

IBIS Open Forum Minutes

Meeting Date: **April 20, 2012**

Meeting Location: **Teleconference**

VOTING MEMBERS AND 2012 PARTICIPANTS

Agilent	Radek Biernacki*, Yoji Sekine, Fangyi Rao
Altera	David Banas, Hsinho Wu, Masashi Shimanouchi
AMD	(Nam Nguyen)
ANSYS (Ansoft)	(Steve Pytel)
Apple Computer	(Matt Herndon)
Applied Simulation Technology	Norio Matsui
Cadence Design Systems	Terry Jernberg, Jilin Tan, Dennis Nagle Ambrish Varma
Cisco Systems	David Siadat, Mike Sapozhnikov
Ericsson	Anders Ekholm*, Zilwan Mahmood, Mattias Lundquist
Foxconn Technology Group	(Sogo Hsu)
Freescale	(Jon Burnett)
Green Streak Programs	(Lynne Green)
Huawei Technologies	Xiaoqing Dong
IBM	Adge Hawes*, Greg Edlund*
Infineon Technologies AG	(Christian Sporrer)
Intel Corporation	Michael Mirmak*, Udy Shrivastava, Stewart Gilbert Eddie Frie
IO Methodology	Lance Wang
LSI	Brian Burdick
Maxim Integrated Products	Hassan Rafat, Mahbubul Bari
Mentor Graphics	Arpad Muranyi*, Vladimir Dmitriev-Zdorov
Micron Technology	Randy Wolff
Nokia Siemens Networks GmbH	Eckhard Lenski*
QLogic	(James Zhou)
Signal Integrity Software	Walter Katz*, Mike LaBonte*, Todd Westerhoff Akalu Lentiro
Sigrity	Raymond Chen, Yingxin Sun*, Sam Chitwood
Synopsys	Andy Tai, Scott Wedge, Hany Elhak, Ted Mido
Teraspeed Consulting Group	Bob Ross*, Tom Dagostino
Texas Instruments	Casey Morrison, Pegah Alavi, Valerie Chang Modesto Garcia, Karl Muth
Toshiba	(Yasumasa Kondo)
Xilinx	Harry Fu
ZTE	(Huang Min)
Zuken	Michael Schaefer

OTHER PARTICIPANTS IN 2012

Aruba Networks	Amir Motamedi
Avago Technologies	Sanjeev Gupta, Amolak Badesha
Bayside Design	Elliot Nahas
Cavium	Johann Nittmann
Enterasys	Robert Haller
Exar Corporation	Helen Nguyen
Granite River Labs	Jiang Xu, Johnson Tan
Hewlett-Packard	Ting Zhu
High Speed Design Center	Ben Chia
KEI Systems	Shinichi Maeda
Luxshare-ICT	Alan Kinningham, Steven Wong
MK Resolutions	Olga Chervyakova
Nvidia	Eric Hsu
Research In Motion	Yi Cao
Sony	Kenji Yasoda
TechAmerica	(Chris Denham)
University of Illinois	Thomas Comberiate, Jose Schutt-Aine
Vitesse Semiconductor	Sirius Tsang

In the list above, attendees at the meeting are indicated by *. Participants who submit votes by email but do not attend 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
May 11, 2012	205 475 958	IBIS
May 16, 2012	IBIS Summit at SPI2012 – no telephone bridge	

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

<https://ciscosales.webex.com/ciscosales/j.php?J=205475958>

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

Michael Mirmak 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.

REVIEW OF MINUTES AND ARS

Michael Mirmak called for comments regarding the minutes of the March 30, 2012 IBIS Open Forum teleconference. The minutes were approved without changes. The web page needs to be adjusted because the draft copy was also posted.

MEMBERSHIP STATUS AND TREASURER'S REPORT

Bob Ross reported that Maxim Integrated Products has been added to the member list. We will have one drop as Greenstreak Programs will not renew. Most of the regular members have already paid membership fees. Currently 16 have paid. TechAmerica has made no formal statement of membership status. It is estimated that about \$15,300 should be in the operating budget.

WEB PAGE UPDATES

Mike LaBonte reported that minor date corrections were made to the roster page.

MAILING LIST ADMINISTRATION

Mike LaBonte reported that all is well. Michael Mirmak noted that Accellera has moved their mail list to another server. We may wish to find out why and see if another opportunity exists for IBIS.

MODEL LIBRARY UPDATE

Anders Ekholm reported that there has been no new activity.

MISCELLANY/ANNOUNCEMENTS

None.

OPENS FOR NEW ISSUES

Greg Edlund asked to discuss the status of BIRD123. Michael Mirmak said this was scheduled for full discussion today.

INTERNATIONAL/EXTERNAL ACTIVITIES

- IEEE DASC

Michael Mirmak reported that there is not much of interest. A meeting at DAC was not scheduled. The next meeting is in the first week of May.

- VHDL-AMS Table-Driven Models

Arpad Muranyi reported that the group discussed reading from Touchstone files, and he alerted the group to the port ordering differences between Touchstone version 1.0 and 2.0. Arpad emailed a link to the specification to the group. Michael Mirmak noted that it is good to have the Touchstone specification seeing external review. More information can be found at:

http://www.eda.org/twiki/bin/view.cgi/P10761/ProjectsArea#Table_driven_Modeling_Champion_J

- Conferences

SPI2012 (18th IEEE Workshop on Signal and Power Integrity) will be held May 13-16, 2012 in Sorrento, Italy. We are offered a free room on Wednesday afternoon for hosting an IBIS Summit meeting. There may be some technical papers related to IBIS. More information can be found at:

<http://www.spi2012.org>

- EPEPS (21st IEEE Conference on Electrical Performance of Electronic Packaging and Systems) will be held October 21-24, 2012 in Tempe, Arizona. This event occasionally includes IBIS-related content. More information can be found at:

<http://epeps.ece.illinois.edu/>

Official IBIS participation may/may not be planned for all of the events above, though individual papers and discussion on IBIS are encouraged. These are events with refereed submissions, with deadlines either pending or already passed.

- Press Update

None.

IEC APPROVAL ACTIVITIES

Michael Mirmak reported that there is no new information. There may be a meeting soon.

SUMMIT STATUS

- European Summit Planning

Michael Mirmak reported that there have been several notices so far. The meeting will take place May 16, 2012 after the SPI conference in Sorrento, Italy. A room has been donated by the SPI conference for Wednesday afternoon. Lance Wang will be handling sign-ups. Sponsors so far include Micron Technology, Nokia Siemens Networks and Zuken. Bob Ross reported that about 8 have signed up, and several IBIS officers will attend. Bob listed a few of the planned presentations. SPI will have a morning session related to I/O modeling. The full summit agenda will be released May 9.

- DAC Summit Planning

Michael Mirmak reported that the summit meeting will be held all day Tuesday, June 5, 2012 in San Francisco, CA. Details of the meeting room location are to be determined. We should know within a week or so. Mentor Graphics is arranging for the room, which probably will be in a hotel near Marconi Hall. The agenda will go out May 30. We are still interested in additional co-sponsors. Bob noted that the election of officers will take place. Michael encouraged people to consider nominating themselves.

Sponsorship opportunities for all upcoming IBIS summits are available, with sponsors receiving free mentions in the minutes, agenda, and other announcements. This includes upcoming events in Asia. Contact the IBIS Board for further details.

QUALITY TASK GROUP

Mike LaBonte reported that the group reviewed material for a quality-related presentation by Eckhard Lenski, for the upcoming European summit. A number of projects related to IBIS-AMI quality have been affected by ongoing changes to the AMI portions of the IBIS specification, and the group has moved to a schedule of less frequent meetings, usually every four weeks. The next meeting will be May 1, with a review of past quality projects on the agenda.

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

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

MODEL REVIEW TASK GROUP

Michael Mirmak reported that Lynne Green has stepped down from leading this effort. The review process was described. Michael thanked Lynne for her service and asked anyone interested in taking over to contact him. Bob Ross said an EDA vendor would be preferred as chair. End model users would be more likely to be doing business with the IC vendors being reviewed. Michael suggested automatic distribution. Mike LaBonte noted that the email address would receive some spam. Greg Edlund suggested a drop box. He was not aware of any existing service that would provide exactly what he had in mind. Bob noted that half of the models are rejected for not passing IBISCHK. Arpad Muranyi noted that the service might be hampered by lack of NDAs. Michael said one way would be to post the list of reviewers. Bob said the reviewers might change over time, and we should avoid NDA issues.

Arpad asked how many models have been reviewed in the past year, and if we need this service. Mike suggested that the roster might denote EDA vendor people who are willing to receive models for review. Bob said that some reviewers might be hesitant to be identified. Michael noted that the IBIS Model Review chair is an unelected position. Arpad said he would not mind being identified, but would not want to distribute models to other reviewers. Michael asked if others would be willing to review. Greg Edlund said he could review models, and he might be able to help create a dropbox system. Greg felt that checks that are not tool specific are of value. Bob pointed out that the chair tends to improve model quality before distributing to other reviewers. Some EDA vendors support features that others don't, and the variety of feedback is valuable. Michael said that having a chair would improve efficiency by not having each reviewer discover the same simple issues.

ADVANCED TECHNOLOGY MODELING TASK GROUP

Arpad Muranyi reported that meetings have taken place every Tuesday as scheduled. The group voted to table discussion of BIRD 144, as the group needs time for other matters. BIRDS 118 and dependency tables will be discussed in upcoming meetings.

Task group material can be found at:

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

EDITORIAL TASK GROUP

Michael Mirmak reported that meeting times have shifted to 8:00AM Pacific time. More clarifications are still in the works. The format is settling down. A document may be ready for the DAC summit, at least a review draft. Task group documents are posted on the web site for review. Bob asked if we might have access to the TechAmerica tech writer again. Michael took an AR to check.

The IBIS reformatting documentation can be reviewed at:

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

NEW ADMINISTRATIVE ISSUES

None.

BIRD123.2: IBIS-AMI NEW RESERVED PARAMETERS FOR JITTER/NOISE

Walter Katz said the BIRD has had extensive discussion in the ATM group, which now supports the BIRD. The BIRD is written against IBIS 5.0, but will go into 5.2 after 5.1 is approved. Reformatting will be needed. Walter recommended voting on the content only, leaving format for future work. Walter said James Zhou has recommended changes since the BIRD was submitted. Greg Edlund said that to handle jitter the parameter had to be outside the DLL. Walter said this is why they are Info parameters. Bob Ross said the BIRD could be modified, and there is no rush related to format. It is more important to get it right, and there should be a jitter chapter. Walter said the BIRD agrees with Greg's request. Walter suggested a straw man vote simply to gauge the sense of the committee for approval. Radek Biernacki asked if the new changes were before or after the ATM vote. Walter said they were after. Greg asked if the intention is for changes to go into 5.1. Walter said they were not.

Walter showed BIRD 123.2 with new changes. Walter proposed changing "peak" to "half the peak to peak". Arpad Muranyi asked how that is different from "peak". Walter felt that was open to different interpretations. Walter noted a new inconsistency that might call for more ATM discussion. A proposed change from James suggested referencing "ideal time" instead of "clock time" for statistical analysis. Walter said receivers have both CDR and reference clock domains, each with their own distributions. In statistical analysis there is only ideal time. Bob approved of the changes and suggested further review in the ATM group to issue 123.3. Walter agreed. Bob

also suggested that any changes suggested for the future should be considered now. Radek agreed that Walter's "half the peak to peak" language was an improvement. Radek also asked Walter to carefully define ideal time. Walter will add a definition.

BIRD116: ADD IBIS-ISS TO [EXTERNAL MODEL] AND [EXTERNAL CIRCUIT] AS A SUPPORTED LANGUAGE

Discussion was tabled.

BIRD117.3: PARAMETERIZE A_TO_D AND D_TO_A CONVERTERS

Discussion was tabled.

BIRD118.2: ANALOG PARAMETER ASSIGNMENTS

Discussion was tabled.

BIRD121.1: IBIS-AMI NEW RESERVED PARAMETERS FOR DATA MANAGEMENT

Discussion was tabled.

BIRD122: IBIS-AMI NEW RESERVED PARAMETERS FOR ANALOG MODELING

Discussion was tabled.

BIRD124: IBIS-AMI NEW RESERVED PARAMETERS FOR DEPENDENCY TABLES

Discussion was tabled.

BIRD125.1: MAKE IBIS-ISS AVAILABLE FOR IBIS PACKAGE MODELING

Discussion was tabled.

BIRD128: ALLOW AMI_PARAMETERS_OUT TO PASS AMI_PARAMETERS_IN DATA ON CALLS TO AMI_GETWAVE

Discussion was tabled.

BIRD129: ADD "POLARITY" ARGUMENT TO D_TO_A CONVERTERS

Discussion was tabled.

BIRD 131: IBIS-AMI REPEATERS

Discussion was tabled.

BIRD144.3: ADD TOUCHSTONE TO [EXTERNAL MODEL] AND [EXTERNAL CIRCUIT] AS A SUPPORTED LANGUAGE

Discussion was tabled.

BIRD145.2: CASCADING IBIS I/O BUFFERS WITH [EXTERNAL CIRCUIT]S USING THE [MODEL CALL] KEYWORD

Discussion was tabled.

BIRD147: BACK-CHANNEL SUPPORT

Discussion was tabled.

BIRD150: IBIS-AMI NEW RESERVED PARAMETERS FOR DEPENDENCY TABLES

Discussion was tabled.

IBIS SPECIFICATION STATUS

Michael Mirmak showed an editorial group document at a URL appearing in the agenda:

http://www.eda.org/ibis/editorial_wip/ibis-version-change-strategy-v1p9.pdf

This shows the status of new BIRDs with comments on parser impact, etc. The document contains links to the full text of the BIRDs. Bob Ross clarified that BIRDs targeted for 5.2 are shaded in the list. Michael said most of the 5.2 BIRDs are still classified as pending. It was noted that BIRDs 119 and 124 are superseded by other BIRDs.

Arpad Muranyi moved to schedule BIRD124 for a vote at the next meeting, expecting it to be rejected. Walter Katz seconded. There were no objections.

Bob noted that funding for related parser work might be an issue, as payments for parser source code occur only when a major version is released. Radek Biernacki said that standardization might be warranted for IBIS 5.2. Michael noted that a date-based numbering for IBIS has been suggested. Arpad suggested making a list of new features that would be standardized. Bob said we might forego IEC and ANSI standardization for 6.x. Michael noted that we have a standing invitation from IEEE/DASC for their approval process. Bob said we might use that for 5.1. Michael said balloting through TechAmerica would lead to ANSI. Arpad asked if items labeled 5.2 now would become 6.0. Michael said that this is a possibility, noting that this constitutes a shift from being a minor change to a major change.

IBISCHK5 BUG STATUS

Bob Ross said that the parser developer is already working on BIRDs that require parser changes plus some bugs related to IBIS-AMI BIRDs. Bob noted that BUG 133 should be dated 2012, not 2011. For 5.1 AMI file rules will be checked more rigorously. The hope is that it will be

finished this year.

NEW TECHNICAL ISSUES

Michael Mirmak said that currently there is some interest in moving ahead on IBIS-ISS but it will have to wait until people are able to volunteer time.

NEXT MEETING

The next IBIS Open Forum teleconference will be held May 11, 2012 from 8:00 to 10:00 AM US Pacific Time. A vote on BIRD124 is scheduled. The next Open Forum Summit will be held May 16, 2012 at SPI2012. No phone bridge will be available.

Arpad Muranyi moved to adjourn. Anders Ekholm seconded. There were no objections.

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NOTES

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This meeting was conducted in accordance with the TechAmerica Legal Guides and TechAmerica 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 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.eda.org/ibis>

Check the IBIS file directory on eda.org for more information on previous discussions and results:

<http://www.eda.org/ibis/directory.html>

To create an account on the TechAmerica KAVI workspace, check out:

<http://workspace.techamerica.org/kwspub/join/>

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IBIS CURRENT MEMBER VOTING STATUS

I/O Buffer Information Specification Committee (IBIS)

Organization	Interest Category	Standards Ballot Voting Status	February 17, 2012	March 9, 2012	March 30, 2012	April 20, 2012
Advanced Micro Devices	Producer	Inactive	-	-	-	-
Agilent Technologies	User	Active	X	X	X	X
Altera	Producer	Active	-	X	X	-
ANSYS	User	Inactive	-	-	-	-
Apple Computer	User	Inactive	-	-	-	-
Applied Simulation Technology	User	Inactive	-	-	-	-
Cadence Design Systems	User	Active	-	X	X	-
Cisco Systems	User	Inactive	-	-	-	-
Ericsson	Producer	Active	X	-	X	X
Foxconn Technology Group	Producer	Inactive	-	-	-	-
Freescale	Producer	Inactive	-	-	-	-
Green Streak Programs	General Interest	Inactive	-	-	-	-
Huawei Technologies	Producer	Inactive	-	-	-	-
IBM	Producer	Active	X	X	X	X
Infineon Technologies AG	Producer	Inactive	-	-	-	-
Intel Corp.	Producer	Active	X	X	X	X
IO Methodology	User	Active	X	X	X	-
LSI	Producer	Inactive	X	-	-	-
Maxim Integrated Products	Producer	Inactive	-	-	-	-
Mentor Graphics	User	Active	X	X	X	X
Micron Technology	Producer	Inactive	X	X	-	-
Nokia Siemens Networks	Producer	Active	X	-	X	X
QLogic	Producer	Inactive	-	-	-	-
Signal Integrity Software	User	Active	X	X	X	X
Sigrity	User	Active	X	-	X	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	-	-	-	-

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.