

# EIA IBIS Open Forum Minutes

Meeting Date: **August 3, 2007**

## GEIA STANDARDS BALLOT VOTING STATUS

See last page of the minutes for the voting status of all member companies.

## VOTING MEMBERS AND 2007 PARTICIPANTS

Agilent	Ian Dodd, Radek Biernacki, Saliou Dieye, Riccardo Giacometti
AMD	Nam Nguyen*, Tadashi Arai
Ansoft Corporation	(Michael Brenneman)
Applied Simulation Technology	(Fred Balistreri)
Apple Computer	(Bill Cornelius)
Cadence Design Systems	[Lance Wang], C. Kumar, Hemant Shah, Patrick dos Santos, Shangli Wu*
Cisco Systems	Syed Huq*, Tram Bui, AbdulRahman Rafiq, Huyen Pham, Darja Padilla, Mike LaBonte, Paul Ruddy, Gurpreet Hundal, Luis Boluna, Ehsan Kabir, Jehyoung Lee, Susmita Mutsuddy, Eddie Wu
Ericsson	Anders Ekholm, Ole Segtum
Freescale	Jon Burnett
Green Streak Programs	Lynne Green
Hitachi ULSI Systems	Kazuyoshi Shoji
Intel Corporation	Michael Mirmak*, [Arpad Muranyi]
IO Methodology	Lance Wang*
LSI	Frank Gasparik*, Kim Helliwell, Dinh Tran, Praveen Soora, Brian Burdick*
Mentor Graphics	John Angulo, Arpad Muranyi*, [Ian Dodd], Eric Rongere, Stephane Rousseau, Bill Hargin, Patrick Carrier
Micron Technology	Randy Wolff*, Pavani Jella
Nokia Siemens Networks GmbH[1]	Eckhard Lenski*, Flavio Maggioni, Roberto Preatoni, Umberto Gatti, Massimo Ceppi
Panasonic	(Atsuji Ito)
Samtec	(Corey Kimble)
Signal Integrity Software	Barry Katz, Douglas Burns, Mike Steinberger, Walter Katz, Todd Westerhoff
Sigrity	Sam Chitwood, Sandy Dung
STMicroelectronics	Antonio Girardi, Giacomo Bernardi, Roberto Izzi
Synopsys	Ted Mido
Teraspeed Consulting Group	Bob Ross*, Tom Dagostino
Texas Instruments	Otis Gorley, Richard Ward, Bonnie Baker

Toshiba	(Yasumasa Kondo)
Xilinx	Bruce Bandeli, David Banas
ZTE	(Shunlin Zhu)
Zuken	Michael Schaefer, Ralf Bruening, John Berrie

#### **OTHER PARTICIPANTS IN 2007**

74ze Engineering	Linc Jepson
Agere	(Nirav Patel)
Altera	Hui Liu, Zhe Lin, Ravindra Gali, Salman Jiva
Apache Design Solutions	(Ji Zheng)
Applied Telisis, Inc. (ATI)	Vladimar Mandrusov
Cavium Networks	Johann Nittmann
ChipX	Jay Hidy, Oren Dvir
Cybernet Systems	Kazuhiki Kusunoki
EFM	Ekkehard Miersch
Enterasys	Robert Haller
Extreme Networks	Kevin Ko
Fluent	(Chetan Desai)
Force10 Networks	Robert Badal
Free Electron Software	Al Davis
GEIA	(Chris Denham)
Hewlett Packard	Shafiq Rahman
Huawei Technologies	ChunXing Huang, Bob He
IBM	Michael Sorna, Adge Hawes
Infineon	Christian Sporrer
Integrated Circuit Systems (ICS)	(Dan Clementi)
JEITA	Atsushi Ishikawa
Juniper Networks	Raul Lozano
Leventhal Design	Roy Leventhal
Lynguent	Andrew Levy
National Institute of Applied Science (INSA)	Etienne Sicard
National Instruments	Lee Maixman
Netlogic	Eric Hsu
NEC Electronics Corporation	Takeshi Watanabe, Hock Seow, Huy Tran
NESA	Edward Sayre
Northrop Grumman	Dusan Radosevic
Nuova Systems	Zhiping Yang, Lin Shen
NXP	H N Sudarshan
Optimal Corporation	Marc Kowalski
Politecnico di Torino	Igor Stievano, Michelangelo Bandinu
Renesas Technology	Takuji Komeda
Samsung	Sang-Soo Park
Sedona International	Joe Socha
Siemens AG [1]	[Eckhard Lenski], Manfred Maurer

Silego	(Joe Froniewski)
Sun Microelectronics	Leon Yang
Tiburon Design Automation	Patrick O'Halloran
White Electronics Designs	John Perez
Xyratex	Paul Levin, Joseph Chan

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	Bridge #	Passcode
August 24, 2007	1-916-356-2663	4	540-9686

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, provide the bridge number and passcode at the automated prompts. If asked by an operator, please request to join the IBIS Open Forum hosted by Michael Mirmak. For international dial-in numbers, please contact Michael Mirmak.

NOTE: "AR" = Action Required.

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## **INTRODUCTIONS AND MEETING QUORUM**

Brian Burdick from LSI Logic introduced himself. He will be officially representing LSI in all IBIS matters as Frank Gasparik is retiring. Brian has worked with IBIS before, but not recently.

## **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 at 29 members currently and sitting well financially. He reminded members of the renewal process and mentioned that he has followed up with members from last year who have not renewed. Also, he has not received an updated financial report from GEIA within the last month.

## **REVIEW OF MINUTES AND ARS**

Michael Mirmak called for comment regarding the minutes of the July 13, 2007 IBIS Open Forum teleconference. Randy Wolff noted a misspelling of Patrick O'Halloran's name (of Tiburon). The minutes were approved with the noted change.

### **WEB PAGE UPDATES**

Syed Huq reported that he made changes to the poster page and roster page. Bob Ross requested another review of the roster due to recent changes with members moving companies.

### **MAILING LIST ADMINISTRATION**

Bob Ross reported that the list is running normally.

### **MODEL LIBRARY UPDATE**

No update.

### **PRESS UPDATE**

Michael Mirmak mentioned an EE Times article on the ATM committee work. Even though this article presented the work as causing controversy within IBIS, Bob Ross felt this was positive press showing IBIS at the forefront of technology. The article is available at the following link:

<http://www.eetimes.com/news/latest/showArticle.jhtml?articleID=201200001>

Arpad Muranyi mentioned an article on the Electronic Design webpage detailing a toolkit being released by SiSoft. The toolkit will allow interested parties to evaluate and develop models based on the proposed IBIS-ATM standard for SERDES modeling and channel analysis. The article is available at the following link:

<http://www.elecdesign.com/Articles/Index.cfm?ArticleID=16169>

Michael asked to clarify whether we should include links to blogs and press releases in the minutes. Bob felt that a press releases focusing on product upgrades or with incidental mention of IBIS might not be appropriate, but releases about products with new IBIS features would be useful to the IBIS community by showing additional IBIS support.

### **MISCELLANY/ANNOUNCEMENTS**

None.

### **OPENS FOR NEW ISSUES**

Bob Ross asked for some time at the end of the meeting to discuss various topics. Also, he asked to discuss a potential DesignCon booth during the summit discussion.

### **INTERNATIONAL/EXTERNAL PROGRESS**

Upcoming conferences of interest to IBIS members are listed below.

SSP, the IEEE Statistical Signal Processing Workshop, is to be held August 26-29, 2007 in Madison, Wisconsin. The deadline for paper submissions has passed. More information can be found at:

<http://ssp07.org/>

The 6th International Workshop on Electromagnetic Compatibility of Integrated Circuits (EMC Compo 2007) is to be held November 28-30, 2007, in Torino, Italy. There will be some sessions mentioning IBIS. More information can be found at:

<http://www.emccompo07.polito.it/>

Michael Mirmak mentioned that the IEEE DASC committee held a meeting about two weeks ago. A topic of interest lately has been encryption in languages like VHDL-AMS and Verilog-A(MS). A vote at the meeting formed a group to investigate encryption further. The first meeting of the new group is August 22. Michael has information on how to attend by teleconference and can provide this to members as well as a link on how to get onto the DASC mailing list.

Michael also reported that Roy Leventhal attended the recent TC10 IEEE meeting. Roy gave a report to the committee on recent IBIS progress. Roy summarized his report in a document available at the following link:

<http://www.eda.org/ibis/docs/IBISReportJuly2007.pdf>

## **IEC APPROVAL ACTIVITIES**

Michael Mirmak reported that our representation to the IEC has changed and is no longer Alex Zamfirescu. Michael has tried to contact the new representative without success so far. Randy Wolff took the AR to help in contacting the new representative.

## **SUMMITS**

### **- Asian IBIS Summit (China) Planning**

The Asian IBIS Summit (China) will be held Tuesday, September 11 at The Park Plaza Science Park hotel in Beijing. Bob Ross and Lance Wang are contacts for attendees and presenters. Michael Mirmak reported that there is a full program at this time and Bob Ross is working on the schedule. The fourth call for participation and presentations has gone out. Pre-registration is strongly recommended. Deadline for presenters to submit material is August 14. Arpad Muranyi asked if it was necessary to have Chinese translations in the presentations. Michael responded that this is not necessary, but allow time for live translation by Lance Wang during and after the presentation. Official sponsors so far include Huawei Technologies, Agilent, Ansoft, Cadence, Intel, Mentor Graphics, Sigrity, SiSoft, Synopsys and ZTE Corporation. Future announcements will omit the call for presentations since we now have a full program.

### **- Asian IBIS Summit (Japan) Planning**

The Asian IBIS Summit (Japan) will be held Friday, September 14 at JEITA headquarters in Tokyo. Sponsors include Agilent Technologies, ATE Service Corporation, Cadence Design Systems, Cybernet Systems and Mentor Graphics. The other official sponsor of the Japan summit is JEITA. Bob is the main contact for this event. The third announcement went out one week ago. Presentations should be in English.

Sponsorship opportunities for the Asian IBIS summits are available, with sponsors receiving free mentions in the minutes, agenda, and other announcements. Contact the IBIS Board for further details.

Bob Ross mentioned that if we want to have a booth at DesignCon2008, we will need to buy an insurance policy for about \$300. Michael encouraged us to have a booth, but we will need to speak with GEIA first. Bob took the AR to contact GEIA once he is done organizing the Asian IBIS summits.

### **IBIS QUALITY TASK GROUP**

Bob Ross reported that the group is meeting weekly, and they are into section 5 out of 7 of their quality document. Lately, they are discussing how to document the [Temperature] keyword.

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

[http://www.eda-stds.org/ibis/quality\\_wip/](http://www.eda-stds.org/ibis/quality_wip/)

### **IBIS MODEL REVIEW TASK GROUP**

No update.

### **ADVANCED TECHNOLOGY MODELING TASK GROUP**

Arpad Muranyi reported that they have been meeting in the last two weeks. Cadence and SiSoft are both providing test programs, and they are testing the test programs with each other's DLLs now. The executables of the test programs and DLLs will be made available to the members of the task group for further test and analysis once the initial tests are completed.

Task group material can be found at:

[http://www.eda-stds.org/ibis/macromodel\\_wip/](http://www.eda-stds.org/ibis/macromodel_wip/)

### **AD HOC TASK GROUPS (INTERCONNECT)**

Michael Mirmak reported that the group has not met recently. There is a meeting scheduled for August 8. Topics will be IIRD9 (updates to ICM) and IBIS-to-ICM links. If there is time, there will be further discussion on the Touchstone2 updates.

Task group material, including the Touchstone2 draft specification, can be found at:

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

## **NEW ISSUES**

None.

## **IBISCHK4 BUG STATUS**

Michael Mirmak mentioned that all BUGs through BUG98 are closed with the 4.2.2 parser. The 4.2.2 parser source code has been made available to parser purchasers, and the executables can be downloaded from the IBIS website. Syed Huq will be providing another Linux compilation. Michael mentioned some changes to the documentation that need to be made.

## **ICMCHK1 BUG STATUS**

Michael Mirmak reported that there is one BUG, but it will not be fixed until the next version of the parser. The next release of the parser will come out once IIRD9 is closed.

## **BIRD98.2: GATE MODULATION EFFECT (TABLE MODEL)**

Bob Ross summarized recent changes to the BIRD. The effective current parameters were described in more detail. Reference diagrams were added. Also, it was made clear that pullup related tables are VCC relative. The notes sections were rearranged, but the notes need more work. Bob asked for comments from members, to be sent to Bob and Antonio Girardi or the email reflector.

## **PROPOSED TOUCHSTONE2 SPECIFICATION DISCUSSION**

Michael Mirmak noted that suggested changes from the last meeting have not been added to the draft document and have not been fully approved yet. Bob Ross discussed the suggested changes from Sam Chitwood brought up at the last meeting. Bob was concerned about some of the major change suggestions such as those related to half-matrices and binary representation. We need agreement that we want to make the changes, and then we will require more committee work and review to implement them correctly. Bob also asked for further clarification about adding a keyword to state the number of frequency points in the file. Michael agreed to bring the document back into the Task group for more detailed discussions on the suggested changes.

Michael brought up some related news. As relates to names and copyrights, Michael did some legal checking, and the legal status of the original Touchstone name is that it is officially registered with the Patent and Trademark office. He noted that the GEIA suggested assignment of the Touchstone registration to IBIS or GEIA before applying for a trademark on the Touchstone2 name.

The draft specification can be found at:

[http://www.eda.org/ibis/adhoc/interconnect/touchstone\\_spec2\\_draft8.pdf](http://www.eda.org/ibis/adhoc/interconnect/touchstone_spec2_draft8.pdf)

## NEW TECHNICAL ISSUES

None.

## OPEN ISSUES

Bob Ross noted that we should invite Agilent to a meeting or Summit to present on IBISCHK and how to improve it to enhance ease of incorporating the code into products. Bob also noted that Mike LaBonte found a specification with hysteresis in a differential receiver. We would not be able to model this in IBIS. Michael Mirmak also recently sent out a case with a model as an I/O, but it has 0 values in the pullup or pulldown table. The parser does not notice this inconsistency where the model should be considered type open drain or open source.

## NEXT MEETING

The next IBIS Open Forum teleconference will be held August 24, 2007 from 8:00am to 10:00am US Pacific Time.

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## NOTES

IBIS CHAIR: Michael Mirmak (916) 356-4261, Fax: (916) 377-3788

[michael.mirmak@intel.com](mailto:michael.mirmak@intel.com)

Server Platform Technical Marketing Engineer, Intel Corporation  
FM5-239  
1900 Prairie City Rd.  
Folsom, CA 95630

VICE CHAIR: Syed Huq (408) 525-3399, Fax: (408) 526-5504

[shuq@cisco.com](mailto:shuq@cisco.com)

Manager, Hardware Engineering, Cisco Systems  
170 West Tasman Drive  
San Jose, CA 95134-1706

SECRETARY: Randy Wolff (208) 363-1764, Fax: (208) 368-3475

[rrwolff@micron.com](mailto:rrwolff@micron.com)

SI Modeling Manager, Micron Technology, Inc.  
8000 S. Federal Way  
Mail Stop: 01-711  
Boise, ID 83707-0006

LIBRARIAN: Lance Wang (978) 633-3388

[lwang@iometh.com](mailto:lwang@iometh.com)

President / CEO, IO Methodology, Inc.  
PO Box 2099  
Acton, MA 01720



WEBMASTER: Syed Huq (408) 525-3399, Fax: (408) 526-5504

[shuq@cisco.com](mailto:shuq@cisco.com)

Manager, Hardware Engineering, Cisco Systems  
170 West Tasman Drive  
San Jose, CA 95134-1706

POSTMASTER: Bob Ross (503) 246-8048, Fax : (503) 239-4400

[bob@teraspeed.com](mailto:bob@teraspeed.com)

Staff Scientist, Teraspeed Consulting Group  
10238 SW Lancaster Road  
Portland, OR 97219

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](mailto: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](mailto:ibis-request@eda-stds.org)

To join, change, or drop from either or both:  
IBIS Open Forum Reflector ([ibis@eda-stds.org](mailto:ibis@eda-stds.org))  
IBIS Users' Group Reflector ([ibis-users@eda-stds.org](mailto:ibis-users@eda-stds.org))  
State your request.

[ibis-info@eda-stds.org](mailto: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](mailto: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](mailto: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](mailto: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](mailto: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/)  
[http://www.eda-stds.org/ibis/icm\\_bugs/icm\\_bugform.txt](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/bugspl.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>

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 5, 2007	June 22, 2007	July 13, 2007	August 3, 2007
Advanced Micro Devices	Producer	Active			√	√
Agilent Technologies	User	Active	√	√	√	
Ansoft	User	Inactive				
Apple Computer	User	Inactive				
Applied Simulation Technology	User	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	√			
Intel Corp.	Producer	Active	√			
IO Methodology	User	Active		√	√	√
LSI Logic	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	Inactive	√			
Sigrity	User	Inactive	√		√	
STMicroelectronics	Producer	Inactive			√	
Synopsys	User	Inactive				
Teraspeed Consulting	General Interest	Active	√	√	√	√
Texas Instruments	Producer	Inactive	√		√	
Toshiba	Producer	Inactive				
Xilinx	Producer	Inactive	√	√		
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.