# EIA IBIS Open Forum Minutes

Meeting Date: **August 8, 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, 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 |
| 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 |
| 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 |
| Freescale | Jon Burnett |
| 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 |
| Zuken | Michael Schaeder, Ralf Bruening |
| 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 |
|------|------------------|------------|
| August 29, 2008 | 1-866-432-9903 | 121149441 |

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.


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**INTRODUCTIONS AND MEETING QUORUM**

Pavani Jella introduced herself.  She has worked with IBIS models for several years, including previously at Micron and now at Texas Instruments.


**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 membership remains officially at 29 with a few renewals still being processed.  Revenue is above expenses and is expected to remain so for the rest of the year.  We have been informed by the GEIA that, as part of their reorganization and merger with ITAA, they will be using internal accounting teams rather than their current third-party support.  This plus elimination of income pooling ("lockbox") means that financial transactions will be more easily tracked and feedback should be faster.


**REVIEW OF MINUTES AND ARS**

Michael Mirmak called for comments regarding the minutes of the July 18, 2008 IBIS Open Forum teleconference.  The minutes were approved without changes.

**WEB PAGE UPDATES**

Syed Huq reported that changes have been made to the roster and events pages including additional China Summit information. More updates are coming.


**MAILING LIST ADMINISTRATION**

Bob Ross reported that everything is working normally.


**MODEL LIBRARY UPDATE**

Lance Wang is planning in a few weeks to review all the links and ask for updates to any missing or broken links. Bob Ross noted that the newly formed company Numonyx has many new models on their site found at:

http://www.numonyx.com/EN-US/RESOURCECENTER/Pages/ModelingTools.aspx

Arpad Muranyi mentioned that he was browsing the ICM specification and found a broken link in it. He asked how we should handle broken links in the specifications. Michael Mirmak asked that this get discussed later in the meeting.


**PRESS UPDATE**

No update.


**MISCELLANY/ANNOUNCEMENTS**

No update.


**OPENS FOR NEW ISSUES**

Michael Mirmak brought up a topic related to GEIA and ITAA. The logo used in the IBIS Open Forum official publications mentions EIA. GEIA is not associated with EIA anymore, and as such, the logo should probably be changed. We could use the phrase "Standards and Technology" instead of GEIA or ITAA. We can look into creating a whole new logo too. Bob Ross suggested having no affiliation on the logo and designing a new logo that prints well in both color and black and white. Michael will add this as an agenda topic for future meetings.


**INTERNATIONAL/EXTERNAL PROGRESS**

- DASC

Michael Mirmak had no update, but he mentioned that a recent EE Times editorial gave some background information on DASC. The DASC file and e-mail archive may be found at:

http://www.dasc.org/

Arpad Muranyi mentioned that the Accellera group finished up version 2.3 of the Verilog-AMS specification.  Michael asked what the relationship of Accellera is to IEEE and other standards bodies.  Do they submit documents to other standards bodies such as IEEE for publication?  Arpad was not sure about this.  Michael took the AR to find out.  Arpad asked if this meant that the official Verilog-AMS language supported by IBIS is now version 2.3.  Michael and Bob Ross felt that this was true so that the newest features could be supported by IBIS, but this is up to each EDA vendor to support new features if desired.

- 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**
Randy Wolff noted that he has emailed Dennis Brophy a second time as a follow-up to his conversation with John Messina.  He asked Dennis to help him complete a Work Item Proposal for the next WG2 meeting; however, he still has not received a response.

Michael Mirmak and Bob Ross noted that Victor Berman, the DASC chair, is also a Technical Activities Group (TAG) chair for the IEC.  He is a US representative.  Randy took the AR to contact him to see if he can be of any assistance.


**SUMMIT STATUS**
- Asian Summits Planning
Michael Mirmak noted that the Japan summit will be held at JEITA headquarters November 14, 2008.  Bob Ross mentioned that the new headquarters offers a larger meeting room than last year.  An official announcement has been sent out for the 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.  We are close to having contracts signed to finalize the location for the China summit.  The China summit will be held November 11, 2008.

- 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 mentioned that some logos for the summit booth need to be updated.

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 discussing I-V table specifications with respect to On-Die Termination and double counting.  They plan to write a section for the quality checklist to cover

series switch models after release of the regular checklist.  Eckhard Lenski added that the committee will also add series element checks.


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 EMD and EBD extension proposals.  Walter Katz made a list of SPICE elements to consider including in the new proposal.  Arpad is soliciting feedback on this list of elements to make sure it is sufficient for the modeling proposals.

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.  They have a draft specification to take care of mixed mode data.

Task group material can be found at:

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


**NEW ISSUES**
Arpad Muranyi noted that one of the web references to the drawings that help with visualizing connectors in the ICM specification is broken.  The broken link exists on page 32 of the specification.  Michael Mirmak noted two options.  One is to make reference to drawings in other specifications.  The second option is to move the specification into another format besides ASCII text that would allow drawings to be placed into the specification document.  Arpad didn't think this was important enough to make any changes; he just wanted to make a note of it.


**BIRD111: EXTENDED USAGE OF EXTERNAL SERIES COMPONENTS IN EBDS**
Bob Ross noted that the example in the BIRD was incorrect, and he is working with Michael Schaeder to introduce a BIRD111.1.  Bob has concerns with the series elements.  One thing constrained by the original EBD specification is dealing with differential nets.  The proposal is to allow a node connection in one path and pick up the other node in a second path.  The second

example in the BIRD shows a structure that exists in some EBD files already available and IBISCHK does not catch the specification problem.  There is concern is that the BIRD does not address the problem of differential buffers, and text concerning this may need to be added.


## IBIS 5.0 DRAFT REVIEW
Michel Mirmak issued a call for comments regarding the draft document.  Bob noted that the website has been cleaned up to show only the newest draft at the top level.  A vote will be scheduled for approval of IBIS 5.0 as an official IBIS specification at the next meeting.  All votes sent by email proxy or received during the meeting will count towards the official vote tally.  Michael noted that he will issue a press release once the specification is finalized.  Bids will then be solicited for IBISCHK parser development.

The text of the draft specifications is available at the following link:

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


## 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
Michael Mirmak has created a draft parser that fixes BUG4.  He is looking for feedback.  A test case needs to be included in the parser before official release.  This will be version 1.1.3.


## NEW TECHNICAL ISSUES
Michael Mirmak referenced the section in [Model Spec] that deals with hysteresis.  The specification defines a rising edge region between Vinh- and Vinh+ and a falling edge switching region between Vinl+ and Vinl-.  He showed the ATAPI specification.  This spec labels V+ and V- thresholds.  The IBIS specification names were probably named with reference to the other IBIS parameters Vinh and Vinl.  These names probably should be named more consistently with the ATAPI specification.

Arpad Muranyi requested time at the next meeting for discussion on min/max conditions for clamps as relates to corners.


## NEXT MEETING
The next IBIS Open Forum teleconference will be held August 29, 2008 from 8:00 AM to 10:00 AM US Pacific Time.  A vote on IBIS 5.0 is scheduled.

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

# GEIA STANDARDS BALLOT VOTING STATUS

## I/O Buffer Information Specification Committee (IBIS)

| Organization | Interest Category | Standards Ballot Voting Status | June 10, 2008 | June 27, 2008 | July 18, 2008 | August 8, 2008 |
|---|---|---|---|---|---|---|
| Advanced Micro Devices | Producer | Inactive | | | | √ |
| 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 | | √ | | |
| 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 | | | | |

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.