IBIS Open Forum Minutes

Meeting Date: **July 10, 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
Ericsson	Anders Ekholm
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
CST	Stefan Paret, Matthias Troescher
Freescale	Jon Burnett
Galbi Research	Dave Galbi
Huawei Technologies	Xiaoqing Dong

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
July 31, 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 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 June 12, 2015 IBIS Open Forum teleconference. There were no comments.

Mike LaBonte moved to approve the minutes. Michael Mirmak seconded the motion. There were no objections, so the minutes were approved without changes.

Randy reviewed ARs from the previous meeting.

1. Mike LaBonte took an AR to check with David Banas and see if his AMI code could be leveraged to parse DLLs.
   Mike responded that he did check with David. David said some of the code could be leveraged. The next issue is to decide who would write the software.

ANNOUNCEMENTS, **CALL FOR ADDITIONAL AGENDA ITEMS**

Mike LaBonte noted that Lance Wang was unable to attend today. Mike also mentioned that the agenda is slightly modified from the one posted before the meeting.

OFFICER ELECTION RESULTS

Radek Biernacki reported that 17 votes were cast in the election, which closed on June 15. One was disqualified due to membership not being renewed in time for 2015. Out of the 16 votes, there were no discrepancies and no reported email issues. The Librarian position was contested, and after one abstention, the vote was nearly 50-50. Radek questioned if the vote results should be archived. Bob Ross noted that the results are archived in email. Radek clarified he was talking about individual votes. Bob said he didn't think there was a need to archive the votes.

The official results were:
Chair – Mike LaBonte
Vice Chair – Lance Wang
Secretary – Randy Wolff
Treasurer – Bob Ross
Librarian – Anders Ekholm
Webmaster – Mike LaBonte
Postmaster – Curtis Clark

Mike LaBonte thanked Radek for the excellent job he did as returning officer for the election.

Bob added that we need to have a report from the returning officer before the vote opens if there are no nominations for any position. This is not in the Policies and Procedures document. Mike took an AR to look into adding this to the Policies and Procedures document.

MEMBERSHIP STATUS AND TREASURER'S REPORT
Bob Ross reported that Ericsson's membership payment was received, so they are moved back to member status. There are 22 paid members now so far this year. The treasury balance stands at $63,039. He is expecting membership payments from two more companies and a Summit sponsorship payment. One company is being charged half year membership as a new member.

WEBSITE ADMINISTRATION
Mike LaBonte reported that the pages related to membership such as poster and roster have been updated. The Events page was updated with current information on the three Summits coming up in Asia. The Free tools page was updated to mention SPILite, a free tool from SPISom. This tools page has been reorganized as well.

MAILING LIST ADMINISTRATION
Curtis Clark reported that Mike LaBonte spent time with Curtis on training recently. There is one new member in the ibis-users list. Everything is going smoothly with freelists.

LIBRARY UPDATE
No update.

ORGANIZATIONAL ACTIVITIES
- SAE Activities
Mike LaBonte reported that our parent organization representative at SAE, Chris Denham, is retiring. There is a replacement to be based in Washington, D.C., but we have not met that person yet. The Industry Technologies Consortia (ITC) under SAE will be our official home. We have also received a review from SAE on the Policies and Procedures document. Changes to this document are in progress by the officers. Mike shared a presentation highlighting changes made so far. He proposed a timeline of posting a draft for review by July 17. If there are no issues, we could schedule an email vote during the July 31 teleconference. The vote could open August 3 and end September 10. Bob Ross proposed closing the vote on September 11 during the teleconference. Radek Biernacki noted we haven't scheduled a meeting yet for September 11, so we might say the first teleconference in September. The presentation show is at:

http://www.eda.org/ibis/minutes/min2015/m071015_docs/IBIS_policies_update.pdf

INTERNATIONAL/EXTERNAL ACTIVITIES

- Conferences
The 24th Conference on Electrical Performance of Electronic Packaging (EPEPS) will be held October 25-28, 2015 in San Jose, California. There is usually some IBIS and/or signal integrity related material. More information is available at:

http://www.epeps.org

The Si2Con conference will be held Tuesday, October 6, 2015 in Santa Clara, California. Mike LaBonte thought we might consider having a table there if we have a volunteer. Michael Mirmak asked if anyone would be attending this. There were no responses. Bob Ross noted that we might get charged for a table. Brad Brim noted he is involved in Si2, but he is not involved with the conference and is unlikely to attend. He thought IBIS might get a complimentary table. He took an AR to find out whom to contact about it. Mike said he would make the contact. Michael Mirmak noted there should be some technical content of interest to IBIS. More information is available at:

https://www.si2.org/?page=2129

- 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 would be the date for the Summit if it takes place. Bob Ross noted that the meeting could use the same room as EPEPS. We were invited by Jose Schutt-Aine to hold a Summit meeting in conjunction with EPEPS. The concern is this meeting would be very close to the Asian IBIS Summits, so there could be too much extra work for reviews and logistics. It could be beneficial as a meeting convenient for people in the area, and good for people not attending the Asian IBIS Summits. Bob noted he supports the idea of a Summit, although the extra work for the officers is undesirable. He thinks we might draw about 20 people, similar to the European IBIS Summit. Radek Biernacki asked about the financial implications. Bob responded that the room would be free. We may have to pay for A/V charges and refreshments. The impact would be minimal and sponsorship would be welcome.

Bob moved to vote on holding a Summit on October 28. Randy Wolff seconded the motion. The vote passed with the following vote tally:

Altera – yes
ANSYS – yes
Cadence – abstain
Intel – abstain
Keysight – abstain
Mentor – abstain
Micron – yes
SiSoft – abstain
Teraspeed – yes

Bob plans to handle organizing the meeting.

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

http://www.epeps.org/

- Asia Summit Planning
Mike LaBonte reported that the official dates for the Summit meetings are Monday, November 9 in Shanghai, Friday, November 13 in Taipei and Monday, November 16 in Tokyo. Bob Ross noted that we are getting sponsorship support. Some payments will be made directly to vendors or hotels such as for printing booklets. Some sponsorship payments have been made already. The meeting in Tokyo will be paid for by sponsors arranged for by JEITA. No additional sponsors are needed for Tokyo.

Mike noted that we are actively seeking sponsors for the Summits in Shanghai and Taipei. Potential sponsors can contact Bob or Lance Wang for details. Bob noted one benefit of sponsorship is recognition at the meeting and a company logo posted on the front page of the meeting booklet.

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. There has been recent discussion on the ibischk user guide and the ibischk6 parser development. The user guide may be completed around the same time as the ibischk 6.1.0 parser release.

The ibischk6 user guide 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 currently discussing the topic of how to correct the ground terminology in the IBIS specification. This is being done in preparation for the new interconnect modeling proposal. They still have a backchannel BIRD review pending that is waiting for feedback from Cadence. Other topics of discussion are C_Comp modeling and repeater modeling corrections.

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. They are making progress. They resolved issues related to ground. They are going through the editorial process on the interconnect BIRD.

Task group material can be found at:

EDITORIAL TASK GROUP

Bob Ross reported that the group is meeting on Fridays at 8:00 a.m. PT, with the exception of the weeks when Open Forum meetings are held in the same time slot. They are finishing up the IBIS 6.1 draft specification. All BIRDs have been added. There are details to review in the coming weeks. Arpad Muranyi encouraged further review of the draft 5 document by the editorial committee members and anyone else interested in helping to review it.

Task group material can be found at:

NEW ADMINISTRATIVE ISSUES

- Contract and expenditure for IBISCHK6 development

Bob Ross reported we have a revised quote for parser development by the contractor taking into account the new BIRDs and bugs introduced since the last quote was made. The original quote was $2500, and the new quote is for $3500. There is a proposed delivery date of August 28, 2015. The contract is being reviewed by SAE legal. Chris Denham of SAE contacted Bob recently, and he could not supply a date when the legal review would be finished.

Bob moved to approve the quote for $3500 for parser development. Walter Katz seconded the motion. Radek Biernacki noted that he thought the extra $1000 seemed like a small amount for the extra work. Bob added he thought the quote would be higher. There were no objections to the motion.

Bob asked that discussion for the DesignCon IBIS Summit be added to the agenda. We need to work out details of holding a full day meeting. Mike LaBonte took an AR to contact Michael Mirmak to discuss this further, as Michael has been in contact with UBM already.

BIRD178.2: SPECIFYING BUFFER DIRECTIONALITY FOR AMI

Bob Ross noted major changes included adding the PAM4 parameters to the list. He thought it needed further review in the ATM meeting followed by a vote recommendation from the task

group.

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 noted no new bugs.

NEW TECHNICAL ISSUES

Walter Katz reported that there has been discussion on how to use ground versus node 0 in IBIS. The specification is unclear about what uses local ground of the buffer and what might connect to node 0. The ATM and interconnect task group have discussed this and provided recommendations on how to clean it up. The most significant thing of interest is how to connect C_comp in simulation. There was an email vote by all EDA vendors, and the recommendation was that C_comp should connect to the local ground of the buffer. These changes will be made in a follow-up to IBIS 6.1. Walter noted the new interconnect BIRD will clarify how to use grounds properly so that node 0 is not used. Discussion of handling grounds with legacy package models determined that legacy packages should use the local reference for the package, but there is no plan to make changes to the specification to address this.

Mike LaBonte noted that we would want a BIRD to show the ground changes. Walter agreed that we would edit IBIS 6.1 and submit the changes as a BIRD that could be approved. The BIRD could become IBIS 6.2. Bob Ross added that we might want an IBIS 6.2 specification to include BIRD178.2.

NEXT MEETING

The next IBIS Open Forum teleconference meeting will be held July 31, 2015. The following IBIS Open Forum teleconference meeting will be held August 21, 2015.

Bob Ross moved to adjourn. Brad Brim seconded the motion.

==
NOTES

IBIS CHAIR: Mike LaBonte
> mlabonte@sisoft.com
> IBIS-AMI Modeling Specialist, Signal Integrity Software
> 6 Clock Tower Place
> Maynard, MA 01754

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
>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
>mlabonte@sisoft.com
IBIS-AMI Modeling Specialist, Signal Integrity Software
6 Clock Tower Place
Maynard, MA 01754

POSTMASTER: Curtis Clark
>curtis.clark@ansys.com
ANSYS, Inc.
150 Baker Ave Ext
Concord, MA 01742

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.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

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

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	May 13, 2015	May 22, 2015	June 12, 2015	July 10, 2015
Altera	Producer	Active	-	X	-	X
ANSYS	User	Active	-	X	X	X
Applied Simulation Technology	User	Inactive	-	-	-	-
Avago Technologies	Producer	Inactive	-	-	-	-
Cadence Design Systems	User	Active	-	X	-	X
Cisco Systems	User	Inactive	-	-	-	-
Ericsson	Producer	Inactive	X	-	-	-
IBM	Producer	Inactive	-	X	-	-
Infineon Technologies AG	Producer	Inactive	X	-	-	-
Intel Corp.	Producer	Active	X	-	X	X
IO Methodology	User	Active	-	X	X	-
Keysight Technologies	User	Active	-	X	X	X
Maxim Integrated Products	Producer	Active	-	X	X	-
Mentor Graphics	User	Active	-	X	X	X
Micron Technology	Producer	Active	X	X	X	X
Signal Integrity Software	User	Active	-	X	X	X
Synopsys	User	Active	X	X	X	-
Teraspeed Labs	General Interest	Active	-	X	X	X
Toshiba	Producer	Inactive	-	-	-	-
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.