IBIS Open Forum Minutes

Meeting Date: **October 26, 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 Schaeder

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 Sapozhnikev
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
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	
November 30, 2012	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 October 5, 2012 IBIS Open Forum teleconference. The minutes were approved without changes.

MEMBERSHIP STATUS AND TREASURER'S REPORT
Bob Ross reported that there is no change from last time. We currently have 29 members. Sigrity currently has separated membership from Cadence, but this will change at the end of the year.

WEB PAGE UPDATES
Mike LaBonte reported that he made a minor change to the task group web page to be more consistent in appearance with other pages.

MAILING LIST ADMINISTRATION
Mike LaBonte reported that the mailing list is gaining subscribers. The issue with Walter Katz not being able to send email to the list is still not resolved, but many people are working on the issue. Adge Hawes noted a similar problem with Walter's emails reaching IBM about a year ago, and he could not find any kind of blacklisting of Walter's name.

MODEL LIBRARY UPDATE
Anders Ekholm reported that he is working on an update and hopes to have a more detailed update for the next teleconference. He has at least one company to add and 13 or so links to

fix.

MISCELLANY/ANNOUNCEMENTS

Bob Ross noted that BIRD123.4 has been submitted for processing. He requested time to discuss this.

CALL FOR NEW ISSUES

None.

INTERNATIONAL/EXTERNAL ACTIVITIES

- IEEE DASC

Michael Mirmak reported that there has been no DASC meeting since the last teleconference. There should be one in early November, probably on November 8. He doesn't expect any IBIS related items to be on the agenda.

- VHDL-AMS Table-Driven Models

Arpad Muranyi reported that there has been no meeting since our last teleconference.

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) was held October 21-24, 2012 in Tempe, Arizona. Arpad Muranyi attended, and he noted that he enjoyed many presentations. There were a few mentions of IBIS-AMI including Fangyi Rao's paper on clock jitter that was awarded the best paper award. There was also a presentation by Intel on silicon optics that he found quite interesting. The optical technology is still operating at a comparable bit rate to electronic wave guide technology using copper at 40-60 Gbps. Michael Mirmak asked if approaches to modeling those interconnects were discussed. Arpad said that they were not, the paper was related more to prototyping the technologies.

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

None.

IEC APPROVAL ACTIVITIES

Randy Wolff reported that a TC91 meeting was held October 15-19 in Fukuoka-city, Japan. He has not heard any feedback from Victor Berman about the meeting. Michael Mirmak suggested contacting Dennis Brophy for updates, possibly with help from Arpad Muranyi. Randy took the

AR to start by contacting Victor Berman again and then to follow up with Dennis if he has trouble contacting Victor.

SUMMIT STATUS
Michael Mirmak thanked Bob Ross and Lance Wang for their help with sending out announcements, setting agendas and printing booklets.

-Asian IBIS Summit – Shanghai, November 9
Bob Ross reported that Teledyne LeCroy is an additional sponsor. Booklets are being printed. Over 100 people have signed up so far and he is expecting 130-140 attendees. The co-sponsors are Huawei Technologies (primary), Agilent Technologies, ANSYS, Cadence Design Systems, Intel Corporation, IO Methodology, Synopsys, Teledyne LeCroy, and ZTE Corporation.

-Asian IBIS Summit – Hsinchu, November 13
Bob reported that there are 10 presentations on the agenda. Booklets are prepared. There are 25 signups so far, but he is expecting many more. The co-sponsors are ANSYS (primary), Agilent Technologies, Cadence Design Systems, Intel Corporation, and IO Methodology.

-Asian IBIS Summit – Yokohama, November 16
Bob reported that he is still waiting for 3 presentations for review, but there should be 8-9 presentations in total. JEITA and the IBIS Open Forum are sponsors.

Randy Wolff asked for help with taking notes at the meetings. Lance responded that he would help with this as well as getting the meeting attendance records.

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 had one meeting recently. David Banas gave a recap of a 2007 IBIS Summit presentation on Feature Selective correlation techniques. They are also building up a set of test waveforms for validating correlation methods. They have a list of further items to cover if more people get involved. The next meeting is October 30.

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 continuing its agenda discussing AMI BIRDs and just sent an updated BIRD123.4 to the Open Forum. They are finishing up some other BIRDs

before moving into repeater and backchannel modeling BIRDs.

Task group material can be found at:

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

INTERCONNECT TASK GROUP

Michael Mirmak reported that the group is continuing to meet almost weekly on Wednesdays. The meeting on October 24 was cancelled due to people attending EPEPS. They are looking at new keywords to support package modeling including reviewing another proposal next week. They are making some progress on key technical decisions.

The task group documents can be found at:

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

NEW ADMINISTRATIVE ISSUES

Michael Mirmak reported that he was recently looking into Mantis to see if some issues with default fields could be addressed. We must decide if keeping these fields is desirable or see if another BUG tracking system that is more customizable is better for our needs (such as Bugzilla). Mike LaBonte hasn't looked into anything recently but he could give access to anyone that wants to try entering a BUG themselves into Mantis. Mike will do more investigating and prepare a report for the next teleconference.

BIRD123.4: IBIS-AMI NEW RESERVED PARAMETERS FOR JITTER/NOISE

Michael Mirmak noted that the new BIRD format is a .docx file, and the BIRD webpage is not recognizing it, and is therefore not including it in the BIRD list. Mike LaBonte will try to fix this issue. Michael noted that he would prefer to have some type of .html file that could include a clickable link to the BIRD. He will create a text file for the short term to get the BIRD listed in the BIRD list.

Arpad Muranyi noted that BIRD123 was officially submitted several months ago and was waiting for the new IBIS 5.1 BIRD format to be introduced. The original content was reformatted and checked to make sure no technical changes were made. Bob Ross noted that he thought there was some rewording and Radek Biernacki noted some clarifications were made. Michael pointed out that in the .docx file some text insertions are highlighted in red due to change tracking. Arpad added that some sections of text were simply moved around. The tracked changes are not necessarily changes from the 123.3 revision, just from the previous draft of the .docx file. Michael noted some draft revision labeling needs to be removed. There will need to be some offline editing to make sure the draft reflects only changes from the previous draft. Bob Ross suggested that the changes are too numerous from the previous text version 123.3, so the BIRD should be re-read as a new version without changes tracked. Michael said that a note should be added that the changes are not tracked between the revisions.

Arpad noted that he felt a short review cycle should be sufficient for reviewing the BIRD. Bob

suggested that this BIRD will need to go to an editorial committee that should look at writing a separate chapter in the IBIS specification covering jitter and noise.

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.

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.

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.

Arpad Muranyi noted that this BIRD is related to BIRD117 and BIRD118, so it is being handled in conjunction with ongoing discussions in the task groups.

IBIS SPECIFICATION CHANGE STATUS

Michael Mirmak noted that no changes were made to the document since the last meeting, but he will update the entry for BIRD123.4 once it is posted.

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

Arpad Muranyi asked about our roadmap for specification releases, such as issuing an IBIS 5.2 version including minor specification related AMI changes. Michael noted that we can call for a vote anytime related to this, but if we wait for the interconnect modeling to finish up, which should not take too long, then we should look at a major revision release next. Arpad wondered if we should lump the AMI features in with analog changes, or if they should be released in two specification releases. Michael added that the parser developer has been released from his contract, so new parser development will require new fundraising, and this will be much easier with a new major specification revision release.

IBISCHK5 PARSER AND BUG STATUS

Michael Mirmak reported that no new bugs have been filed and all bugs have been fixed in the 5.1.2 parser release. Arpad Muranyi asked about changing the default command line settings to include the caution flag. A customer noted seeing different parser results from ibischk than from the built-in parser in a Mentor tool. Arpad had to explain about the command line switches that were different between the parsers. Bob Ross opposed this change since it would vary from previous parser operation. Radek Biernacki suggested putting more description on the website to alert people to command line options when they go to download the parser. Michael noted that if you simply run the parser without any options, it will list out all the options. It might be worth filing a bug as a feature request to allow command line options to search multiple files all at once such as 'ibishk5 *.ibs'.

Arpad noted that he had one parser test case with a [Model] that was used in differential buffers and single ended buffers. This caused lots of caution messages when parsed. Bob noted that this message is a caution as opposed to a warning, since the situation is legal, but it could help notify you of potential problems such as missing a [Diff_pin] entry for two signals. Arpad was confused since the message stated that the [Model] was determined to be differential, yet we don't have truly differential models short of [External Model]s. Radek suggested that the message could be improved. Michael noted that a BIRD might need to be filed to clarify the specification related to the ability of [Model]s to represent both single ended and differential cases. Randy Wolff noted that he thought including both single ended and differential [Receiver Thresholds] parameters in the same [Model] statement might not be permitted. Arpad will check into this statement.

NEW TECHNICAL ISSUES

Walter Katz noted that he wanted to make some clarifications related to his presentation in the last Interconnect task group meeting. On the reflector, Lynne Green noted that one die could be used in many different packages. Also, many different die could be in the same package. So, if you are creating a package model, you'd like it to be independent of the die in it. The difficulty with IBIS is that it ties package and die together. Walter gave a heads up that if people are interested in this issue, they should get involved since the Interconnect task group is close to resolving this issue.

NEXT MEETING

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. The next IBIS Open Forum teleconference will be held November 30, 2012 from 8:00 to 10:00 AM US Pacific Time.

Arpad Muranyi moved to adjourn. Mike LaBonte seconded. 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
 SI Modeling Manager, 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 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/

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

IBIS – TECHAMERICA STANDARDS BALLOT VOTING STATUS

I/O Buffer Information Specification Committee (IBIS)

Organization	Interest Category	Standards Ballot Voting Status	August 24, 2012	September 14, 2012	October 5, 2012	October 26, 2012
Agilent Technologies	User	Active	X	X	X	X
Altera	Producer	Inactive	X	X	-	-
ANSYS	User	Inactive	-	X	-	-
Applied Simulation Technology	User	Inactive	-	-	-	-
ARM	Producer	Inactive	-	-	-	-
Cadence Design Systems	User	Active	-	-	X	X
Ericsson	Producer	Inactive	-	-	-	X
Foxconn Technology Group	Producer	Inactive	-	-	-	-
Freescale	Producer	Inactive	-	-	-	-
Huawei Technologies	Producer	Inactive	-	-	-	-
IBM	Producer	Active	X	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	-
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.