



IBIS Open Forum Minutes

Meeting Date: **February 6, 2015**

Meeting Location: **Teleconference**

VOTING MEMBERS AND 2015 PARTICIPANTS

Altera	David Banas
ANSYS	(Steve Pytel)
Applied Simulation Technology	Fred Balistreri, Norio Matsui
Cadence Design Systems	Brad Brim, Joshua Luo, Ken Willis, Joy Li
Ericsson	Anders Ekholm
Huawei Technologies	Xiaoqing Dong
IBM	Adge Hawes*, Luis Armenta
Infineon Technologies AG	(Christian Sporrer)
Intel Corporation	Michael Mirmak*, Todd Bermensolo, Nhan Phan
IO Methodology	Lance Wang*
Keysight Technologies	Radek Biernacki*, Pegah Alavi, Colin Warwick
	Jian Yang, Nicholas Tzou, Heidi Barnes, Dave Larson
	Kyla Thomas
Maxim Integrated Products	Mahbubul Bari, Don Greer, Joe Engert
Mentor Graphics	Arpad Muranyi*, Ed Bartlett, Vladimir Dmitriev-Zdorov
Micron Technology	Randy Wolff*
Qualcomm	Senthil Nagarathinam, Kevin Roselle
Signal Integrity Software	Mike LaBonte, Walter Katz*, Todd Westerhoff
	Mike Steinberger
Synopsys	Ted Mido*, Rita Horner, William Lau, Scott Wedge
	Michael Zieglmeier
Teraspeed Labs	Bob Ross*, Tom Dagostino
Toshiba	(Yasumasa Kondo)
Xilinx	(Raymond Anderson)
ZTE Corporation	(Min Huang)
Zuken	Michael Schaefer, Markus Buecker, Griff Derryberry

OTHER PARTICIPANTS IN 2015

Avago Technologies	Minh Quach, Leif Zweidinger
Bayside Design	Elliot Nahas
Cisco	David Siadat, Rockwell Hsu, Bidyut Sen
Continental Automotive	Felix Goelden, Markus Bebendorf
CST	Stefan Paret
Freescale	Jon Burnett
Galbi Research	Dave Galbi
Independent	Tim Wang Lee
KEI Systems	Shinichi Maeda
Lattice Semiconductor	Xu Jiang

Raytheon
SAE International
Simberian
Vitesse
ZI Consulting

Joseph Aday
Chris Denham
Yuriy Shlepnev
Siris Tsang
Iliya Zamek

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
February 6, 2015	205 475 958	IBIS

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 a.m. to 9:55 a.m. 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

Michael Mirmak declared that a quorum was reached and the meeting could begin.

CALL FOR PATENTS

Michael Mirmak called for any patents or pending patents related to the IBIS 3.2, IBIS 4.2, IBIS 5.1, IBIS 6.0, Touchstone 2.0, IBIS-ISS 1.0 or ICM 1.1 specifications. No patents were declared.

REVIEW OF MINUTES AND ARS

Randy Wolff called for comments regarding the minutes of the January 9, 2015 IBIS Open Forum teleconference. The minutes were approved without changes.

ANNOUNCEMENTS

None.

CALL FOR ADDITIONAL AGENDA ITEMS

None.

MEMBERSHIP STATUS AND TREASURER'S REPORT

Bob Ross reported that IBM is now renewed as a voting member. Avago Technologies has dropped membership. [After the meeting we received a message that Avago Technologies is interested in retaining its membership.] Membership remains at 22 members. The treasury increased to \$42,289. 6 members have renewed so far for 2015. For the DesignCon IBIS Summit, we spent \$5,303 and received \$1,250 in sponsorship from Keysight. One A/V bill is not recorded yet.

WEB PAGE AND MAILING LIST ADMINISTRATION

No update.

LIBRARY UPDATE

No update.

INTERNATIONAL/EXTERNAL ACTIVITIES

- Conferences

The 19th IEEE Workshop on Signal and Power Integrity (SPI 2015) will be held in Berlin, Germany, from May 10-13, 2015. An IBIS Summit meeting is usually held in conjunction with this Workshop. The paper submission deadline is January 31, 2015. More information is available at:

<http://www.spi2015.org/>

- Press Update

None.

ORGANIZATIONAL ACTIVITIES

Michael Mirmak noted that a new Policies and Procedures document was discussed at the DesignCon IBIS Summit. The presentation detailing it is available at:

<http://www.eda.org/ibis/summits/jan15/mirmak.pdf>

The document is an update to the IBIS charter, last updated in 1999. That charter is very out-of-

date. The new document for review can be found at:

http://www.eda.org/ibis/policies/IBIS_policies_procedures_review_draft3.pdf

Major changes include support for electronic voting and establishing a “returning officer” method, changing the definition of quorum to 25%, adding a treasurer position, clarifying membership rules and dues, and adding “future proof” rules.

Randy Wolff mentioned that he would take the draft and format it to look more like our minutes documents. Bob Ross suggested posting the document in a different directory on the website.

Michael noted that we will be calling for comments during the next two meetings, followed by a vote after all comments are addressed. We will need 15 “yes” votes for approval, all cast at the same time. Some number of email votes may need to be accepted if we assume the language for “proxy” voting allows this.

SUMMIT PLANNING AND STATUS

- DesignCon Summary

Michael Mirmak reported that an IBIS Summit was held Friday, January 30, 2015 on the final day of DesignCon 2015. We had about 63 participants from 32 organizations. There were some major topics covered with multiple presentations including backchannel modeling and improved C_comp modeling. Bob Ross noted there were 11 presentations in total. Radek Biernacki commented that there were good presentations and discussions. Michael thanked Keysight Technologies for sponsorship as well as UBM for the room arrangements.

- EPEPS Summit Planning

Bob noted that there is interest in this meeting still, but there needs to be more discussion to determine if we have critical mass to conduct the meeting. EPEPS is taking place October 25-28, 2015 in San Jose, CA.

- SPI Summit Planning

Bob reported that there is interest in having a meeting co-located with the SPI conference in Berlin, Germany on May 13, 2015. Michael Schaefer has sent out an email gauging interest in the event from likely attendees. Bob noted that Zuken has traditionally been a sponsor, but we are open to more sponsorship.

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.

QUALITY TASK GROUP

Bob Ross reported that the group is meeting on Tuesdays at 8:00 a.m. PT. They are continuing to work on the ibischk6 messages spreadsheet. They are occasionally working on bug reports and other parser issues as well.

The work in progress can be reviewed at:

http://www.eda.org/ibis/ibischk6/ibischk_6.0.0_UserGuide_wip1.pdf

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

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

ADVANCED TECHNOLOGY MODELING TASK GROUP

Arpad Muranyi reported that the group is meeting regularly on Tuesdays at 12:00 p.m. PT. They are continuing to discuss backchannel modeling, although it will be on hold as a new BIRD draft from SiSoft is being written. Some other topics such as C_comp modeling will be discussed in upcoming meetings.

Task group material can be found at:

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

INTERCONNECT TASK GROUP

Michael Mirmak reported that the group did not hold a meeting this week. Next week's meeting may also be cancelled due to conflicts with several participants. The main discussion is still the package and on-die interconnect BIRD. Arpad Muranyi requested that Michael finish consolidating the BIRD drafts and post it before the next meeting. The group is typically meeting on Wednesdays at 8:00 a.m. PT.

Task group material can be found at:

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

NEW ADMINISTRATIVE ISSUES

None.

BIRD174.1: QUOTE CHARACTER CLARIFICATIONS

Arpad Muranyi reported that he submitted the BIRD update to address some concerns. Some questions were removed from the end of the document. Arpad tested use of the “” character, and it caused no issues with the parser. This addressed a concern of Ted Mido. Radek Biernacki noted that we should make sure any examples in the IBIS specification conform to the quote character rules this BIRD establishes.

Arpad moved to schedule the BIRD for a vote at the next IBIS Open Forum. Radek Biernacki seconded the motion. There were no objections.

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

Discussion was tabled.

BIRD128.2: ALLOW AMI_PARAMETERS_OUT TO PASS AMI_PARAMETERS_IN DATA ON CALLS TO AMI_GETWAVE

Discussion was tabled.

BIRD145.3: CASCADING IBIS I/O BUFFERS WITH [EXTERNAL CIRCUIT]S USING THE [MODEL CALL] KEYWORD

Discussion was tabled.

BIRD147: BACK-CHANNEL SUPPORT

Discussion was tabled.

BIRD157: PARAMETERIZE [DRIVER SCHEDULE]

Discussion was tabled.

BIRD158.3: AMI TOUCHSTONE ANALOG BUFFER MODELS

Discussion was tabled.

BIRD161.1: SUPPORTING INCOMPLETE AND BUFFER-ONLY [COMPONENT] DESCRIPTIONS

Discussion was tabled.

BIRD163: INSTANTIATING AND CONNECTING [EXTERNAL CIRCUIT] PACKAGE MODELS WITH [CIRCUIT CALL]

Discussion was tabled.

BIRD164: ALLOWING PACKAGE MODELS TO BE DEFINED IN [EXTERNAL CIRCUIT]

Discussion was tabled.

BIRD165: PARAMETER PASSING IMPROVEMENTS FOR [EXTERNAL CIRCUIT]S

Discussion was tabled.

BIRD166: RESOLVING PROBLEMS WITH REDRIVER INIT FLOW

Discussion was tabled.

IBISCHK6 PARSER AND BUG STATUS

Bob Ross confirmed that BUG151 will stay open until a new version of the specification is approved. He had no update on fixing BUG155.

NEW TECHNICAL ISSUES

There was some discussion on open BIRDs. Michael Mirmak noted that some BIRDs will be voted down once new BIRD proposals are approved.

Arpad Muranyi discussed BIRD157. He noted that this BIRD attempts to update some of the capabilities of [Driver Schedule] for addressing some lower speed SerDes buffers. Walter Katz commented that AMI is a much better solution for these buffers.

Arpad asked if we should release a new version of the IBIS specification now with existing approved BIRDs or wait for the package modeling improvements to be finished. Arpad noted that BIRD155.2 is a major improvement from a technical perspective. Michael noted that we are overdue for a specification update if we are trying to follow a one year development schedule. Walter commented that he hasn't seen people asking for support of dependency tables in BIRD155.2. He thought we should spend our energy on the new BIRDs and not on dealing with a specification release. Bob Ross felt like these BIRDs only warrant a minor release and not a major release categorization. Michael asked if we think there is a large amount of work still required on the backchannel and package modeling proposals, taking up to a year of effort, where we won't have resources to work on releasing a new specification. Walter felt that the interconnect BIRD could be completed in about a month. The backchannel BIRD is actually close to completion and will be forwarded to Cadence soon for comment. Both BIRDs might be ready before summer for vote. Arpad commented that he agreed we could probably do a major release later this year.

Michael asked if EDA tools would support a specification release soon as well as another one later this year. Arpad commented that this would allow EDA tools to begin working on support for the minor BIRDs, but they wouldn't put out a major software release without supporting the major BIRDs. Radek Biernacki commented that he could work with either approach.

Arpad reiterated that he thought the dependency table BIRD was very important to get approved. Walter commented that he would not block any attempt to get BIRD155.2 in a specification release such as IBIS 6.1.

Michael noted that we need to make this a discussion topic for the next Open Forum teleconference. Bob took an AR to ask the parser developer about a cost estimate for a parser upgrade. Michael noted we need to discuss support for parser development costs. Arpad took an AR to send an email to the reflector to solicit comments on a new specification release.

NEXT MEETING

The next IBIS Open Forum teleconference meeting will be held February 27, 2015. A vote is scheduled on BIRD174.1. The following IBIS Open Forum teleconference meeting will be held March 20, 2015.

Radek Biernacki moved to adjourn. Arpad Muranyi seconded the motion. There were no objections.

=====

NOTES

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

michael.mirmak@intel.com

Data Center Platform Applications Engineering

Intel Corporation

FM5-239

1900 Prairie City Rd.,

Folsom, CA 95630

VICE CHAIR: Lance Wang (978) 633-3388

lwang@iometh.com

President/CEO, IO Methodology, Inc.

PO Box 2099

Acton, MA 01720

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

rrwolff@micron.com

Principal Engineer, Silicon SI Group Lead, Micron Technology, Inc.

8000 S. Federal Way

Mail Stop: 01-711

Boise, ID 83707-0006

LIBRARIAN: Anders Ekholm (46) 10 714 27 58, Fax: (46) 8 757 23 40

ibis-librarian@eda.org

Digital Modules Design, PDU Base Stations, Ericsson AB

BU Network

Färögatan 6

164 80 Stockholm, Sweden

WEBMASTER: Mike LaBonte

mikelabonte@eda.org

IBIS-AMI Modeling Specialist, Signal Integrity Software

6 Clock Tower Place

Maynard, MA 01754

POSTMASTER: Mike LaBonte

mikelabonte@eda.org

IBIS-AMI Modeling Specialist, Signal Integrity Software

6 Clock Tower Place

Maynard, MA 01754

This meeting was conducted in accordance with ANSI guidance.

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/bugspl.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>

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

IBIS – SAE STANDARDS BALLOT VOTING STATUS

Organization	Interest Category	Standards Ballot Voting Status	Standards Ballot Voting Status			
			December 5, 2014	January 9, 2015	January 30, 2015	February 6, 2015
Altera	Producer	Active	-	X	X	-
ANSYS	User	Inactive	X	-	-	-
Applied Simulation Technology	User	Inactive	-	-	X	-
Cadence Design Systems	User	Active	X	X	X	-
Ericsson	Producer	Inactive	-	-	X	-
Huawei Technologies	Producer	Inactive	-	-	X	-
IBM	Producer	Active	-	-	X	X
Infineon Technologies AG	Producer	Inactive	-	-	-	-
Intel Corp.	Producer	Active	X	X	X	X
IO Methodology	User	Active	X	X	X	X
Keysight Technologies	User	Active	X	X	X	X
Maxim Integrated Products	Producer	Inactive	-	-	X	-
Mentor Graphics	User	Active	X	X	X	X
Micron Technology	Producer	Active	X	X	X	X
Qualcomm	Producer	Active	-	X	X	-
Signal Integrity Software	User	Active	X	X	X	X
Synopsys	User	Active	X	X	X	X
Teraspeed Labs	General Interest	Active	X	X	X	X
Toshiba	Producer	Inactive	X	-	-	-
Xilinx	Producer	Inactive	-	-	-	-
ZTE	User	Inactive	-	-	-	-
Zuken	User	Inactive	-	-	X	-

I/O Buffer Information Specification Committee (IBIS)

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 SAE 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.