

IBIS Open Forum Minutes

Meeting Date: **January 11, 2013**

Meeting Location: **Teleconference**

VOTING MEMBERS AND 2013 PARTICIPANTS

Agilent	(Radek Biernacki)
Altera	(David Banas)
ANSYS (Ansoft)	Luis Armenta*
Applied Simulation Technology	(Fred Balistreri)
ARM	(Vipul Patel)
Cadence Design Systems	Terry Jernberg*
Ericsson	Anders Ekholm*
Foxconn Technology Group	(Sogo Hsu)
Freescall	(Jon Burnett)
Huawei Technologies	(Jinjun Li)
IBM	Greg Edlund*
Infineon Technologies AG	(Christian Sporrer)
Intel Corporation	Michael Mirmak*
IO Methodology	Lance Wang*
LSI	(Brian Burdick)
Maxim Integrated Products	(Hassan Rafat)
Mentor Graphics	Arpad Muranyi*
Micron Technology	Randy Wolff*
Nokia Siemens Networks GmbH	(Eckhard Lenski)
QLogic	(James Zhou)
Signal Integrity Software	Walter Katz*, Mike LaBonte*
Synopsys	(Andy Tai)
Teraspeed Consulting Group	Bob Ross*
Texas Instruments	(Pavani Jella)
Toshiba	(Yasumasa Kondo)
Xilinx	(Raymond Anderson)
ZTE	(Huang Min)
Zuken	(Michael Schaefer)

OTHER PARTICIPANTS IN 2013

TechAmerica	(Chris Denham)
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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
January 31, 2013	IBIS Summit at DesignCon – no telephone bridge	
February 22, 2013	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 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 5.1, Touchstone 2.0 or ICM 1.1 specifications. No patents were declared.

REVIEW OF MINUTES AND ARS

Randy Wolff called for comments regarding the minutes of the December 21, 2012 IBIS Open Forum teleconference. The minutes were approved without changes.

MEMBERSHIP STATUS AND TREASURER'S REPORT

Bob Ross reported that for 2013, we have 28 members currently. Invoices for membership have not been sent out yet. He did ask for a financial statement for 2012. Rough calculations based on his numbers show us break even with extra funds from parser sales and Summit payments that haven't been disbursed by TechAmerica. \$28,800 is the TechAmerica allocation for 2012. This is \$2400 per month.

WEB PAGE UPDATES

Mike LaBonte reported that some corrections were made to the poster and roster pages to make sure we have the markers in place for membership status. He has been cleaning up the

web server recently so it will be easier to manage going forward. He also has an ongoing project running spider checks to make sure every web page is accessible.

MAILING LIST ADMINISTRATION

Mike LaBonte reported that there has been no unusual activity. There is still the ongoing issue with Walter Katz's email, but activity from support has died out. Walter could have the option of using another email address.

Michael Mirmak asked if Mike could post some formal formatting recommendations for emails sent to the reflectors. Mike thought he could post some information on the reflector information page. Bob Ross noted that attachments can be troublesome, especially for archiving. Mike felt we need to have a discussion about our policies, since he can only comment on the current settings. For instance, the freelists servers pass attachments, but those emails sometimes take a very long time to be processed due to slow down of the servers.

MODEL LIBRARY UPDATE

Anders Ekholm reported that he added a new company Macronix, and he had a request to add ESMT semiconductor, but he couldn't find any models on their webpage. Mike LaBonte confirmed that the library page has been updated on the website.

MISCELLANY/ANNOUNCEMENTS

None.

CALL FOR NEW ISSUES

None.

INTERNATIONAL/EXTERNAL ACTIVITIES

- Conferences

The 17th IEEE Workshop on Signal and Power Integrity (SPI 2013) will be held May 12-15, 2013 in Paris, France. There will probably be a European IBIS Summit in conjunction with this conference. More information is available at:

<http://spi2013.org>

- Press Update

Bob Ross mentioned a paper in the IEEE Transactions on Components, Packaging and Manufacturing Technology, December 2012, titled "Reduced Order Parametric Behavioral Model for Digital Buffers/Drivers with Physical Support." The paper mentions IBIS buffers and introduces C as a function of V, and adds that to a behavior model, building on the IBIS structure. The paper can be found at:

<http://ieeexplore.ieee.org/xpl/articleDetails.jsp?reload=true&arnumber=6353185>

Greg Edlund mentioned counting three IBIS related papers being presented at DesignCon. Information on the papers can be found on the DesignCon website at:

<http://designcon.com/santaclara/>

IEC APPROVAL ACTIVITIES

Randy Wolff reported that he sent an email to Chris Denham at TechAmerica to notify him of the IEC progress. He also received a response from Dennis Brophy. Dennis confirmed that in-person IBIS representation at an IEC meeting will be needed to advance the IEC approval project. A meeting of the US NC for the TC91 WG13 is coming up in Boston on February 8. Randy inquired if anyone in the Boston area could attend. Lance Wang responded that he would be out of the country. Mike LaBonte responded that he might be able to attend but needed more details about the meeting. Randy took the AR to find out more from Dennis about the meeting.

Bob Ross commented that due to the dual logo process between IEC and IEEE, an affiliation with IEEE might be helpful.

SUMMIT STATUS

-DesignCon 2013 Summit Status

Michael Mirmak reported that the Summit meeting will be Thursday, January 31 in the Mission City M1 room from 8:30am - 5:30pm. This room is in a new wing in the conference center on the first floor. Catering contracts are finalized. Lunch is available to those who register. Lance Wang is the registration coordinator. We have close to a full slate of presentations. Room setup and AV arrangements are in the works. Co-sponsorship opportunities are available. Bob Ross noted that we need the presentations at least a week ahead of time for agenda purposes. Walter Katz noted the Interconnect task group should work on a group presentation detailing recent discussions. Lance reported that we have 22 signups so far.

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 there has not been an official meeting since the last teleconference. The last meeting did not establish a quorum. Bob Ross and Mike did review a presentation for the next quality meeting. They are working on a user guide for people using the ibischk parser. January 22 at 8:00AM PT is the next meeting.

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. They have been discussing analog modeling questions and have established differences in opinion now. They need to define the correct syntax for some of the recent proposals.

Task group material can be found at:

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

INTERCONNECT TASK GROUP

Michael Mirmak reported that group is meeting Wednesdays at 8:00AM PT. There has been overlap in conversations with the ATM task group related to analog modeling. They are looking at defining the stimulus for [Model]s.

The task group documents can be found at:

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

NEW ADMINISTRATIVE ISSUES

Arpad Muranyi asked Michael Mirmak if he was considering combining the ATM and Interconnect meetings again since they are discussing the same topic currently. Michael was interested in feedback on this idea. Walter Katz felt both groups were converging on modeling what happens on die, but they are talking about two different things. In legacy IBIS, on-die interconnect is lumped into the buffer model. The Interconnect task group meeting is talking about what happens at this die interconnect level related to [Model]. In the ATM task group meeting, they are discussing what really defines a [Model]. Walter defined a model as I-V and V-t curves that are simulation measurements or real measurements, existing for an EDA tool to create a model in its simulator. Another interpretation is for Tx models, where the Tx model defines a subcircuit with a stimulus going between 0 and 1 and specific ports, or a model that can be defined other ways. He felt the ATM task group was talking about different issues from the Interconnect task group.

BIRD121.2: IBIS-AMI NEW RESERVED PARAMETERS FOR DATA MANAGEMENT

Walter Katz noted that there have not been any recent changes to the BIRD or comments made online.

Arpad Muranyi moved to vote on the BIRD. Walter seconded. There were no objections. The vote passed with the following vote tally:

ANSYS – abstain

Cadence – yes

Ericsson – yes

IBM – no

Intel – yes

IO Methodology – abstain

Mentor – yes
Micron – yes
SiSoft – yes
Teraspeed – yes

BIRD123.5: IBIS-AMI NEW RESERVED PARAMETERS FOR JITTER/NOISE

Walter Katz noted that the BIRD was updated with Bob Ross' editorial changes. Bob reported that the technical change was to remove Usage Out from Tx_Jitter to conform to Table 1. Also, the Table 1 clause "for information only" was removed. Bob confirmed for Michael Mirmak that the allowed usages for Reserved Parameters in Table 1 are all correct. Bob noted that since Out Usage is being removed from the specification, there needs to be some checking in future versions and maybe more comments to make sure that models don't use Out Usage. Walter Katz added that the EDA tools use this, and all the tool vendors have agreed to the change. He also hasn't seen any models using the Out Usage for Tx_Jitter.

Bob asked about the BIRD template not including the BIRD ID number. Michael noted that currently the chair needs to assign the number and add it to the BIRD template.

Bob moved to vote on the BIRD. Greg Edlund seconded. There were no objections. The vote passed with the following vote tally:

ANSYS – abstain
Cadence – yes
Ericsson – yes
IBM – yes
Intel – yes
IO Methodology – yes
Mentor – yes
Micron – yes
SiSoft – yes
Teraspeed – yes

BIRD116.1: ADD IBIS-ISS TO [EXTERNAL MODEL] AND [EXTERNAL CIRCUIT] AS A SUPPORTED LANGUAGE

Discussion was tabled.

BIRD117.4: PARAMETERIZE A_TO_D AND D_TO_A CONVERTERS

Discussion was tabled.

BIRD118.3: ANALOG PARAMETER ASSIGNMENTS

Discussion was tabled.

BIRD122: IBIS-AMI NEW RESERVED PARAMETERS FOR ANALOG MODELING

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.

BIRD153: PARAMETER TREE KEYWORD

Discussion was tabled.

BIRD154: USING IBIS-AMI LEAF LABELS IN LIST PARAMETERS

Discussion was tabled.

BIRD155: NEW AMI API TO RESOLVE DEPENDENT MODEL PARAMETER

Discussion was tabled.

IBIS SPECIFICATION CHANGE STATUS

Michael Mirmak noted that the document needs to be updated after the recent BIRD vote. The document is available at the following link:

<http://www.eda.org/ibis/docs/ibis-version-change-strategy-v2p4.pdf>

IBISCHK5 BUG STATUS

Michael Mirmak reported that there is actually a mention in the IBIS 5.1 specification that the parser will only check individual I-V tables for non-monotonicities and not combined tables. We may need to write a BIRD to remove this text from the specification, as we shouldn't have parser specification statements in the IBIS specification.

Bob Ross reported that he is working with two people on three cleanup bugs. Yingxin Sun of Cadence found a naming conflict with two modules in the parser. Curtis Clark of Ansys also identified two potential bugs. These three issues are all pending bugs that have not been filed yet.

Michael received a comment from a new IBIS user that had downloaded the parser and made an assumption about usage that caused a problem. Double clicking the executable does not cause anything to happen, since it is designed to be run from the command prompt. Short of developing a GUI, should we at least have some instructions about running the software from the command line? Bob felt a GUI would be a good future enhancement, but some documentation would be a good idea. Anders Ekholm added that creating a GUI would complicate usage from many EDA tools that run the tool in the background and parse the results. Two versions would need to be released. Michael asked if anyone had tested running the parser in Windows 8. Randy Wolff noted that you can still open a command prompt in Windows 8, so it should work ok.

Arpad Muranyi added that we have discussed updating the code from C to a more modern language. If we ever do this, that could be a good opportunity to create an interface.

Mike LaBonte said that you could make a simple change to the executable to print a help file that would show up for about 10 seconds and wait for input. This could print some info about using the program from the command line.

NEW TECHNICAL ISSUES

None.

NEXT MEETING

The next Open Forum Summit will be held January 31, 2013 at DesignCon. No phone bridge will be available. The next IBIS Open Forum teleconference will be held February 22, 2013 from 8:00am to 10:00am US Pacific Time.

Anders Ekholm moved to adjourn. Mike LaBonte 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/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>

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

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

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IBIS – TECHAMERICA STANDARDS BALLOT VOTING STATUS

I/O Buffer Information Specification Committee (IBIS)

Organization	Interest Category	Standards Ballot Voting Status	November 16, 2012	November 30, 2012	December 21, 2012	January 11, 2013
Agilent Technologies	User	Active	X	X	X	-
Altera	Producer	Active	-	X	X	-
ANSYS	User	Active	X	X	-	X
Applied Simulation Technology	User	Inactive	-	-	-	-
ARM	Producer	Inactive	-	-	-	-
Cadence Design Systems	User	Active	X	X	-	X
Ericsson	Producer	Inactive	X	-	-	X
Foxconn Technology Group	Producer	Inactive	-	-	-	-
Freescale	Producer	Inactive	X	-	-	-
Huawei Technologies	Producer	Inactive	-	-	-	-
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	Inactive	-	-	X	-
Maxim Integrated Products	Producer	Inactive	-	-	-	-
Mentor Graphics	User	Active	X	X	X	X
Micron Technology	Producer	Active	-	X	X	X
Nokia Siemens Networks	Producer	Inactive	-	-	-	-
QLogic	Producer	Inactive	-	-	-	-
Signal Integrity Software	User	Active	-	X	X	X
Synopsys	User	Inactive	-	-	-	-
Teraspeed Consulting	General Interest	Active	-	X	X	X
Texas Instruments	Producer	Inactive	-	-	-	-
Toshiba	Producer	Inactive	X	-	-	-
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.