EIA IBIS Open Forum Minutes

Meeting Date: **April 4, 2008**

GEIA STANDARDS BALLOT VOTING STATUS
See last page of the minutes for the voting status of all member companies.

VOTING MEMBERS AND 2008 PARTICIPANTS

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
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
IO Methodology	Lance Wang*, Zhi (Benny) Yan, Li (Kathy) Chen
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
Panasonic	(Atsuji Ito)
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
STMicroelectronics	(Anil Kalra)

Synopsys	Ted Mido
Teraspeed Consulting Group	Bob Ross*, Tom Dagostino, Al Neves
Texas Instruments	Richard Ward
Toshiba	(Yasumasa Kondo)
Xilinx	David Banas*, Ajay Shah, Suzanne Yiu
	Mustansir Fanaswalla
ZTE	(Ying Xiong)
Zuken	Michael Schaeder, Ralf Bruening

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
NetLogic Microsystems	Eric Hsu
North Carolina State University	Paul Franzon
Nokia	Ali Arsian
Nuova Systems	Zhiping Yang
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
April 25, 2008	1-866-432-9903	1-2130-1332

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 participants.

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 the GEIA has completed their move to a new office following the merger with ITAA. The website is still up. He is expecting a financial update from GEIA shortly. Renewals are coming in. He reminded members to contact the board if they have any difficulties with renewals.

REVIEW OF MINUTES AND ARS
Michael Mirmak called for comment regarding the minutes of the March 14, 2008 IBIS Open Forum summit at DATE as well as the minutes of the March 14, 2008 IBIS Open Forum teleconference.   Both sets of minutes were approved without changes.

WEB PAGE UPDATES
Syed Huq reported that he tried to update the events page, but email bounces with GEIA are preventing this currently. Bob Ross suggested letting Phyllis Call know, as her email is working.

MAILING LIST ADMINISTRATION
Bob Ross reported that everything is working normally.

MODEL LIBRARY UPDATE
No update.

PRESS UPDATE
No update.

MISCELLANY/ANNOUNCEMENTS
None.

OPENS FOR NEW ISSUES
Bob Ross requested time for a BIRD107 introduction and an ICM discussion.

INTERNATIONAL/EXTERNAL PROGRESS
- DASC
Michael Mirmak noted there has been one meeting lately, but no material relative to this group
was discussed. The DASC website is found at:

        http://www.dasc.org/

- P1735 Encryption
Syed Huq reported that a Project Activation Request (PAR) has been approved and a working
group has been formed. He noted some encryption features are planned where a model
provider can setup various levels of access to different tools for flexibility. The IEEE DASC
Study Group on Encryption web site is found at:

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

- PICMG Interconnect
Michael Mirmak gave a presentation recently to the PCI Industrial Computer Manufacturers
Group (PICMG) on IBIS including the new EMD proposal. The presentation was to give the
group background on IBIS development for use in development of PICMG specifications.

Bob Ross noted that the IEEE Workshop on Signal Propagation on Interconnects (SPI) is in
Avignon, France, May 12-15, 2008. IBIS material is sometimes discussed at this conference.
More information can be found at:

        http://spi.univ-brest.fr

IEC APPROVAL ACTIVITIES

Randy Wolff noted that he attempted to contact John Messina from NIST regarding IEC approval, but he has not received a response yet. Bob Ross suggested that perhaps someone at Mentor can contact Dennis Brophy personally if we are unable to contact John Messina.

SUMMIT STATUS

- DATE Summary

Eckhard Lenski reported that there was very good discussion at the summit. Bob Ross noted that a few participants had a scheduling conflict, so could not attend. Also, the Agilent presentation was cancelled due to travel issues.

- DAC Planning

DAC will be held June 9-13, 2008 in Anaheim, CA. Tuesday, June 10 is scheduled for the summit meeting. The initial call for papers is going out soon. Syed Huq is the main contact for the event. Mentor will be helping with the room arrangements. Elections will be held for officers. Michael Mirmak encouraged members to submit paper ideas.

- Asian Summits Planning

JEITA headquarters in Tokyo is the confirmed location for the Japan summit. The Taiwan summit will most likely be in Taipei if it happens. Bob Ross noted that the China summit planning group is still looking into hotel arrangements in either Shanghai or Shenzhen. The summits will be held in the November-December timeframe.

Sponsorship opportunities for the DAC IBIS summit 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 had a presentation from Guan Tao on model correlation techniques. The group is reviewing more than syntax checks now. Model correlations, static overshoot/undershoot, and a proposal from Anders Ekholm on Golden Waveforms will be discussed in the next meeting. They are also discussing ways to speed up the pace of the group. Meetings are held on Tuesdays at 8:00am 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

Lynne Green reported that no new models have come in. The group sees an average of about one model per month. Mike LaBonte asked if the group receives any feedback from people after they have had their models reviewed. Lynne said that the only comments are resubmitted models that look much improved.

ADVANCED TECHNOLOGY MODELING TASK GROUP

Walter Katz reported that the group discussed his proposal of Electrical Module Description, an EBD style architecture for linking IBIS and ICM by generating netlists with common SPICE elements. Todd Westerhoff reported that he gave a presentation on testing and correlation of AMI models. As a result of his findings, he put together BIRD107 to fix some minor issues.

Task group material can be found at:

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

AD HOC TASK GROUPS (INTERCONNECT)

Michael Mirmak reported that group's work has centered on Touchstone 2.0 with discussion of support of mixed mode. A decision was made to pull the Touchstone 2.0 document from consideration by the committee until at least the port ordering can be added and possibly mixed mode support.

Task group material can be found at:

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

NEW ISSUES

None.

BIRD105: MANDATORY GOLDEN WAVEFORM DATA

Anders Ekholm noted that he has joined the Quality Committee to discuss the BIRD further. He noted that one objection to the BIRD is that the data is not needed for simulation. The Quality group also discussed the philosophy of letting vendors decide what needs to be included in a model. Bob Ross noted that he felt the need to seek another alternative, because there are too many negative consequences to making these extra waveforms mandatory. Also, there is the potential for large non-compliance. Mike LaBonte noted that it is relatively easy to comply, because the test fixture description is very flexible. Michael Mirmak asked how many model makers and model users know about [Test Data]. Lynne Green noted that making this required breaks a lot of software tools that automatically generate SPICE to IBIS data. Anders said that if we don't change this process, we'll never get Golden Waveform data. Michael said that [Test Data] is not a well known keyword. It needs more marketing such as a webinar or presentation that gets the word out about its advantages. Lance Wang mentioned that he is working on model validation at his company. He noted that most companies do not supply a validation report, so where is the proof that the model is good? We really do need this data in the models. Mike LaBonte mentioned that most model makers will simulate in one simulator. Golden Waveforms help users check the model against multiple simulators. Michael Mirmak concluded that a vote is deferred until the Quality Committee has had a chance to review the BIRD fully.

BIRD106: CLARIFICATION ON SIGNAL_PIN PARAMETERS

Arpad Muranyi reported that no new comments were received. Bob Ross noted that this BIRD is an editorial correction to comply with the intent of the specification. He thinks this BIRD accomplishes what it is meant to do. Arpad commented that the parser does not deal with this issue correctly, counting the number of pins instead of the number of subparameters under [Circuit Call]. Michael Mirmak noted that BUG99 relates to this issue. Arpad thinks we'll actually need a separate BUG to fully cover this issue. A vote will be scheduled on this BIRD for the next meeting.

BIRD107: UPDATE TO ALGORITHMIC MODELING API (AMI) SUPPORT IN IBIS

Todd Westerhoff reported that this BIRD is a follow-up to correlation work with AMI models run in various tools and correlated to SPICE. A corner case was found where a model had a filtering function in AMI_Init and AMI_Getwave, but the analysis flow was not clearly stated. This caused simulation differences when the same TX model was run in different IBIS-AMI toolkits. The BIRD introduces a new parameter, Use_Init_Output. Todd already noticed a mistake in the BIRD language, so he will issue a BIRD107.1 immediately. Arpad Muranyi felt we should add to the BIRD some language on order of execution for clarification. Bob Ross noted the need to expand the BIRD text to more clearly identify the specification text that is being modified. The BIRD will be discussed further at the IBIS ATM meeting.

IBIS 5.0 DRAFT REVIEW

Michael Mirmak issued a call for comments regarding the draft document. He noted that BIRD105, BIRD106 and BIRD107 are all pending. He asked if all three of these BIRDs are targeted for IBIS 5.0. Bob Ross felt that BIRD106 is an immediate editorial change and needs to be included. BIRD107 is very important and should be included in IBIS 5.0 as well. Bob has noted some minor editorial issues, misspellings for example, that have already been found. Bob mentioned some of the changes in the IBIS 5.0 text including changes to the tree diagram and introduction of sections 10 and 11. Michael noted there is a list available online of editorial fixes that should be included. Arpad Muranyi asked if the 5.0 draft includes any other editorial edits or just new BIRDs. Arpad noted a duplication of a paragraph in the IBIS 4.2 document that should be edited in 5.0.

The text document is available at the following link:

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

PORT DEFINITIONS IN [EXTERNAL CIRCUIT]

Arpad noted that the description of reserved port names gives a list of port names that begin with D_ or A_ to indicate digital or analog types. The specification isn't clear but its intention is for this convention to apply only to reserved port names. There is no way to determine if a user defined port is analog or digital unless it connects to a reserved port. One could determine port type by looking into the AMS model, but this is not desirable and won't work with compiled models. An easy solution is to use the [Node Declarations] keyword that lists die nodes and add a column that lists the type of node. Bob Ross suggested introducing a new keyword versus making syntax changes to an existing keyword. Michael Mirmak noted that we may need to update Figure 12 of the IBIS specification to make it clearer. Arpad plans to write a BIRD to fix this issue.

IBISCHK4 BUG STATUS

No update.

The BUG report list is available at the link below:

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

ICMCHK1 BUG STATUS

No update.

NEW TECHNICAL ISSUES

Michael Mirmak stated that in ICM, a distinction is made in versions 1.0 and 1.1 between nodal paths and tree paths. Nodes in one section tie to nodes in another section. Tree paths make the assumption of one to one connection from one section to another and end to end. This causes problems due to restrictions. In ICM 1.1, the Side parameter is introduced and works well for tree paths. Side is also defined for nodal paths, but it doesn't make any sense for nodal descriptions. This is because node names at one end versus another are always different because they must be different node names.   Side is redundant and could be removed for nodal descriptions. This may need an IIRD to clarify the language.

Also, there is an issue in ICM with S-parameters and swathing. Swathing can only be used with tree paths and S-parameters with nodal paths, so S-parameters can not be swathed.   Swathing of S-parameters may be desirable.

NEXT MEETING

The next IBIS Open Forum teleconference will be held April 25, 2008 from 8:00 AM to 10:00 AM US Pacific Time. A vote is scheduled for BIRD106.

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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-stds.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-stds.org
To join, change, or drop from either or both:

IBIS Open Forum Reflector (ibis@eda-stds.org)
IBIS Users' Group Reflector (ibis-users@eda-stds.org)
State your request.

ibis-info@eda-stds.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-stds.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-stds.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-stds.org

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

http://www.eda-stds.org/ibis/bugs/ibischk/
http://www.eda-stds.org/ibis/bugs/ibischk/bugform.txt

icm-bug@eda-stds.org

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

http://www.eda-stds.org/ibis/icm_bugs/
http://www.eda-stds.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-stds.org/ibis/bugs/s2ibis/bugs2i.txt
http://www.eda-stds.org/ibis/bugs/s2ibis2/bugs2i2.txt
http://www.eda-stds.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-stds.org/ibis/directory.html>

* Other names and brands may be claimed as the property of others.

GEIA STANDARDS BALLOT VOTING STATUS

I/O Buffer Information Specification Committee (IBIS)

Organization	Interest Category	Standards Ballot Voting Status	February 22, 2008	March 14, 2008 Summit	March 14, 2008	April 4, 2008
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	Active	√		√	√
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	√		√	√
IO Methodology	User	Inactive	√			√
LSI	Producer	Active	√		√	√
Marvell Semiconductor	Producer	Inactive				
Mentor Graphics	User	Active	√		√	√
Micron Technology	Producer	Active	√		√	√
Nokia Siemens Networks	Producer	Active	√	√		√
Panasonic	Producer	Inactive				
Samtec	Producer	Inactive				
Signal Integrity Software	User	Active			√	√
Sigrity	User	Inactive		√		
STMicroelectronics	Producer	Inactive				
Synopsys	User	Inactive				
Teraspeed Consulting	General Interest	Active	√		√	√
Texas Instruments	Producer	Inactive				
Toshiba	Producer	Inactive				
Xilinx	Producer	Active			√	√
ZTE	User	Inactive				
Zuken GmbH	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.