

IBIS Open Forum Minutes

Meeting Date: **June 11, 2010**

Meeting Location: **Teleconference**

VOTING MEMBERS AND 2010 PARTICIPANTS

Actel	(Prabhu Mohan)
Agilent	Radek Biernacki*, Ming Yan, Fangyi Rao, Gilbert Berger, Amolak Badesha
AMD	Nam Nguyen
Ansys (Ansoft Corporation)	Danil Kirsanov
Apple Computer	(Matt Herndon)
Applied Simulation Technology	(Fred Balistreri)
ARM	(Nirav Patel)
Cadence Design Systems	Terry Jernberg, Wenliang Dai, Ambrish Varma
Cisco Systems	Syed Huq*, Mike LaBonte*, Tony Penaloza, Huyen Pham, Bill Chen, Ravindra Gali, Zhiping Yang
Ericsson	Anders Ekholm*, Pete Tomaszewski
Freescale	Jon Burnett, Om Mandhana
Green Streak Programs	Lynne Green
Hitachi ULSI Systems	Yutaka Uematsu
Huawei Technologies	(Jinjun Li)
IBM	Adge Hawes*, Greg Edlund*
Infineon Technologies AG	Christian Sporrer
Intel Corporation	Michael Mirmak*, Myoung (Joon) Choi, Vishram Pandit, Richard Mellitz
IO Methodology	Lance Wang*
LSI	Brian Burdick*
Mentor Graphics	Arpad Muranyi*, Neil Fernandes, Zhen Mu
Micron Technology	Randy Wolff*
Nokia Siemens Networks GmbH	Eckhard Lenski*
Samtec	(Corey Kimble)
Signal Integrity Software	Walter Katz*, Mike Steinberger, Todd Westerhoff, Barry Katz
Sigrity	Brad Brim, Kumar Keshavan, Srdjan Djordjevic, Ben Franklin
Synopsys	Ted Mido
Teraspeed Consulting Group	Bob Ross*, Tom Dagostino
Texas Instruments	Bonnie Baker
Toshiba	(Yasumasa Kondo)
Xilinx	Mike Jenkins
ZTE	(Huang Min)
Zuken	Michael Schaeder, Ralf Bruening

OTHER PARTICIPANTS IN 2010

AET, Inc.	Mikio Kiyono
Altera	John Oh, Hui Fu
Avago	Razi Kaw
Bosch Car Multimedia	Rene Steinberg, Patric Kessler
Broadcom	Mohammad Ali
Curtiss-Wright	John Phillips
ECL, Inc.	Tom Iddings
eSilicon	Hanza Rahmai
Exar Corp.	Helen Nguyen
Mindspeed	Bobby Altaf
National Semiconductor	Hsinho Wu*
NetLogic Microsystems	Eric Hsu, Edward Wu
NXP Semiconductors	Gerald Krasemann
Politecnico di Torino	Igor Stievano, Stefano Grivet-Talocia, Piero Triverio, Flavio Canavero
Renesas Technology	Takuji Komeda
Siemens, AG.	Manfred Maurer, Michael Flint
Simberian	Yuriy Shlepnev
Span Systems Corporation	Vidya (Viddy) Amirapu
Summit Computer Systems	Bob Davis
Tabula	David Banas
TechAmerica	(Chris Denham)
Independent	AbdulRahman (Abbey) Rafiq, Robert Badal

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	Meeting Number	Meeting Password
June 15, 2010	DAC IBIS Summit	no teleconference
July 9, 2010	201 710 432	IBIS

For teleconference dial-in information, use the password at the following website:

<https://cisco.webex.com/cisco/j.php?J=201710432>

All teleconference 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, 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

Bob Ross called for any patents or pending patents related to the IBIS 3.2, IBIS 4.2, IBIS 5.0, Touchstone 2.0 or ICM 1.1 specifications. No patents were declared.

MEMBERSHIP UPDATE AND TREASURER'S REPORT

Bob Ross reported that there has been no official update since last meeting on membership renewals. 26 members have officially renewed. One ibischk5 parser sale is pending.

REVIEW OF MINUTES AND ARS

Bob Ross called for comments regarding the minutes of the May 12, 2010 European IBIS summit and the May 21, 2010 IBIS Open Forum teleconference. Randy Wolff mentioned that Nokia Siemens Networks (NSN) was not listed as attending the European IBIS summit as noted in the member voting status table. This was fixed in the May 21 minutes. The May 12 minutes were approved with the noted change. The May 21 minutes were approved without changes.

WEB PAGE UPDATES

Syed Huq reported that the address for the IBIS Summit at DAC was corrected. The new teleconference agenda was posted.

MAILING LIST ADMINISTRATION

Mike LaBonte reported that more emails are being rejected recently. He plans to send an occasional email to notify these people that they are not receiving emails.

MODEL LIBRARY UPDATE

Anders Ekholm reported that there have been no updates since the May 4 update.

PRESS UPDATE

None.

MISCELLANY/ANNOUNCEMENTS

None.

OPENS FOR NEW ISSUES

None.

INTERNATIONAL/EXTERNAL ACTIVITIES

- DASC

Michael Mirmak noted that the last meeting was yesterday. The next meeting is in July. No business of interest to IBIS was discussed at the last meeting. The DASC file and e-mail archive may be found at:

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

- P1735 Encryption

No update. The IEEE Study Group on Encryption web reflector archives are found at:

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

-VHDL-AMS meeting

Arpad Muranyi reported that he attended a VHDL-AMS meeting several years ago and brought up the desire to add table model capabilities similar to Verilog-AMS. A new subcommittee just started to discuss this topic, the subcommittee for VHDL-AMS 1076.1 Table-driven modeling. Arpad attended the first meeting June 7. He plans to attend the meetings which are once a month for about the next year. One of the goals will be to be able to read IBIS tables into a VHDL-AMS function. A second goal is to read in Touchstone data. A third goal is to be compatible with the comparable Verilog-AMS function.

-Conferences

Bob Ross noted that the European IBIS summit will probably be held in conjunction with SPI in May, 2011 in Naples, Italy.

TECHAMERICA STATUS

No update.

IEC APPROVAL ACTIVITIES

No update.

SUMMIT STATUS

-DAC Summit Planning

The DAC summit is Tuesday, June 15 in Anaheim, CA. This meeting is also the annual meeting with the election of officers. The meeting starts about 8:30am. Lance Wang noted there are 19 people officially registered at this time. Food will be planned for 20 attendees. 9 presentations are scheduled. Bob Ross will send out a revised agenda, as there were changes to the length and order of presentations.

-China Summit Planning

Bob Ross thanked Lance Wang for his involvement so far with the planning. Funds are being received, and enough funds will be received to go ahead with the meeting. Hotels are being looked at to host the meeting.

-Taiwan Summit Planning

Bob noted that it looks like enough sponsorship money is coming in to begin planning. A local Sigrity contact is helping look for hotel arrangements. Lance mentioned that Michael Mirmak has helped a lot in getting sponsorships. Michael noted that he has contacts willing to assist with helping to make local arrangements in Taipei.

-Japan Summit Planning

Bob noted that two key contacts are not involved with JEITA anymore. However, there is interest from JEITA in hosting a meeting, so planning is beginning.

Michael suggested that the Japan summit be held at the beginning or end of the 3-summit series. One day in between meetings is a minimum. The preference seemed to be having the China meeting first, Taiwan at the end of the week and Japan early the following week. November 9 is the likely date for the China meeting.

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 is continuing to look into the IEEE recommended frequency domain version of FSV. The group may begin working with two IEEE contacts on this topic to look at tools and methodologies. The group is meeting every two weeks. Anders Ekholm will be giving a Quality presentation at the DAC summit. The next meeting will be June 22.

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

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

IBIS MODEL REVIEW TASK GROUP

No update.

ADVANCED TECHNOLOGY MODELING TASK GROUP

Arpad Muranyi reported that the group is meeting regularly and discussing the IBIS-AMI flow diagrams. Issues with this are still being discussed. Progress on IBIS-AMI is being made.

Task group material can be found at:

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

INTERCONNECT TASK GROUP

Michael Mirmak reported that the group is meeting Wednesday mornings at 9AM PT. They last reviewed a final draft of the Touchstone 2.x binary proposal. If no further discussions are needed on the binary proposal, the next topic to discuss will be a proposed Model Connection Protocol modeling standard.

Task group material can be found at:

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

NEW ISSUES

None.

BIRD112 – IBIS-AMI CLOCK_TIMES CLARIFICATION

Arpad Muranyi noted that this is one of several BIRDS being introduced to fix ambiguities and mistakes in the IBIS-AMI specification. This BIRD ensures that model makers know how to return the clock_times vector correctly. The clock_times vector is optional, as not all receivers include a clock recovery circuit. Walter Katz added that the ATM committee approved this BIRD for submission to the Open Forum.

Michael Mirmak motioned for a vote on BIRD112 for inclusion in the next revision of IBIS. The vote passed unanimously with the following vote tally:

Agilent – yes
Cisco – yes
Ericsson – yes
IBM – yes
Intel – yes
IO – yes
LSI Logic – yes
Mentor – yes
Micron – yes
NSN – yes
SiSoft – yes

Teraspeed - yes

TSIRD2 – BINARY FORMAT SUPPORT

Michael Mirmak introduced the BIRD. This BIRD adds binary data representation support to the Touchstone format. A binary format is useful for large files as it can reduce memory storage requirements significantly over the original ASCII file. The keyword [Binary] is added to the specification. Separate precisions can be specified for frequency and data values. Only [Network Data] and [Noise Data] are affected by this new keyword.

Lance Wang asked if this binary format allowed for encryption. Michael noted that this is not intended for encryption. Lance asked about a program for conversion to binary data. Michael noted that there is discussion about including conversion to this format in a Touchstone parser.

Mike LaBonte asked about floating point arrangements for 32 and 64-bit data. He also asked if case sensitivity is required. Radek Biernacki noted that the main Touchstone document specifies case sensitivity and this extends to this TSIRD. Michael noted that the appropriate IEEE specifications could be referenced in relation to handling the floating point arrangements. Walter Katz noted that all computers OS's handle 32-bit precision the same now.

Adge Hawes wondered what is to prevent the binary representation of [End] in binary from messing up the parser. Walter noted that software knows the number of frequency points and how many data points are present, so it should process the data properly before finding the [End] keyword. Adge noted that [End] keyword seems redundant and perhaps should be optional. ASCII editors might mess up files that include both ASCII and binary data. Michael noted that this will have to be discussed when looking at the workflow and converters. Walter added that he did not like the idea of having ASCII data at the beginning of a file, binary data in the middle and one ASCII keyword at the end.

Anders Ekholm asked if anyone had discussed adding compression options to the binary data. Walter noted that one compression standard could be supported. Adge added that most of the compression has already been done with the binary conversion, and the data would have to be re-arranged such as grouping of all S11 instances to add more compression. Walter suggested testing compression with a simple zip file program to see how much reduction occurs.

TSCHK2 BUG STATUS

No BUGs to report.

IBISCHK5 BUG STATUS

BUG117 is a new BUG. Arpad Muranyi reported this BUG that caused ibischk5 to crash. A file with a [Component], but without any pins under [Pin], causes a fatal debug error when [Diff Pin] and [Model] exist under some conditions. The BUG was introduced between ibischk3 and ibischk4 versions. The BUG was classified as Severe severity, Medium priority and Open status.

There are 12 open BUGs currently. Many of these BUGs are being fixed with a new parser

development project.

IBISCHK5 PROJECT

Bob Ross reported that Atul Agarwal is working on the parser fixes. He has been sent a draft parser development agreement. The final product will be an ibischk5.0.4 parser.

PULLUP/PULLDOWN RESISTOR DETECTION PROPOSAL

Greg Edlund stated that the idea originated from system debug issues where a weak pullup and weak pulldown ended up on the same net and conflicted. The proposal is to indicate with a keyword or sub-parameter any pins that include weak pullups or pulldowns. He showed a proposal that added [Weak Pullup] and [Weak Pulldown] keywords to the [Model] section. Eckhard Lenski noted that it would be good to indicate that this applies only to receivers and not drivers.

Bob Ross wondered if this would indicate an actual model for termination or just for informational purposes. Greg wants this to be informational only. Bob suggested all the information be included as sub-parameters under a single keyword instead of separate keywords. Randy Wolff suggested a [Model Info] keyword. Anders Ekholm wondered if this information could be added into a schematic instead of in an IBIS file.

IBIS-ISS – STATUS

Michael Mirmak reported that during the ATM task group call, he got some questions answered. He needs to work with Todd Westerhoff offline on some issues.

The work in progress document can be found in the following directory:

http://www.eda.org/ibis/ibis-iss_wip/

NEW ISSUES

None.

NEXT MEETING

The DAC IBIS Summit will be held June 15, 2010 in Anaheim, CA. No teleconference will be available. The next IBIS Open Forum teleconference will be held July 9, 2010 from 8:00 to 10:00 AM US Pacific Standard Time.

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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 as well as tschk2 parser BUGs. The BUG Report Form for ibischk resides along with reported BUGs at:

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

<http://www.eda.org/ibis/bugs/ibischk/bugform.txt>

The BUG Report Form for tschk2 resides along with reported BUGs at:

http://www.eda.org/ibis/tschk_bugs/

http://www.eda.org/ibis/tschk_bugs/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>

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IBIS CURRENT MEMBER VOTING STATUS

I/O Buffer Information Specification Committee (IBIS)

Organization	Interest Category	Standards Ballot Voting Status	April 23, 2010	May 12, 2010	May 21, 2010	June 11, 2010
Actel	Producer	Inactive	-	-	-	-
Advanced Micro Devices	Producer	Active	X	-	X	-
Agilent Technologies	User	Active	X	X	-	X
Ansys	User	Inactive	-	X	-	-
Apple Computer	User	Inactive	-	-	-	-
Applied Simulation Technology	User	Inactive	-	-	-	-
ARM	Producer	Inactive	-	-	-	-
Cadence Design Systems	User	Inactive	X	-	-	-
Cisco Systems	User	Active	X	-	X	X
Ericsson	Producer	Active	X	X	X	X
Freescale	Producer	Inactive	-	-	-	-
Green Streak Programs	General Interest	Inactive	-	-	-	-
Huawei Technologies	Producer	Inactive	-	-	-	-
Hitachi ULSI Systems	Producer	Inactive	-	X	-	-
IBM	Producer	Active	X	-	X	X
Infineon Technologies AG	Producer	Inactive	-	-	-	-
Intel Corp.	Producer	Active	X	-	X	X
IO Methodology	User	Active	X	X	X	X
LSI	Producer	Active	X	-	X	X
Mentor Graphics	User	Inactive	X	-	-	X
Micron Technology	Producer	Active	X	-	X	X
Nokia Siemens Networks	Producer	Active	X	X	X	X
Samtec	Producer	Inactive	-	-	-	-
Signal Integrity Software	User	Active	X	-	X	X
Sigrity	User	Inactive	-	X	-	-
Synopsys	User	Inactive	-	-	-	-
Teraspeed Consulting	General Interest	Active	X	X	X	X
Texas Instruments	Producer	Inactive	-	-	-	-
Toshiba	Producer	Inactive	-	-	-	-
Xilinx	Producer	Inactive	-	-	-	-
ZTE	User	Inactive	-	-	-	-
Zuken	User	Inactive	-	X	-	-

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 TECHAMERICA 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.