



IBIS Open Forum Minutes

Meeting Date: **June 2, 2017**

Meeting Location: **Teleconference**

VOTING MEMBERS AND 2017 PARTICIPANTS

ANSYS	Curtis Clark*, Toru Watanabe
Applied Simulation Technology	(Fred Balistreri)
Broadcom	Bob Miller
Cadence Design Systems	Brad Brim*, Sivaram Chillarige, Debabrata Das Ambrish Varma
CST	Stefan Paret, Matthias Troescher, Burkhard Doliwa Danilo Di Febo, Alexander Melkozerov
Ericsson	Zilwan Mahmod
GLOBALFOUNDRIES	Steve Parker*
Huawei Technologies	(Jinjun Li)
IBM	Luis Armenta, Adge Hawes*, Greg Edlund
Infineon Technologies AG	(Christian Sporrer)
IO Methodology	Lance Wang*
Keysight Technologies	Radek Biernacki*, Pegah Alavi, Fangyi Rao Stephen Slater, Jian Yang
Maxim Integrated	Joe Engert, Don Greer, Yan Liang, Hock Seow
Mentor, A Siemens Business (formerly Mentor Graphics)	Arpad Muranyi*, Nitin Bhagwath, Praveen Anmula Fadi Deek, Raj Raghuram, Dmitry Smirnov Bruce Yuan, Carlo Bleu
Micron Technology	Randy Wolff*, Justin Butterfield
NXP	(John Burnett)
Qualcomm	Tim Michalka, Kevin Roselle
Raytheon	Joseph Aday
Signal Integrity Software	Mike LaBonte*, Walter Katz, Todd Westerhoff
Synopsys	Kevin Li, Ted Mido*, John Ellis, Scott Wedge
Teraspeed Labs	Bob Ross*
Xilinx	(Raymond Anderson)
Zuken	Ralf Bruening, Michael Schaefer, Alfonso Gambuzza

OTHER PARTICIPANTS IN 2017

Accton	Raul Lozano
ASUS	Nick Huang, Bin-chyi Tseng
Cisco Systems	(Bidyut Sen)
Continental AG	Stefanie Schatt
eASIC	David Banas

Extreme Networks	Bob Haller
Ghent University	Paolo Manfredi
Hamburg University of Technology	Torsten Revschel, Torsen Wendt
IdemWorks	Michelangelo Bandinu
Independent	Dian Yang
Intel Corporation	Michael Mirmak*, Hsinho Wu*, Eddie Frie Gianni Signorini, Barry Grquinovic
John Baprawski, Inc.	John Baprawski
KEI Systems	Shinichi Maeda
Lattice Semiconductor	Maryam Shahbazi, Dinh Tran
Leading Edge	Pietro Vergine
Politecnico di Torino	Claudio Siviero, Stefano Grivet-Talocia, Igor Stievano
SAE International	(Thomas Munns)
Signal Metrics	Ron Olisar
SPISim	Wei-hsing Huang
STMicroelectronics	Fabio Brina, Olivier Bayet
Toshiba	Yasuki Torigoshi
Université Blaise Pascal	Mohamed Toure
Université de Bretagne Occidentale	Mihai Telescu
ZTE Corporation	(Shunlin Zhu)

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
June 23, 2017	624 999 876	IBISfriday11

For teleconference dial-in information, use the password at the following website:

<http://tinyurl.com/zeulerr>

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.

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 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

Randy Wolff called for comments on the minutes of the May 10, 2017 European IBIS Summit at SPI. Brad Brim moved to approve the minutes. Lance Wang seconded the motion. There were no objections. Randy then called for comments on the minutes of the April 21, 2017 IBIS Open Forum teleconference. Arpad Muranyi moved to approve the minutes. Curtis Clark seconded the motion. There were no objections.

Randy reviewed ARs from the previous meeting.

1. Mike LaBonte to create an EDI CON event on the website [AR].
Mike reported this as done.
2. Mike LaBonte to update the SAE contact from Logen Johnson to Tom Munns [AR].
Mike reported this as done.

ANNOUNCEMENTS, CALL FOR ADDITIONAL AGENDA ITEMS

None.

MEMBERSHIP STATUS AND TREASURER'S REPORT

Bob Ross reported that as of May 31 we had 26 members with NXP joining as a new member. As of June 1, three companies have not submitted payment, including Cisco, Intel and ZTE, so they are moved to non-voting status. For two of these companies there are purchase orders in place, but there are delays with the payments due to some bureaucracy issues. We have all the money in for the European IBIS Summit, and our account balance is now at \$18,794 for 2017. Actual cash flow of \$17,044 has been collected in 2017.

WEBSITE ADMINISTRATION

Mike LaBonte reported that changes for the ARs mentioned earlier were made including the addition of the EDI CON event. Arpad Muranyi commented that he was looking for some training materials on the website, but they were hard to find, hidden in another category. He asked if a link could be made on the main page to training materials. Mike will add a link to training materials, maybe under "Support" [AR].

MAILING LIST ADMINISTRATION

Curtis Clark reported that no changes were made in the last three weeks and everything is going smoothly.

LIBRARY UPDATE

No update.

INTERNATIONAL/EXTERNAL ACTIVITIES

- Conferences

EDI CON – Electronic Design Innovation Conference & Exhibition will be held in Boston, MA on September 11-13, 2017. An IBIS Summit at this event is planned. More information is available at:

<http://www.ediconusa.com>

EPEPS – The 26th IEEE Conference on Electrical Performance of Electronic Packaging and Systems will be held in San Jose, CA on October 15-18, 2017. An IBIS Summit at this event is planned. More information is available at:

<http://www.epeps.org/>

- Press Update

None.

- Related standards

None.

SUMMIT PLANNING AND STATUS

- SPI 2017 IBIS Summit Review

The European IBIS Summit at SPI was held on Wednesday afternoon, May 10, 2017. Bob Ross reported that we came out with \$5.90 profit. All sponsorship monies have come in and all payments have been made. About 23 people attended. The SPI conference will be held in Brest, France in 2018. Mike LaBonte thanked Michael Schaefer for running the meeting. ANSYS, CST, Mentor, A Siemens Business, and Zuken were official sponsors.

- EDI CON

EDI CON will be held in Boston, MA on September 11-13, 2017. Mike noted that the program has not been published for EDI CON yet. On the morning of September 13, 2017, the signal integrity track of the conference will have several presentations. The IBIS Summit will be held from 1:00 p.m. to 5:00 p.m. on Wednesday, September 13, 2017. This will overlap with some other presentations that are RF related. Bob asked if lunch or refreshments will be provided by EDI CON. Mike noted he is working on the barter agreement.

- EPEPS

EPEPS will be held in San Jose, CA on October 15-18, 2017. Bob Ross noted that we are planning to hold an IBIS Summit on Wednesday afternoon, October 18, 2017. We plan to leverage off of EPEPS and have them state that the IBIS Summit is an EPEPS sponsored event. This should help us get reduced rates from the hotel.

- Asian IBIS Summits

Bob reported that JEITA has reserved a room and given some possible dates for the Japan IBIS Summit. We will need to pick a date soon and coordinate with Shanghai and Taipei dates. Bob noted there was also a change in leadership and contacts for JEITA.

Bob moved to schedule a vote for the next Open Forum meeting to conduct Summits in Japan, China, and Taiwan in the November timeframe. Randy Wolff seconded the motion. There were no objections.

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. Ongoing discussion is about IBISCHK development.

The IBISCHK6 user guide work in progress can be reviewed at:

http://www.ibis.org/ibischk6/ibischk_6.1.3_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 the redriver flow correction BIRD in the last few meetings. There have been detailed technical discussions but the group has not reached a final conclusion yet.

Task group material can be found at:

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

INTERCONNECT TASK GROUP

Mike LaBonte reported that the group has suspended meetings. The group's work centered on the release of BIRD189. The BIRD is up for discussion in the Open Forum meetings. Bob Ross reported that a BIRD189.4 is expected due to BIRD186 work.

Task group material can be found at:

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

EDITORIAL TASK GROUP

Mike LaBonte reported that meetings are now taking place during the Interconnect task group time slot at 8:00 a.m. PT on Wednesdays. The group is discussing BIRD186.2 and making significant changes for a BIRD186.3 release. This BIRD affects many places in the IBIS specification as well as other current BIRDS.

Task group material can be found at:

http://www.ibis.org/editorial_wip/

NEW ADMINISTRATIVE ISSUES

- Nominations for IBIS Officer Elections

Radek Biernacki reported that the nominations period ended on May 31, and the voting period is now open until June 14. The results will be announced on June 16. Bob Ross noted that any non-member that joins before the vote period ends will be eligible to vote, and their vote will be counted.

- Second revision of IBIS Policies and Procedures

Mike LaBonte noted that we are still waiting for SAE legal review. We were contacted recently by SAE, and he forwarded the draft document to gain visibility.

The Policy and Procedures document can be found at:

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

BIRD158.5: AMI TS4FILE ANALOG BUFFER MODELS

Mike LaBonte reported that a new version of the BIRD (BIRD158.6) is pending, but it has not been submitted yet. Radek Biernacki noted that it would be helpful to have BIRD186 finalized. A final discussion is likely needed in the ATM task group. Arpad Muranyi noted that it was taken off of the ATM discussion list once it was submitted to the Open Forum. He can schedule it for discussion if desired. Radek requested that it be added to the ATM discussion list.

BIRD166.2: RESOLVING PROBLEMS WITH REDRIVER INIT FLOW

Mike LaBonte reported that the BIRD is under discussion in the ATM task group. Bob Ross commented that BIRD166.2 and BIRD158.5 may become the gating factors for an IBIS 7.0 release.

BIRD186.2: FILE NAMING RULES

Mike LaBonte reported that a BIRD186.3 revision is under development in the Editorial task group. Bob Ross noted that terminology defined in BIRD186.3 will be adopted in a BIRD189.4. It would be good to vote on both BIRDS at the same time since there are some interdependencies. One change to the BIRD is to expand rules to many other file formats beyond just .ibs files. Clarifications are made to ASCII file character restrictions, for instance, for specific file types. Michael Mirmak commented that if we don't get all the changes in BIRD186 rolled into other BIRDS, then we could address changes to those BIRDS in editorial

work on IBIS 7.0. Mike questioned if we could include some comments in BIRDS to note that they may be affected by some other BIRDS in progress, so that votes on BIRDS could advance. Randy Wolff commented that BIRD189.3 could advance without waiting for a small editorial dependency on BIRD186. Bob responded that we are not in a hurry to vote on BIRD189.3. Mike noted that by trying to synchronize BIRDS, then we are setting ourselves up for some amount of prejudice where one BIRD is required for another BIRD to pass.

BIRD189.3: INTERCONNECT MODELING USING IBIS-ISS AND TOUCHSTONE

Bob Ross reported that we have adopted some specific file naming terminology in BIRD186, so minor changes will be made to BIRD189.3 to comply with this.

BIRD125.1: MAKE IBIS-ISS AVAILABLE FOR IBIS PACKAGE MODELING

Discussion was tabled.

BIRD145.3: CASCADING IBIS I/O BUFFERS WITH [EXTERNAL CIRCUIT]S USING THE [MODEL CALL] KEYWORD

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.

BIRD181.1: I-V TABLE CLARIFICATIONS

Discussion was tabled.

Bob Ross noted that this BIRD was tabled when it was realized that changes related to this BIRD would ripple through the specification. A lot of work would be required to continue discussions on this BIRD and advance it. Arpad Muranyi asked if the BIRD should be on the ATM task group agenda. Michael Mirmak commented that it may be appropriate for the

Editorial task group. Radek Biernacki commented that some node naming conventions are technical and may be appropriate for the ATM task group. Arpad commented that it could start in the Editorial task group with a low priority. Michael Mirmak agreed to add it to the Editorial task group list.

IBISCHK6 PARSER AND BUG STATUS

Bob Ross reported that several people have suggested some bugs, but no work has been done on these. For instance, Arpad Muranyi suggested that Input models that have pullup and pulldown I-V tables present should cause a warning or error in the parser. Arpad noted that he got messages like 'PROGRAM BUG (line 14435) - Should Not Be Here: mdl.c, 1261' while working on a model, which seemed to be a bug in the parser.

Bob reported that the parser developer is expected to deliver a parser for review on Monday. If all goes well, we'll expect a release of code to the parser licensees in about a week, followed by compiled parser code.

NEW TECHNICAL ISSUES

None.

NEXT MEETING

The next IBIS Open Forum teleconference meeting will be held June 23, 2017. A vote to approve the Asian IBIS Summits is scheduled. The following IBIS Open Forum teleconference meeting is tentatively scheduled on July 14, 2017.

Michael Mirmak moved to adjourn. Arpad Muranyi seconded. The meeting adjourned.

NOTES

IBIS CHAIR: Mike LaBonte

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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>

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

SAE STANDARDS BALLOT VOTING STATUS

Organization	Interest Category	Standards Ballot Voting Status	April 21, 2017	May 10, 2017	May 12, 2017	June 2, 2017
ANSYS	User	Active	X	-	X	X
Applied Simulation Technology	User	Inactive	-	-	-	-
Broadcom Ltd.	Producer	Inactive	X	-	-	-
Cadence Design Systems	User	Inactive	X	-	-	X
CST	User	Inactive	-	X	-	-
Ericsson	Producer	Inactive	-	X	-	-
GLOBALFOUNDRIES	Producer	Active	X	-	X	X
Huawei Technologies	Producer	Inactive	-	-	-	-
IBM	Producer	Active	X	-	X	X
Infineon Technologies AG	Producer	Inactive	-	-	X	-
IO Methodology	User	Active	X	-	X	X
Keysight Technologies	User	Active	X	-	X	X
Maxim Integrated	Producer	Inactive	-	-	-	-
Mentor, A Siemens Business	User	Active	X	X	X	X
Micron Technology	Producer	Active	X	-	X	X
NXP	Producer	Inactive	-	-	-	-
Qualcomm	Producer	Inactive	-	-	-	-
Raytheon	User	Inactive	-	-	-	-
Signal Integrity Software	User	Active	X	-	X	X
Synopsys	User	Active	X	-	X	X
Teraspeed Labs	General Interest	Active	X	-	X	X
Xilinx	Producer	Inactive	-	-	-	-
Zuken	User	Inactive	-	X	-	-

Criteria for SAE 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 standards 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.