IBIS Open Forum Minutes

Meeting Date: **October 23, 2015**
Meeting Location: **Teleconference**

VOTING MEMBERS AND 2015 PARTICIPANTS

Altera	[David Banas], Masashi Shimanouchi, Hsinho Wu*
ANSYS	(Steve Pytel), Curtis Clark*
Applied Simulation Technology	Fred Balistreri, Norio Matsui
Avago Technologies	Minh Quach, Leif Zweidinger
Cadence Design Systems	Brad Brim, Joshua Luo, Ken Willis, Joy Li, Ambrish Varma*
Cisco Systems	David Siadat, Rockwell Hsu, Bidyut Sen
CST	Stefan Paret, Matthias Troescher
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 Gianni Signorini
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, Joe Rayhawk Yan Liang*
Mentor Graphics	Arpad Muranyi*, Ed Bartlett, Vladimir Dmitriev-Zdorov
Micron Technology	Randy Wolff*
Signal Integrity Software	Mike LaBonte*, Walter Katz*, Todd Westerhoff Mike Steinberger
Synopsys	Ted Mido*, Rita Horner, William Lau, Scott Wedge Michael Zieglmeier, Joerg Schweden
Teraspeed Labs	Bob Ross*, Tom Dagostino
Toshiba	(Yasumasa Kondo)
Xilinx	(Raymond Anderson)
ZTE Corporation	(Min Huang), Tao Guo
Zuken	Michael Schaeder, Markus Buecker, Griff Derryberry Ralf Bruening

OTHER PARTICIPANTS IN 2015

Bayside Design	Elliot Nahas
Continental Automotive	Felix Goelden, Markus Bebendorf, Sebastian Groener Stefanie Schatt
eASIC	David Banas*
Freescale	Jon Burnett

Galbi Research	Dave Galbi
Independent	Tim Wang Lee
Instituto de Telecomunicações	Wael Dghais
KEI Systems	Shinichi Maeda
Lattice Semiconductor	Xu Jiang
Leading Edge	Pietro Vergine
Politecnico di Torino	Stefano Grivet-Talocia
Qualcomm	Senthil Nagarathinam, Kevin Roselle
Raytheon	Joseph Aday
SAE International	Chris Denham
Siemens AG	Boris Kogan, Michael Flint
Simberian	Yuriy Shlepnev
Technische Universität Hamburg-Harburg	Jan Preibisch
Vitesse	Siris Tsang
ZI Consulting	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
October 28, 2015	IBIS Summit at EPEPS – no teleconference	
November 9, 2015	Asian IBIS Summit Shanghai – no teleconference	
November 13, 2015	Asian IBIS Summit Taipei – no teleconference	
November 16, 2015	Asian IBIS Summit Tokyo – no teleconference	
November 20, 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

Randy Wolff declared that a quorum was reached and the meeting could begin.

CALL FOR PATENTS

Mike LaBonte called for declaration of 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 October 2, 2015 IBIS Open Forum teleconference. Randy noted that Bob Ross had commented by email. In the membership status report, the $5,403 was payment for the Sherwood Hotel in Taipei, not the hotel in Shanghai. Arpad Muranyi moved to approve the minutes with the noted change. Radek Biernacki seconded the motion. There were no objections, so the minutes were approved.

Randy reviewed ARs from the previous meeting.

1. Mike LaBonte will check with Anders Ekholm to see if he has finished the library update, and if it needs to be posted [AR].
   Mike reported that the checking of links for the library update is still in progress.

ANNOUNCEMENTS, CALL FOR ADDITIONAL AGENDA ITEMS

None.

MEMBERSHIP STATUS AND TREASURER'S REPORT

Bob Ross reported that the treasury balance is $66,586. $500 was received for EPEPS sponsorship. He is expecting $1,500 for Summit sponsorship in early November. Also pending is a DesignCon sponsorship. He is expecting to make payments for EPEPS and the parser developer in the future. Membership stands at 24 members.

WEBSITE ADMINISTRATION

Mike LaBonte noted that he had reported in the last meeting that work on moving to a new website was put on hold. He received an email from Accellera after the meeting saying that they were shutting down the server hosting eda.org, and we'd need to find a new host. We have been interested in the past in obtaining the ibis.org domain. Mike contacted the owner of the domain, and a price of $600 was negotiated to obtain the domain name. A server account was also obtained through BlueHost with a $251.28 payment. This account was a business pro account with an SSL certificate and a dedicated IP address. We will have an HTTPS secure login for administrators. The hosting account may cost us up to $300 annually. Porting the website to ibis.org has happened. Many links had to be updated.

Radek Biernacki commented that accessing the ibischk parser through a particular link did not work. Mike commented that he did do a spider check on the website and has a list of broken links that he needs to review and fix.

Ambrish Varma commented that he would like the home page to include a link to the BIRDs page. He would also like to see other pages include links back to the home page or other pages for ease of use. Mike commented that he should at least rename Working Directories as Site Map [AR]. Mike showed a WordPress site he put together that has some of this functionality.

Bob Ross commented that uploading documents to the new site for the Summits went very smoothly. He also noted that there was an issue with the hosting service where the URL had a "/~ibisorg" at the end. Mike commented that this should be fixed by the hosting service today.

Bob moved to reimburse Mike for the $851.28 expense. Radek seconded the motion. The vote passed with the following vote tally:

Altera – yes
ANSYS – yes
Cadence – yes
IO Methodology – yes
Keysight – yes
Maxim – yes
Mentor – yes
Micron – yes
SiSoft – yes
Synopsys – yes
Teraspeed Labs – yes

Bob moved to authorize the IBIS committee to pay up to $300 per year for a website hosting service. Mike noted that SAE does host sites, and we are looking into possible hosting by SAE in the future. We would incur no expense for SAE hosting. Randy Wolff seconded the motion. The vote passed with the following vote tally:

Altera – yes
ANSYS – yes
Cadence – yes
IO Methodology – yes
Keysight – yes
Maxim – yes
Mentor – yes
Micron – yes
SiSoft – yes
Synopsys – yes
Teraspeed Labs – yes

MAILING LIST ADMINISTRATION

Curtis Clark reported that everything is running smoothly. We have an info@ibis.org address that is available now. Mike LaBonte has been adjusting the SPAM filters to see if this can be made viable. Mike added that on the info page, we have email address for the officers. These are now listed with office titles such as chair@ibis.org. He mentioned that he has gotten the SPAM emails down to about 4 per day for the info@ibis.org email.

Bob Ross added that the minutes of this meeting need to be updated to remove eda.org links. Bob noted that he didn't mind having his personal email address in the minutes. Mike noted that we could put in other email addresses in the minutes.

LIBRARY UPDATE

Mike LaBonte commented that the library update is not ready yet. He may discuss this with Anders Ekholm at the Asian IBIS Summits.

INTERNATIONAL/EXTERNAL ACTIVITIES

- Conferences
None.

- Press Update
None.

SUMMIT PLANNING AND STATUS

- EPEPS Summit Planning
EPEPS is taking place October 25-28, 2015 in San Jose, CA. Wednesday, October 28 will be a Summit in the afternoon at the DoubleTree by Hilton hotel. Bob Ross noted that the meeting room is updated to be in the Monterey room. The program is full. There are 10 presentations and a 2-minute movie. The IBIS Summit is mentioned in the EPEPS program. Keysight Technologies, Mentor Graphics and Synopsys are sponsors.

The website for Electrical Performance of Electronic Packages and Systems is:

http://www.epeps.org/

- Asian IBIS Summit (Shanghai)
The Shanghai meeting will be held Monday, November 9, 2015 at the Parkyard hotel. Huawei Technologies is the major sponsor along with co-sponsors Cadence Design Systems, IO Methodology, Keysight Technologies, Synopsys, Teledyne LeCroy and ZTE Corporation so far. Bob reported that we are looking for more registrations. We need to get people from ZTE, Huawei and Cadence to send lists of people from their companies who are planning to attend. The agenda is being finalized this week. Lance Wang commented that we will have 3 or 4 vendor tables.

- Asian IBIS Summit (Taipei)

The Taipei meeting will be held Friday, November 13, 2015 at the Sherwood hotel. IO Methodology, Keysight Technologies and Synopsys are sponsors so far. Bob commented that the program will have one less presentation than in Shanghai. There is time for open discussion at the end of the program.

- Asian IBIS Summit (Tokyo)
The Tokyo meeting will be held Monday, November 16, 2015. Bob Ross reported that the program is full. The primary sponsors are JEITA and the IBIS Open Forum. He got a list of co-sponsors from JEITA that include ANSYS Corporation, Cadence Design Systems, Cybernet Systems, Keysight Technologies, Mentor Graphics Corporation, Toshiba and Zuken. A JEITA class on basic IBIS will be held in the morning before the Summit and is open to all IBIS summit attendees to attend. It will likely be taught in Japanese. Bob noted that he just got another submission from a Mentor applications engineer. Bob favors papers from Asia over papers from the US, so he'd like to include this paper, but other papers will need to be dropped. Lance Wang noted that he is ok with his paper being dropped.

Mike LaBonte thanked Bob for all his hard work organizing these Summit meetings.

- DesignCon IBIS Summit
DesignCon will be held January 19-21, 2016. Friday, January 22, 2016 is scheduled for the Summit meeting. Mike LaBonte reported that he does not have a final agreement signed with UBM. He has asked for this to be finalized by UBM. Mike asked if there were any preferences for the meeting room. Ambrish Varma commented that there is no DesignCon conference on Friday, so he wondered if Monday could be a better option for travel. Mike noted that by having the meeting on Friday, we do get the advantage of advertising the IBIS Summit during the conference week. Mike added that there are no sponsors yet.

- European IBIS Summit at SPI
An IBIS Summit will be co-hosted with the IEEE Workshop on Signal and Power Integrity (SPI). The Summit will take place on May 11, 2016 in Turin, Italy. Mike reported that he returned a form to sign up as a sponsor. In exchange for the sponsorship payment, we will be setup with a meeting room with food. IBIS is shown as a sponsor on the SPI webpage now.

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
Mike LaBonte reported that the group is meeting on Tuesdays at 8:00 a.m. PT. They have been primarily discussing issues related to the development of the ibischk parser.

The ibischk6 user guide work in progress can be reviewed at:

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

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

ADVANCED TECHNOLOGY MODELING TASK GROUP

Arpad Muranyi reported that the group is meeting regularly on Tuesdays at 12:00 p.m. PT. Next week's meeting is cancelled due to EPEPS. A BIRD was recently finished and submitted to the Open Forum (BIRD179). They are discussing how to clean up the ground language in the IBIS specification. They are also discussing some updates on the re-driver BIRD.

Task group material can be found at:

INTERCONNECT TASK GROUP

Walter Katz reported that the group is meeting on Wednesdays at 8:00 a.m. PT. The group is discussing how to connect power delivery models when there are separate models for the die and package power delivery. Editorial work on the BIRD is continuing.

Task group material can be found at:

NEW ADMINISTRATIVE ISSUES

- Second revision of IBIS Policies and Procedures

Mike LaBonte reported that there has been no update. The document is listed on the IBIS home page, so people can review it and provide comments. He anticipates putting it up to a vote in January.

BIRD179: NEW IBIS-AMI RESERVED PARAMETER SPECIAL_PARAM_NAMES

Arpad Muranyi introduced the BIRD. This BIRD was started in 2011. Model Specific parameters are allowed to be Out, InOut or Info for IBIS AMI models. Some of these parameter types allow for non-specification compliant features that may only work in a single tool. Some previous discussion was around the need for providing methods of innovation with the models. Some new, innovative features might not work in all tools. Recent discussion was around providing a method to indicate which Model Specific parameters may not work in all tools.

Ambrish Varma commented that this BIRD does not have a clear indication that the parser will issue a warning when a special parameter is present in an IBIS AMI model. He thinks a user should be warned when the model may not work in all tools. Arpad responded that the BIRD contains language indicating that the parser should include a Note. Most people in the ATM meeting preferred that ibischk issue a Note instead of a Warning. Bob commented that whether a Note or Warning, all of the special parameters will be printed out by the parser. Radek added that just the presence of the Special_Param_Names parameter indicates the model may not work in all tools. Walter commented that many model makers need to deliver models that are clean and don't produce warnings with ibischk. Ambrish commented that he thinks a Warning is

appropriate to warn the user that the model may generate different results in various tools. Walter disagreed since the parser can still indicate the special parameters with a Note.

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.

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 reported that we have received the parser code last week, but we haven't had a chance to check it thoroughly in order to release it. We can release the code without testing it, wait until testing can be completed before releasing it, or release the source code just to the parser licensees. Mike LaBonte noted that the regression test suite was run by the parser developer. Some messages from this test need to be reviewed. Bob added that the parser developer also shipped release notes, and related to that is a bug note that needs to be processed. This may lead to a 6.1.1 revision parser release. Radek Biernacki commented that it is probably better to wait a few weeks to make sure the code is tested before release.

Bob reported that BUG163 was submitted by Atul Agarwal, the parser developer. The bug found that the checking of [Pin] and [Package Model] for consistency of pins only looks at the first [Package Model] and not any [Alternate Package Models]. Further testing will need to be done to determine if this is a valid bug. Radek suggested deferring the decision on classifying the bug until it is investigated further. Walter Katz clarified that the Error shown in the bug report is valid. So, the parser should be seeing the same error in the second package model, and it is not reported. Randy Wolff agreed that this looks like a valid bug.

Bob moved to classify the bug as Moderate severity, Medium priority and Open status. Walter seconded the motion. There were no objections.

NEW TECHNICAL ISSUES

None.

NEXT MEETING

The next IBIS Open Forum teleconference meeting will be held November 20, 2015. The following IBIS Open Forum teleconference meeting will be held December 18, 2015. The IBIS Summit at EPEPS will be held October 28, 2015. The Asian IBIS Summit in Shanghai will be held November 9, 2015. The Asian IBIS Summit in Taipei will be held November 13, 2015. The Asian IBIS Summit in Tokyo will be held November 16, 2015. No teleconferences will be available for the Summit meetings.

Randy Wolff moved to adjourn. Arpad Muranyi seconded the motion.

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NOTES

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This meeting was conducted in accordance with ANSI guidance.

All inquiries may be sent to ibis-info@freelists.org. Examples of inquiries are:

- To obtain general information about IBIS.
- To ask specific questions for individual response.
- To subscribe to the official ibis@freelists.org and/or ibis-users@freelists.org email lists (formerly ibis@eda.org and ibis-users@eda.org).
- To subscribe to one of the task group email lists: ibis-macro@freelists.org, ibis-interconn@freelists.org, or ibis-quality@freelists.org.

- To inquire about joining the IBIS Open Forum as a voting Member.
- To purchase a license for the IBIS parser source code.
- To report bugs or request enhancements to the free software tools: ibischk6, tschk2, icmchk1, s2ibis, s2ibis2 and s2iplt.

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

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

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

> http://www.ibis.org/bugs/tschk/
> http://www.ibis.org/bugs/tschk/bugform.txt

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

> http://www.ibis.org/bugs/icmchk/
> http://www.ibis.org/bugs/icmchk/icm_bugform.txt

To report s2ibis, s2ibis2 and s2iplt bugs, use the Bug Report Forms which reside at:

> http://www.ibis.org/bugs/s2ibis/bugs2i.txt
> http://www.ibis.org/bugs/s2ibis2/bugs2i2.txt
> http://www.ibis.org/bugs/s2iplt/bugsplt.txt

Information on IBIS technical contents, IBIS participants and actual IBIS models are available on the IBIS Home page:

> http://www.ibis.org/

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

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

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IBIS – SAE STANDARDS BALLOT VOTING STATUS

Organization	Interest Category	Standards Ballot Voting Status	August 21, 2015	September 11, 2015	October 2, 2015	October 23, 2015
Altera	Producer	Active	X	X	X	X
ANSYS	User	Active	-	X	X	X
Applied Simulation Technology	User	Inactive	-	-	-	-
Avago Technologies	Producer	Inactive	-	-	-	-
Cadence Design Systems	User	Active	X	X	-	X
Cisco Systems	User	Inactive	-	-	-	-
CST	User	Inactive	X	-	X	-
Ericsson	Producer	Inactive	-	-	-	-
Huawei Technologies	Producer	Inactive	-	-	-	-
IBM	Producer	Inactive	X	X	-	-
Infineon Technologies AG	Producer	Inactive	-	-	-	-
Intel Corp.	Producer	Inactive	X	X	-	-
IO Methodology	User	Active	-	X	X	X
Keysight Technologies	User	Active	X	X	X	X
Maxim Integrated Products	Producer	Active	-	X	X	X
Mentor Graphics	User	Active	X	X	X	X
Micron Technology	Producer	Active	X	X	X	X
Signal Integrity Software	User	Active	X	X	X	X
Synopsys	User	Active	X	-	X	X
Teraspeed Labs	General Interest	Active	X	X	X	X
Toshiba	Producer	Inactive	-	-	-	-
Xilinx	Producer	Inactive	-	-	-	-
ZTE	User	Inactive	-	-	-	-
Zuken	User	Inactive	-	-	-	-

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.