

IBIS Open Forum Minutes

Meeting Date: **October 5, 2012**

Meeting Location: **Teleconference**

VOTING MEMBERS AND 2012 PARTICIPANTS

Agilent	Heidi Barnes, Radek Biernacki*, Yoji Sekine, Fangyi Rao
Altera	David Banas, Hsinho Wu, Masashi Shimanouchi
ANSYS (Ansoft)	Flavio Calvano, Luis Armenta, Dan Dvorscak
Applied Simulation Technology	Norio Matsui
ARM	(Nirav Patel)
Cadence Design Systems	Brad Griffin, Terry Jernberg*, Jilin Tan, Dennis Nagle Ambrish Varma
Ericsson	Anders Ekholm, Zilwan Mahmod, Mattias Lundquist
Foxconn Technology Group	(Sogo Hsu)
Freescale	(Jon Burnett)
Huawei Technologies	Xiaoqing Dong
IBM	Adge Hawes*, Greg Edlund
Infineon Technologies AG	(Christian Sporrer)
Intel Corporation	Michael Mirmak*, Subas Bastola, 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*, Aniello Viscardi, Francesco Madonna Antonio Prisco, Justin Butterfield
Nokia Siemens Networks GmbH	Eckhard Lenski, Evis Minga
QLogic	(James Zhou)
Signal Integrity Software	Walter Katz*, Mike LaBonte*, Todd Westerhoff Akalu Lentiro
Sigrity	Raymond Chen, Yingxin Sun, Sam Chitwood Ben Franklin, Srdjen Djordjevic
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	Masatoshi Abe
Xilinx	Harry Fu
ZTE	(Huang Min)
Zuken	Michael Schaefer

OTHER PARTICIPANTS IN 2012

AMD (Nam Nguyen)

Apple Computer	(Matt Herndon)
Aruba Networks	Amir Motamedi
Avago Technologies	Sanjeev Gupta, Amolak Badesha
Bayside Design	Elliot Nahas
Cavium	Johann Nittmann
Ciena	Kaisheng (Klaus) Hu
Cisco Systems	David Siadat, Mike Sapozhnikov
Enterasys	Robert Haller
Exar Corporation	Helen Nguyen
Granite River Labs	Jiang Xu, Johnson Tan
Hewlett-Packard	Ting Zhu
High Speed Design Center	Ben Chia
Hitachi	Yutaka Uematsu
Instituto de Telecomunicações	Wael Dghais, Hugo Teixeira
JEITA	Atsushi Ishikawa
KEI Systems	Shinichi Maeda
Luxshare-ICT	Alan Kinningham, Steven Wong
MK Resolutions	Olga Chervyakova
Nvidia	Eric Hsu
Politecnico di Torino	Stefano Grivet-Talocia
Research In Motion	Yi Cao
Sony	Kenji Yasoda
ST Microelectronics	Davide Pandini
TechAmerica	(Chris Denham)
Université de Brest	Mihai Telescu, Cherif Diouf
University of Illinois	Thomas Comberiate, José Schutt-Ainé
Vitesse Semiconductor	Sirius Tsang

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 26, 2012	205 475 958	IBIS
November 9, 2012	Asian IBIS Summit - Shanghai – no telephone bridge	
November 13, 2012	Asian IBIS Summit - Hsinchu – no telephone bridge	
November 16, 2012	Asian IBIS Summit - Yokohama – 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

Randy Wolff called for comments regarding the minutes of the September 14, 2012 IBIS Open Forum teleconference. Bob Ross commented that Huawei, Qlogic and ZTE need to be changed to voting member status. The minutes were approved with the noted changes.

MEMBERSHIP STATUS AND TREASURER'S REPORT

Bob Ross reported that we have 29 members, but TechAmerica does not record this number of members yet because of difficulty identifying international payments. We will have 2 Touchstone and one ibischk parsers sold this year. One payment has not been received yet. We technically show a profit right now, but we will be billed \$28,800 by TechAmerica at the end of the year. We will be close to break even.

WEB PAGE UPDATES

Mike LaBonte reported that he is continuing to use Mantis to log recent ibischk5 BUGs. He has also been maintaining the BIRD list too. Mantis is designed for software bug tracking, so there is a lot of stuff on the page we don't have use for. So, we have to add lots of custom fields and the design is just not elegant. He is looking for suggestions for improvement. He wondered about linking Mantis into the top level IBIS webpage. Michael Mirmak asked if we could eliminate any of the Mantis fields we don't need. Mike noted that he hasn't asked anyone about that. There is some control in display, but the form for entering the BIRDS and BUGs cannot change easily. Bob Ross thought we shouldn't move to Mantis unless it is setup as efficiently as the current BUG tracking system. Michael suggested we setup a separate group to examine the alternatives and decide on the best path for BUG and BIRD tracking.

MAILING LIST ADMINISTRATION

Mike LaBonte reported that Walter Katz is still having trouble sending email to the mailing lists. The mailing list administrators seem to be out of ideas for how to fix it.

MODEL LIBRARY UPDATE

Michael Mirmak reported that Anders Ekholm is fixing some broken links in the library and will send out an update before the next teleconference meeting.

MISCELLANY/ANNOUNCEMENTS

Michael Mirmak noted that there are a lot of ibischk5 parser BUGs to discuss, so we will set aside significant time for this.

CALL FOR NEW ISSUES

None.

INTERNATIONAL/EXTERNAL ACTIVITIES

- IEEE DASC

Michael Mirmak reported that there was a meeting October 4. No IBIS-related issues were discussed during the meeting.

- VHDL-AMS Table-Driven Models

Arpad Muranyi reported that he missed the September meeting, so he has no updates. Bob Ross asked if this committee is still relevant to our group. Arpad responded that it is indirectly related since the implementation of tables in VHDL-AMS could allow for use of IBIS models in VHDL-AMS.

Michael Mirmak noted a request to the VHDL-AMS working group about a standardized format for the interface to foreign routines. One solution would make use of the Direct-C work done in SystemVerilog to provide an interface between the simulator and a routine written in C. There could be some ties to AMI if this turns into more than a proposal. Walter Katz noted that this is interesting, but AMS is a time domain simulator and AMI is not. Arpad Muranyi clarified that VHDL-AMS can do frequency domain simulation as well.

More information can be found at:

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

- Conferences

- 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. There is one paper by Fangyi Rao and Colin Warwick on clock jitter that is IBIS related. 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

Bob Ross mentioned a blog posting by Colin Warwick titled “Four things that drove me nuts about IBIS 5.1.” The blog post can be found at:

<http://signal-integrity.tm.agilent.com/2012/four-things-that-drove-me-nuts-about-ibis-5-1/>

IEC APPROVAL ACTIVITIES

Randy Wolff reported that the next TC91 meeting will be October 15-19 in Fukuoka-city, Japan. He has not heard back from Victor Berman about plans for the meeting. Victor said he would probably not be attending the meeting, but he would check with people that are going and make sure we have a plan for addressing the issue of re-standardizing IBIS.

Michael Mirmak suggested contacting Atsushi Ishikawa of JEITA about finding a JEITA member who might be attending the IEC meeting. Randy noted that he wants to hear back from Victor before asking for further help.

SUMMIT STATUS

Michael Mirmak noted that Bob Ross and Lance Wang have been sending out announcements and preliminary agendas are being assembled.

-Asian IBIS Summit – Shanghai, November 9

Bob Ross reported that about 11 presentations are scheduled so far. Arpad Muranyi noted receiving duplicate email messages about the Summits. The co-sponsors are Huawei Technologies (primary), Agilent Technologies, ANSYS, Cadence Design Systems, Intel Corporation, IO Methodology, Synopsys, and ZTE Corporation.

-Asian IBIS Summit – Hsinchu, November 13

The presentation deadline is October 9. Bob noted there are about 8 presentations scheduled so far. The co-sponsors so far for this summit are ANSYS (primary), Agilent Technologies, Cadence Design Systems, Intel Corporation, and IO Methodology.

-Asian IBIS Summit – Yokohama, November 16

Two announcements have gone out so far. JEITA and the IBIS Open Forum are sponsors.

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 is continuing to discuss correlation methods, AMI checklists and updates to golden waveforms. In recent meetings, they discussed correlation and started working on a set of reference waveforms as a test set. The next step is to take proposed correlation metrics and try them out to see if results match what they think is the subjective 'badness' of each waveform. The idea is to try to standardize the IBIS accuracy handbook. The group is meeting Tuesday mornings at 8AM PT every two weeks. The next meeting is October 16.

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 every Tuesday. They are discussing AMI BIRDs, including a reformatting to the IBIS 5.1 format of BIRD123. They should vote on sending BIRD121 to the Open Forum next time. They are nearing completion on BIRD150 and BIRD123. They are also discussing back-channel modeling proposals from Cadence (BIRD147) and are looking for feedback.

Task group material can be found at:

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

INTERCONNECT TASK GROUP

Michael Mirmak reported that the group held a meeting this past Wednesday. Current work focused on ground rules for how much of the specification needs to be adjusted to accommodate new package modeling. There was consensus on no need for radical overhauls to IBIS structures. The next task is to come up with a list of IBIS keywords or constructs that tie in to package modeling but may cause problems with adopting a new package modeling format. The next meeting is Wednesday October 10.

The task group documents can be found at:

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

NEW ADMINISTRATIVE ISSUES

None.

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.

BIRD129: ADD “POLARITY” ARGUMENT TO D_TO_A CONVERTERS

Discussion was tabled.

BIRD153: PARAMETER TREE KEYWORD

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.

BIRD123.3: IBIS-AMI NEW RESERVED PARAMETERS FOR JITTER/NOISE

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.

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 CHANGE STATUS

Michael Mirmak noted no changes were made to the document since the last meeting.

<http://www.eda.org/ibis/docs/ibis-version-change-strategy-v2p3.pdf>

IBISCHK5 PARSER AND BUG STATUS

Michael Mirmak reminded everyone that the IBIS 5.1 parser has been released. He thanked Bob Ross for all his work organizing the parser development so that it could be released so soon after the specification release. Bob noted that the parser developer began working earlier this summer as the specification was being finalized.

Michael noted that two bugs were opened and fixed in the 5.1.0 parser release. The bugs were found and fixed before having a meeting to classify them. The first was filed as BUG135 and described as having no error for ill formed leaves above Reserved Parameters. It was classified as Moderate severity, High priority, and Closed status. The second was filed as BUG136. This described an old EBD test that generated errors. The parser developer issued the bug report. It was classified as Moderate severity, Medium priority and Closed status. This was a bug in the 5.0.7 release.

BUG137 is a new bug related to the 5.1.0 code. The compilation of the code causes many warnings. The next release of the code should remove all but one of the warnings. The bug was classified as Annoying severity, Low priority, and Closed status. There was a private release of the parser, 5.1.1 that fixes this, but it won't officially be fixed until the public 5.1.2 release.

BUG138 is a new bug related to the 5.1.0 code. Walter Katz described that bug as: if you have a list, if the default is the first item in the list, then it generates a warning. If it is not the first item in the list, then it does not generate a warning. Michael noted that Walter may be mischaracterizing the scope of the bug, since the BUG test cases show specific problems with '0' or '0.0' as the default value in a list. The bug was classified as Severe severity, High priority and Closed status. The bug will officially be fixed in the 5.1.2 public release.

Walter noted a second problem with AMI test cases he sent. If a parameter had both a Value and a Default, it should be an error in IBIS 5.1 but not in 5.0. Bob noted that the 5.0 rule was

deprecated since it wasn't well described. The parser should check only to IBIS 5.1 compliance now that the rule is clearly stated in 5.1. Some rules that are different between 5.0 and 5.1 are mentioned in the 5.1 specification, but no specific rule is mentioned in 5.1 about this issue. Michael noted that there are other cases in IBIS of problems like this between versions. Bob clarified that there was an exclusion rule made in this case based on common sense that does have to affect the parser. Walter would like some feedback from IC vendors running the 5.1 parser on their existing 5.0 AMI models. If there are lots of models with both Value and Default, then maybe we need to remove the parser check or not make it an error so that we don't have a large impact on vendor models. Michael asked about flagging this as a warning or caution for 5.0 models. Walter felt it should be an error for 5.1, but for 5.0 he didn't care if it was a warning, caution or no message for an IBIS 5.0 model. Walter said that if the value of Value and the value of Default are different, then it should be an error, but if they are the same value, we shouldn't penalize the model. Michael noted that a new bug report should be filed for this issue. Potentially a BIRD will need to be written to clarify the spec. Bob did not agree with a check on whether the Value and Default have the same value.

Mike LaBonte noted that for the downloadable parser, there was a Linux Redhat 32-bit version in the 64-bit folder. He can create a folder for the 32 bit version, but will start an email conversation about it first.

Michael noted that the 5.1.0 parser source code was released to the parser purchasers and posted online. The 5.1.2 code will be released, addressing all BUGs up to BUG138.

TSCHK PARSER BUG STATUS

Arpad Muranyi introduced BUG2. A Touchstone file missing some common mode descriptors causes the parser to exit and not issue any errors or status messages. Michael Mirmak noted that there are two problems with the file, so two test cases should be created to clarify the exact problem. The BUG was classified as Severe severity, Medium priority and Open status.

Some additional notes will be added to the bug once the exact error is discovered.

NEW TECHNICAL ISSUES

None.

NEXT MEETING

The next IBIS Open Forum teleconference will be held October 26, 2012 from 8:00 to 10:00 AM US Pacific Time. The Asian IBIS Summit in Shanghai will be held November 9, 2012. The Asian IBIS Summit in Hsinchu will be held November 13, 2012. The Asian IBIS Summit in Yokohama will be held November 16, 2012. No phone bridges will be available for the Summits.

Radek Biernacki 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/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 – TECHAMERICA STANDARDS BALLOT VOTING STATUS

I/O Buffer Information Specification Committee (IBIS)

Organization	Interest Category	Standards Ballot Voting Status	August 3, 2012	August 24, 2012	September 14, 2012	October 5, 2012
Agilent Technologies	User	Active	X	X	X	X
Altera	Producer	Active	X	X	X	-
ANSYS	User	Active	X	-	X	-
Applied Simulation Technology	User	Inactive	-	-	-	-
ARM	Producer	Inactive	-	-	-	-
Cadence Design Systems	User	Inactive	X	-	-	X
Ericsson	Producer	Inactive	-	-	-	-
Foxconn Technology Group	Producer	Inactive	-	-	-	-
Freescale	Producer	Inactive	-	-	-	-
Huawei Technologies	Producer	Inactive	-	-	-	-
IBM	Producer	Active	-	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	Active	X	X	-	X
Maxim Integrated Products	Producer	Inactive	-	-	X	-
Mentor Graphics	User	Active	X	X	X	X
Micron Technology	Producer	Active	X	-	X	X
Nokia Siemens Networks	Producer	Inactive	-	X	-	-
QLogic	Producer	Inactive	-	-	-	-
Signal Integrity Software	User	Active	X	X	X	X
Sigrity	User	Inactive	-	-	-	-
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.