IBIS Open Forum Minutes

Meeting Date: **February 26, 2016**
Meeting Location: **Teleconference**

VOTING MEMBERS AND 2016 PARTICIPANTS

ANSYS	Curtis Clark*, Toru Watanabe
Applied Simulation Technology	(Fred Balistreri)
Broadcom (Avago Technologies)	Bob Miller
Cadence Design Systems	Ken Willis, Brad Brim*
Cisco Systems	Giuseppi Selli, Brian Baek
CST	Stefan Paret
Ericsson	Anders Ekholm, David Zhang, Zilwan Mahmod
GLOBALFOUNDRIES	Steve Parker*
Huawei Technologies	(Jinjun Li)
IBM	Adge Hawes*, Luis Armenta
Infineon Technologies AG	(Christian Sporrer)
Intel Corporation	Hsinho Wu*, Mohammad Bapi, Michael Mirmak*, Masahi Shimanouchi, Todd Bermensolo, Zao Liu, Gong Ouyang, Udy Shrivastava
IO Methodology	Lance Wang*
Keysight Technologies	Radek Biernacki*, Heidi Barnes, Jian Yang, Fangyi Rao, Stephen Slater, Pegah Alavi, Edwin Young
Maxim Integrated Products	Yan Liang*, Don Greer, Thinh Nguyen, Joe Engert, Hock Seon
Mentor Graphics	Arpad Muranyi*, Vladimir Dmitriev-Zdorov, John Angulo
Micron Technology	Randy Wolff
Signal Integrity Software	Mike LaBonte*, Walter Katz*, Todd Westerhoff
Synopsys	Ted Mido*, Kevin Li
Teraspeed Labs	Bob Ross*
Toshiba	(Yasumasa Kondo)
Xilinx	(Raymond Anderson)
ZTE Corporation	(Shunlin Zhu)
Zuken	Michael Schaeder, Amir Wallrabenstein

OTHER PARTICIPANTS IN 2016

Fujitsu Advanced Technologies	Shogo Fujimori
H3C	Bin Cheng, Mao Jun
Independent	Carl Gabrielson
JEITA	Yosuke Kanamaru
John Baprawski, Inc.	John Baprawski
KEI Systems	Shinichi Maeda
Lattice Semiconductor	Dinh Tran, Maryam Shahbazi
MathWorks	Mike Mulligan, Corey Mathis

Northrup Grumman	Alex Golian
NXP	Jon Burnett
Rambus	John Yan
Raytheon	Joseph Aday
SAE International	(Logen Johnson)
SILABTECH	Biman Chattopadhyary
Signal Metrics	Ron Olisar
SPISim	Wei-hsing Huang

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
March 18, 2016	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
Curtis Clark declared that a quorum was reached and the meeting could begin. Mike LaBonte stated that Curtis Clark was taking the minutes.

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 6.1, Touchstone 2.0, IBIS-ISS 1.0 or ICM 1.1 specifications. No patents were declared.

REVIEW OF MINUTES AND ARS

Curtis Clark called for comments regarding the minutes of the February 5, 2016 IBIS Open Forum teleconference. Radek Biernacki moved to approve the minutes. Michael Mirmak seconded the motion. There were no objections.

Curtis reviewed ARs from the previous meeting.

1. Mike LaBonte to remove the Altera logo from the IBIS home page [AR].
   Done.

ANNOUNCEMENTS, **CALL FOR ADDITIONAL AGENDA ITEMS**
Bob Ross noted that we could now formally move GLOBALFOUNDARIES into the "voting members" category with Steve Parker as their representative. He also noted that Adge Hawes remains the IBM representative, and we anticipate that IBM will separately renew their membership.

MEMBERSHIP STATUS AND TREASURER'S REPORT
Bob Ross reported that with GLOBALFOUNDARIES having officially joined as a new member we are now back up to 24 members. Bob noted that we had backfilled some payments that had not been reported previously. Our 2016 treasury currently stands at -$271 dollars. As far as SAE's accounting is concerned, we are really at $4,040. The adjustments stem from payments received in 2015 for 2016 events and one payment in 2016 for a 2015 event. We have 11 paid members so far for 2016. We are waiting for payments and or reminders. Bob noted that we are doing fine. We received some sponsorship money for the Shanghai event and expect more sponsorship payments to come in for various events.

WEBSITE ADMINISTRATION
Mike LaBonte reported that the "new" item hot link at the top of the ibis.org home page now refers to version 6.1.2 of the parser. The page no longer contains a hot link to the most recent IBIS summit. Altera has become part of Intel, so the Altera logo was removed. Mike added the GLOBALFOUNDARIES logo to the home page and the Member Poster page. These pages properly reflect the current membership count of 24. On the Roster page, Altera's entry is now a link to Intel's. GLOBALFOUNDARIES does not yet have a Roster page entry. The ibischk6 parser page has been updated with the most recent information, and the disclaimer regarding known issues in the 6.1.1 version has been removed.

MAILING LIST ADMINISTRATION
Curtis Clark reported that administration of freelists mailing lists was going well. We had net increases of one member in the main IBIS list and two in the ibis-quality list.

LIBRARY UPDATE
No update. Mike LaBonte briefly displayed the library page and noted that he believes we have 86 model suppliers in the list.

INTERNATIONAL/EXTERNAL ACTIVITIES
- Conferences
None.

- Press Update
None.

SUMMIT PLANNING AND STATUS
- European IBIS Summit at SPI 2016
An IBIS Summit will be co-hosted with the IEEE Workshop on Signal and Power Integrity (SPI). The Summit will be a half day event on May 11, 2016 in Turin, Italy. Bob Ross noted that we are in the preliminary planning stages for this. We are a sponsor of SPI and just paid our sponsorship of 1200 Euros. Bob noted that this cost had been reflected in the treasurer's report. We expect sponsorship payments to us to offset this cost. We are still considering presenting a basic IBIS class as part of the half day program. We expect some IBIS presentations from Europe in addition to whatever we provide. Announcements will go out March 7th or 9th, and we may have more detail at that point. Mike LaBonte noted that we would like to get presentations from Europe, and that Bob and Zuken have been helping with this.

- EPEPS, October 2016
Bob noted that at some point we will have to decide on whether to hold a summit in conjunction with EPEPS. He noted that it is in San Diego, CA this year. Last year it was held in San Jose, where a larger IBIS base exists, and turnout at the summit meeting was good. He noted that this decision would be a future agenda item, likely in May or June. Walter Katz said that he felt we should present a paper at EPEPS, but that holding an IBIS summit may not be appropriate.

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 continue to work on matters related to the development of ibischk, bugs reported against it, testing, and the ibischk user's guide. The new topic of .dll checking is discussed below in the ibischk status report.

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

http://www.ibis.org/ibischk6/ibischk_6.1.1_UserGuide_wip1.pdf

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

http://www.ibis.org/quality_wip/

ADVANCED TECHNOLOGY MODELING TASK GROUP

Arpad Muranyi reported that the group is meeting regularly on Tuesdays at 12:00 p.m. PT. The group has been discussing C_comp improvements, a new proposal from Fangyi Rao for general improvements to the AMI flow, and S-parameter syntax related questions that had come up in the interconnect task group. Arpad encouraged interested members to follow the various proposals and provide feedback.

Task group material can be found at:

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

INTERCONNECT TASK GROUP
Michael Mirmak reported that the group is meeting on Wednesdays at 8:00 a.m. PT. The group is now working on draft 30 of the proposal. The major focus of recent meetings has been to ensure that the terminal, node, and port mapping between the interconnect proposal and Touchstone files makes sense, particularly with respect to referencing.

Task group material can be found at:

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

NEW ADMINISTRATIVE ISSUES
- BIRD template revision 1.3
Mike LaBonte presented a proposed new revision of the BIRD template. He noted that version 1.1 had been plain text. The current version, 1.2, had been made simply because it was necessary to convert to a .docx format when the IBIS specification itself adopted the .docx format. For version 1.3 he proposed some content changes aimed at streamlining the BIRD submission and approval process. He noted that this had grown out of discussions that occurred following his "BIDD" proposal that was mentioned during the Chair's Presentation at the DesignCon IBIS summit.

A new "Solution Requirements" table aims to enumerate exactly what the goals are, i.e., what the change needs to accomplish. A new "IBIS Keywords and AMI Reserved_Parameters Affected" table is based on a suggestion by Arpad Muranyi. It aims to give a brief listing of what new parameters are proposed and what existing parameters are modified. Arpad noted that he had suggested the new table because in the past we had seen competing BIRDs with one proposing new keywords and the other relying on or extending existing ones. Mike thought the new version would help streamline discussions by ensuring there was upfront agreement on the goals of any change.

After the review of the proposal, Bob Ross expressed concern that we might get bogged down in discussions about the new Solution Requirements table unless we made it clear that this table was merely informative. He felt the primary focus must still be on exactly what changes were being proposed. Radek Biernacki agreed and noted that several new information sections had been added, but that the primary section describing the exact changes no longer existed. Mike agreed and proposed moving the new table ahead of the "proposed changes" section. Mike will work on modifying the BIRD template proposal and bring it up at the next meeting

[AR]. He noted that this proposal would be modifying the requirements for BIRD submitters. Therefore, he felt we should ensure there was group agreement and have an approval vote before adopting a new version.

- Second revision of IBIS Policies and Procedures
Mike noted that this had been an ongoing board discussion. He noted that this had been held up based on an SAE issue that might have affected our policies, and suggested we push it off until the next meeting. Radek asked whether changes might be adopted in time for the next round of officer elections. Mike said he would pursue this with the board to see if it could happen. Bob noted that the changes with respect to elections were minor anyway.

The document can be found at:

http://www.ibis.org/policies/

BIRD180: REQUIRE UNIQUE PIN NAMES IN [PIN]
Mike LaBonte introduced the BIRD. He said that Walter Katz had noted that the IBIS specification never said you can't have two lines in [Pin] with the same pin name. The parser, however, does in fact check for that and flag an error if a pin name is repeated. Mike noted that you could easily see why software like the parser would typically require uniqueness in this situation.

Arpad Muranyi asked that we hold off on this proposal for the time being. He recalled that issues had come up in the interconnect task group for which one possible solution had been multiple [Pin] entries with the same pin name. He said that those solutions had not been adopted, and that the probability of needing such repeated entries was small. He still asked that the group table this BIRD for the time being.

Bob Ross said that duplicate pin listings would be contrary to the paradigm in which pins are used in many places. [Define Package Model], physical data sheets, etc., all assume a unique physical pin name. Bob noted that this would merely be a cleanup BIRD, since the parser already complied with it.

Mike agreed that repeated pin entries might be very unpleasant to someone writing a parser, but he understood Arpad's suggestion to table.

Radek suggested changing "within" to "under" in the following phrase: "… which shall not be repeated within the same [Pin] keyword". Mike and Bob agreed with this suggestion.

Arpad moved to table the BIRD. Michael Mirmak seconded. There were no objections.

Mike planned to put BIRD 180 on the tabled list [AR].

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 ibischk 6.1.2 had been released. Free executables are available, and source code has been distributed to paid subscribers. He noted that BUGs 172 and 173 had been fixed in this release. He mentioned that he and Mike were investigating a new defect

BUG174. The parser may sometimes output an additional spurious "file not found" if an expected file is missing. They plan to investigate further and formally introduce the issue at the next meeting.

- .dll checking topic:
Mike LaBonte reviewed a document he is preparing as a specification for the parser developer for the .dll checking project. He noted that the only thing the current parser does with the .dll/.so itself is to confirm that the file exists. One section details which combinations of the four possible AMI functions() are valid. He noted that the section regarding actual testing of the function calls is a work in progress, and that parsing out the string to be passed to the .dll might be a large project and outside the scope of a contract with the parser developer.

Radek Biernacki noted that, unlike the current parser that checks text files, this checking cannot be done across platforms. Mike agreed and said one possibility was that all shared objects would be listed, but only test results for that specific platform could be given. Bob noted that this was the reason they are actively looking to introduce a 64 bit windows version of ibischk. Radek noted that the shared object checker might be a stand-alone tool in addition to ibischk.

Mike reminded everyone that quality task group meetings are held Tuesday mornings at 8AM PT.

NEW TECHNICAL ISSUES
Michael Mirmak suggested that we might introduce MD5 or SHA1 hash information for the ibischk parser executables, so that downloaders could be assured they had received what they originally intended. Mike agreed that introducing MD5 or SHA1 hash information for the ibischk parser executables was a good idea and plans to implement it [AR].

NEXT MEETING
The next IBIS Open Forum teleconference meeting will be held March 18, 2016. The following IBIS Open Forum teleconference meeting will be held April 10, 2016.

Michael Mirmak 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 info@ibis.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	January 8, 2016	January 22, 2016	February 5, 2016	February 26, 2016
ANSYS	User	Active	X	X	X	X
Applied Simulation Technology	User	Inactive	-	-	-	-
Broadcom Ltd.	Producer	Inactive	-	X	-	-
Cadence Design Systems	User	Active	-	X	X	X
Cisco Systems	User	Inactive	-	-	-	-
CST	User	Inactive	-	X	-	-
Ericsson	Producer	Inactive	-	X	-	-
GLOBALFOUNDRIES	Producer	Active	-	X	X	X
Huawei Technologies	Producer	Inactive	-	-	-	-
Infineon Technologies AG	Producer	Inactive	-	-	-	-
IBM	Producer	Active	X	X	X	X
Intel Corp.	Producer	Active	X	X	X	X
IO Methodology	User	Active	X	X	X	X
Keysight Technologies	User	Active	X	X	X	X
Maxim Integrated Products	Producer	Active	X	X	X	X
Mentor Graphics	User	Active	X	X	X	X
Micron Technology	Producer	Active	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	-	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:

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