

EIA IBIS Open Forum Minutes

Meeting Date: **March 30, 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

Actel	(Prabhu Mohan)
Agere	(Nirav Patel)
Agilent	Radek Biernacki
AMD	Nam Nguyen*, Tadashi Arai
Ansoft Corporation	(Michael Brenneman)
Apache Design Solutions	(Ji Zheng)
Applied Simulation Technology	(Fred Balistreri)
Apple Computer	(Bill Cornelius)
Cadence Design Systems	Lance Wang*, C. Kumar, Hemant Shaw
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
Fluent	(Chetan Desai)
Freescale	Jon Burnett
Green Streak Programs	Lynne Green
Hitachi ULSI Systems	Kazuyoshi Shoji
Huawei Technologies	ChunXing Huang, Bob He
Integrated Circuit Systems (ICS)	(Dan Clementi)
Intel Corporation	Michael Mirmak*, Arpad Muranyi
LSI Logic	Frank Gasparik, Kim Helliwell, Dinh Tran, Praveen Soora
Mentor Graphics	John Angulo*, Ian Dodd*
Micron Technology	Randy Wolff*, Pavani Jella
NEC Electronics Corporation	Hock Seow, Huy Tran
Panasonic	(Atsuji Ito)
Samtec	(Corey Kimble)
Siemens AG	Eckhard Lenski*
Signal Integrity Software	Barry Katz, Douglas Burns, Mike Steinberger, Walter Katz, Todd Westerhoff
Sigrity	Sam Chitwood, Sandy Dung
Silego	(Joe Froniewski)
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)

OTHER PARTICIPANTS IN 2007

74ze Engineering	Linc Jepson
Altera	Hui Liu, Zhe Lin, Ravindra Gali, Salman Jiva
Applied Telisis, Inc. (ATI)	Vladimar Mandrusov
Cavium Networks	Johann Nittmann*
ChipX	Jay Hidy, Oren Dvir
Cybernet Systems	Kazuhiki Kusunoki
Enterasys	Robert Haller
Extreme Networks	Kevin Ko
Force10 Networks	Robert Badal
GEIA	(Chris Denham)
Hewlett Packard	Shafiq Rahman
IBM	Michael Sorna, Adge Hawes
Leventhal Design	Roy Leventhal
National Instruments	Lee Maixman
Netlogic	Eric Hsu
NESA	Edward Sayre
Nuova Systems	Zhiping Yang, Lin Shen
NXP	H N Sudarshan
Optimal Corporation	Marc Kowalski
Renesas Technology	Takuji Komeda
Samsung	Sang-Soo Park
Sedona International	Joe Socha
Sun Microelectronics	Leon Yang
Tiburon Design Automation	Patirick Challacn
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
April 19, 2007	DATE IBIS Summit – no teleconference bridge		
April 20, 2007	1-916-356-2663	3	231-4253

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.

INTRODUCTIONS AND MEETING QUORUM

Johann Nittmann from Cavium Networks introduced himself. He recently joined Cavium Networks from Intel. His background is in SI within clock and power grids. Cavium provides network chips. Johann's interest in IBIS is bringing driver models to the IBIS platform, so he is joining to learn more about IBIS.

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 he is having difficulty getting updated financials and membership updates from GEIA. He has no end of the year report yet. Michael received notice from GEIA during the meeting that Ericsson's payment has been received, and they can officially be considered a member of the IBIS Open Forum as of February 28, 2007. Apple Computer has also officially joined as a new member. 12 members have paid dues so far this year.

REVIEW OF MINUTES AND ARS

Michael Mirmak reviewed the minutes of the March 9, 2007 IBIS Open Forum teleconference minutes. It was noted that Ericsson should be listed in the members list in this set of minutes. The minutes were approved with the noted change.

WEB PAGE UPDATES

No update.

MAILING LIST ADMINISTRATION

Bob Ross reported that the list is running normally.

NEW MODELS AVAILABLE, LIBRARY UPDATE

No update. Lance Wang plans to check over the model links before the next meeting.

PRESS UPDATE

Bob Ross reported that Bonnie Baker had an article in the March 15 edition of EDN magazine entitled "IBIS and Spice timing mismatches." The article described the time shift typically seen when comparing IBIS simulation waveforms to Spice simulation waveforms. The article can be found at the following link:

<http://www.edn.com/ednmag/article/CA6421374.html>

MISCELLANY/ANNOUNCEMENTS

None.

OPENS FOR NEW ISSUES

None.

INTERNATIONAL/EXTERNAL PROGRESS

Several upcoming conferences of interest to IBIS members include:

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

<http://ssp07.org/>

SPI, the IEEE Workshop on Signal Propagation on Interconnects held May 13-16, 2007 in Genoa, Italy. The deadline for paper submissions has passed. More information can be found at:

<http://www.spi.uni-hannover.de/>

IMS 2007, the IEEE MTT-S International Microwave Symposium held June 3-7, 2007 in Honolulu, Hawaii. The paper deadline has passed. More information can be found at:

<http://www.ims2007.org/>

EIA/ANSI APPROVAL ACTIVITIES

Randy Wolff reported that the March 9, 2007 issue of the ANSI Standards Action bulletin announced the approval of the IBIS 4.2 specification. This specification can now officially be referred to as ANSI/EIA-656-B. GEIA will add the ANSI logo to the document and release it through their store. Syed Huq will add this standard to the website. Randy will check with GEIA about going through the IEC approval process.

SUMMITS

- DATE

Date is April 16-20 with the summit scheduled for Thursday, April 19 from 8:30am-12:30pm. DATE is being held in Nice, France. Michel Mirmak reported that the third announcement went out. Bob Ross reported that there are 6 or 7 paper submissions so far. Agilent, Cadence, Mentor, and Zuken are co-sponsors.

- DAC

DAC is being held June 4-8, 2007 in San Diego, California. Tuesday, June 5 is scheduled for the summit. There will be an all-day summit. Michael Mirmak said we are scheduled to send out the first call for papers in about 2 weeks. Michael asked John Angulo to help with the room arrangements. John said he will check into room arrangements today.

- Asia Events

Michael Mirmak mentioned that two events are planned for Tokyo and Beijing in September. Bob Ross reported that Tuesday, September 11 will be the China meeting in Beijing. The Park Plaza hotel is reserved. Sponsorship arrangements have not been completed yet. Friday, September 14 will be the Tokyo meeting at JEITA headquarters.

Sponsorship opportunities for the DATE, DAC and Asian 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 last meeting was cancelled. David Banas has some proposals on the table for rewording some sections of the checklist. The group is still actively reviewing the document. Michael Mirmak asked if the group could present some of their work in an upcoming teleconference.

The link to the quality task group checklist is at:

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

IBIS MODEL REVIEW TASK GROUP

No report.

ADVANCED TECHNOLOGY MODELING TASK GROUP

Michael Mirmak reported that the group is scheduled to meet next week. They cancelled last week's meeting. They will get into details of the API proposal in the next meetings. Ian Dodd mentioned that they are trying to get feedback from IC vendors on what info they can supply and what this info will allow in simulation.

Task group material can be found at:

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

AD HOC TASK GROUPS (INTERCONNECT)

Michael Mirmak reported that there have been no meetings lately. They will have a meeting next week. There has been good feedback related to the Touchstone-2 specification. Also, Bob Ross submitted detailed comments on the ICM-IBIS linking BIRD. All of this will be reviewed at the next meeting.

Task group material can be found at:

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

NEW ISSUES

None.

GATE MODULATION PRESENTATION AND DISCUSSION

Antonio Girardi presented a report on the analysis of the relationship between effective current and V_{ds} change. He looked at whether or not $V_{ds}=V_{DD}$ is the best choice. He chose three values of V_{ds} within the saturation zone of the driver transistor. There was very little difference in effective current noted between the three V_{ds} settings. The small error was related to the channel modulation effect. The results showed that one could consider the effective current independent of V_{ds} change for V_{ds} values within the saturation region of the transistor. The best choice appeared to be $V_{ds}=V_{DD}$.

Michael Mirmak asked if the data for V_{ds} is only collected in the saturation region, is this only characterizing SSO effects when the buffer is stable, i.e. not switching? Antonio has observed that noise on the gate is usually smaller when the transistor is in its linear region. Antonio also confirmed that the methodology shown in the presentation matches the current revision of the BIRD. Michael asked how straightforward this approach would be to add to the EDA tools. John Angulo said the scaling coefficients should fit in pretty well with the algorithms used in their tools. Lance Wang asked how to validate that the data in the IBIS model is correct. Michael asked Mike Labonte if we could add this approach as an improvement to the IBIS driver element in the macromodel libraries. Mike said he would work with Arpad Muranyi on this. Bob Ross asked about modeling of open-source, open-drain drivers and on-die terminations. Michael asked about the interaction of this data with BIRD95 data. The consensus was that they are related but independent.

Michael will schedule a review of the BIRD98.1 text at the next meeting.

The presentation can be found at the following url:

http://www.eda-stds.org/ibis/docs/l_effective_and_Vds_dependence.ppt

IBISCHK4 BUG STATUS

Bob Ross reported that he found a few issues with the work done so far, so the developer is making some changes and should be issuing a "final" release today to review. Michael requested that any assumptions that the new parser makes be summarized for inclusion in a parser specification.

ICMCHK1 BUG STATUS

No new BUGs have been reported. Michael Mirmak mentioned that decisions will need to be made on how to update the parser once IIRD9 from the ad hoc interconnect group is released.

NEW TECHNICAL ISSUES

None.

OPEN ISSUES

None.

NEXT MEETING

The next IBIS Open Forum Summit will be held April 19, 2007 at DATE. The next teleconference will be held April 20, 2007 from 8:00am to 10:00am US Pacific Time.

=====

NOTES

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

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

shug@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

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

LIBRARIAN: Lance Wang (978) 262-6685, Fax: (978) 262-6363

lwang@cadence.com

Senior Member, Technical Staff, Cadence Design Systems, Inc.
270 Billerica Road
Chelmsford, MA 01824

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

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

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

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>

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	February 1, 2007	February 16, 2007	March 9, 2007	March 30, 2007
Advanced Micro Devices	Producer	Active	√		√	√
Agere Systems	User	Inactive				
Agilent Technologies	User	Inactive	√			
Ansoft	User	Inactive				
Apache Design Solutions	User	Inactive				
Apple Computer	User	Inactive				
Applied Simulation Technology	User	Inactive				
Cadence Design Systems	User	Inactive	√			√
Cisco Systems	User	Active	√	√	√	√
Ericsson	Producer	Active			√	√
Fluent	Producer	Inactive				
Freescale Semiconductor	Producer	Inactive	√			
Green Streak Programs	General Interest	Inactive		√		
Hitachi ULSI Systems	Producer	Inactive	√			
Huawei Technologies	User	Inactive	√			
Integrated Circuit Systems	Producer	Inactive				
Intel Corp.	Producer	Active	√	√	√	√
LSI Logic	Producer	Inactive	√			
Mentor Graphics	User	Active	√	√	√	√
Micron Technology	Producer	Active	√	√	√	√
NEC Electronics Corp.	Producer	Inactive	√			
Panasonic	Producer	Inactive				
Samtec	Producer	Inactive				
Siemens AG	Producer	Active			√	√
Signal Integrity Software	User	Inactive	√			
Sigrity	User	Inactive	√			
Silego	Producer	Inactive				
STMicroelectronics	Producer	Active		√	√	√
Synopsys	User	Inactive	√			
Teraspeed Consulting	General Interest	Active	√	√	√	√
Texas Instruments	Producer	Active	√	√	√	
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.