Aug. 2008, pp. 1921-1928.

A professional journal article references IBIS, and Etienne Sicard has been active over several years at IBIS summits. The article is "Modeling the Electromagnetic Emission of a Microcontroller Using a Single Model," by C. Labussiere-Dorgan, S. Bendhia, E. Sicard, J. Tao, H.J. Quaresma, C. Lochot, B. Vrignon, IEEE Trans. Electromagnetic Compatibilities, vol. 50, no. 1, Feb. 2008, pp. 22-34. The article can be found at:

http://www.lattis.univ-toulouse.fr/uploaded/files/publications/revues/TEMC-241-2006-R1.pdf

MISCELLANY/ANNOUNCEMENTS

None.

OPENS FOR NEW ISSUES

None.

INTERNATIONAL/EXTERNAL PROGRESS

- DASC

Michael Mirmak reported that there is a meeting on March 19, 2009. He has not seen the agenda yet.

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/

- TechAmerica/GEIA/ITAA Issues

There have been no updates from TechAmerica yet on any organization changes.

Bob Ross noted that we need to revisit our logo development soon. We will add this to the agenda next time.

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

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

http://spi.univ-brest.fr

The Electrical Performance of Electronic Packaging and Systems (EPEPS 2009) is October 19-21, 2009 at the Embassy Suites in Portland, OR. This is a major meeting for SI people from universities and industry.

http://www.epep.org/

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

Randy Wolff reported that he checked with Chris Denham of TechAmerica to confirm if Touchstone 2.0 standardization would run into any difficulties to the ITAA/AeA merger. Chris said that the PINS document filed with GEIA in December 2007 is still valid and TechAmerica is still accredited by ANSI. Randy mentioned that we may need to look into voting status of members if going forward with TechAmerica standardization of Touchstone 2.0. Bob Ross said that we may want to wait on the ballot process. A parser project may find minor issues, so would be better to wait on balloting through TechAmerica.

SUMMIT STATUS

-DATE Planning

Ralf Bruening of Zuken has been organizing the event. It is scheduled for Thursday morning, April 23, 2009 in Nice, France. 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. The IBIS summit is scheduled for Tuesday, July 28. Sponsorship is welcome. Elections are also held at this meeting. Let the board know if you are interested in an officer position. The first call for papers should go out in mid-May. Mentor Graphics is a co-sponsor of this event.

-Asia Summits Planning

Meetings in China and Japan are tentatively scheduled in the November-December timeframe. Sponsors are welcome.

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 group has completed review of section 6. This section covered checks outside of the normal list (these are more warning items). They are discussing section 7 that covers simulation and lab correlation. Meetings are on Tuesdays at 8:00 AM Pacific time.

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 the group is working on IBIS Interconnect Spice details, discussing each element in the list. The group is also discussing Todd Westerhoff's idea for inclusion of an S-parameter block for analog buffer characteristics in AMI models. There is discussion on how to include this block in IBIS.

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 not met since submitting the Touchstone 2.0 document to the IBIS Open Forum. The group will meet again when needed.

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 “Dealing with Series Elements” paragraph needs updating to include a better description of handling series elements including more than R and L elements. Michael Mirmak asked if the example showing CLK assumes a discrete resistance separate from another IBIS file, like a Spice model. Bob responded that no, these elements must be components in the [Reference Designator Map] that reference IBIS models. Michael asked if the parser needs to check if one pin of a series element is an I/O buffer and the other pin is another I/O buffer. Bob responded that no checking is needed. Verbiage was added in BIRD111.1 to describe this situation, but then it was removed to not open the door to too many complications.

TOUCHSTONE 2.0 REVIEW

Michael Mirmak made the second call for comments on the Touchstone 2.0 document. He listed two comments from an S-parameter expert. Normalization of S-parameters may be implied by the current document language. We should clarify that normalization does not apply for S-parameters in either Touchstone or Touchstone 2.0. The document also implies that the original Touchstone prohibited blank lines. We should clarify that the document explicitly allows blank lines (including leading blank lines) in both versions. Comments from Radek Biernacki make suggestions of clarification language to address normalization. Bob Ross clarified that this meant that S-parameter data of the same network taken with two different reference impedances would be different data, tied to the reference impedance stated. Michael added that the difference between the two data sets would be seen in the magnitude.

Michael and Bob discussed adding language to address the blank line issue.

Michael noted that there was a request for a file name or model name keyword in the file. Michael clarified that multiple ‘models’ would not be described in the same Touchstone file. A file name field might make it easier for a parser to associate the file name with the data. Michael asked for comments from programmers about this. Mike LaBonte did not think this was a useful feature.

A revised document will be reviewed at the next meeting. Bob also noted use of the multiplier character ‘x’, on page 19 for instance, is not necessary. Michael suggested getting guidance from IEEE or other standards groups on this and making changes later.

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 the IBISCHK bid committee has reviewed the bids and decided on a parser developer. The committee will be discussing the parser contract and development schedule after this meeting. Commitments for parser purchases will need to be made before the parser development can officially begin. Details of the contract will be shared at the next meeting.

IBISCHK4 BUG STATUS

Michael Mirmak reported that two BUGs are open right now. There are no plans to fix these in the near term, as they are not included in the IBISCHK5 parser development.

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. All BUGs have been closed at this point.

NEW ISSUES

Ron Olisar asked how the committee members felt about adoption of IBIS AMI in the industry. Arpad Muranyi responded that all major vendors have proposals for support of AMI. Arpad would like to see more models for testing of AMI. Todd Westerhoff noted that many semiconductor vendors are investigating AMI. Companies are interested in knowing how they can trust the models. Todd thinks there are good answers to the questions and thinks progress is happening towards adoption. Ron noted that StatEye is unsupported. Arpad felt that StatEye competes with AMI, and the best model will win. Todd noted that StatEye is written into some standards, and that is one reason why it is used.

Steven Wong noted that he does Spice modeling with passive components. He was interested in knowing if IBIS has any involvement in USB 3.0 development. Michael Mirmak noted that the ATM group is working on Interconnect Spice modeling, and this may be of interest to Steven.

NEXT MEETING

The next IBIS Open Forum teleconference will be held April 3, 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

IBIS CURRENT MEMBER VOTING STATUS

I/O Buffer Information Specification Committee (IBIS)

Organization	Interest Category	Standards Ballot Voting Status	January 30, 2009	February 5, 2009	February 20, 2009	March 13, 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	Inactive	√	√		
Synopsys	User	Inactive		√		
Teraspeed Consulting	General Interest	Active	√	√	√	√
Texas Instruments	Producer	Inactive			√	
Toshiba	Producer	Inactive				
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 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.