



IBIS Open Forum Minutes

Meeting Date: **January 27, 2017**

Meeting Location: **Teleconference**

VOTING MEMBERS AND 2017 PARTICIPANTS

ANSYS	Curtis Clark*
Broadcom	Bob Miller*
Cadence Design Systems	Brad Brim*
Cisco Systems	(Bidyut Sen)
CST	(Leonardo Sassi)
Ericsson	(Anders Ekholm)
GLOBALFOUNDRIES	Steve Parker
Huawei Technologies	(Jinjun Li)
IBM	Luis Armenta*, Adge Hawes*
Infineon Technologies AG	(Christian Sporrer)
Intel Corporation	Michael Mirmak*, Hsinho Wu*
IO Methodology	Lance Wang*
Keysight Technologies	Radek Biernacki*
Maxim Integrated	(Mahbubul Bari)
Mentor Graphics	Arpad Muranyi*
Micron Technology	Randy Wolff*
Signal Integrity Software	Mike LaBonte*, Walter Katz*
Synopsys	Kevin Li, Ted Mido*
Teraspeed Labs	Bob Ross*
Xilinx	(Raymond Anderson)
ZTE Corporation	(Shunlin Zhu)
Zuken	(Michael Schaeder)

OTHER PARTICIPANTS IN 2017

SAE International (Logen Johnson)

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
February 3, 2017	IBIS Summit at DesignCon – no teleconference	

February 17, 2017

See meeting invite

IBISfriday11

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

See meeting invitation email.

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 January 6, 2017 IBIS Open Forum teleconference. Bob Ross noted we can remove the "(Avago Technologies)" note on the Broadcom line in the participants list. Curtis Clark moved to approve the minutes. Bob seconded the motion. There were no objections.

Randy Wolff reviewed ARs from the previous meeting.

1. Mike LaBonte to upload the latest draft of the IBIS Policies and Procedures document to the IBIS website [AR].
Mike reported this as done.
2. Mike LaBonte to record editorial fixes in BIRD188 to the "Known Issues" document [AR].
Mike reported this as done.

ANNOUNCEMENTS, CALL FOR ADDITIONAL AGENDA ITEMS

Mike LaBonte noted BIRD189 was not on the agenda but will be introduced today.

MEMBERSHIP STATUS AND TREASURER'S REPORT

Bob Ross reported that we have 22 members. Final numbers for 2016 including SAE expenses are not in. Our account is at \$19,946 for 2016. Actual cash flow of \$17,385 has been collected in 2016. Our account is at \$3,650 for 2017. Actual cash flow of \$1,900 has been collected in 2017. We expect another sponsor for DesignCon, many membership renewals and some possible new members and a parser purchase.

WEBSITE ADMINISTRATION

Mike LaBonte reported that the website is updated with a DesignCon notice and the updated IBIS Policies and Procedures document. Under free tools, we previously received a contribution of SPILite from SPISim. SPISimAMI has been added, offered as a standalone command line tool for AMI model evaluation. This is equivalent to test tools for AMI models uploaded by Cadence and SiSoft.

MAILING LIST ADMINISTRATION

Curtis Clark reported we had one issue with getting some spurious bounce backs, but the problem was resolved somehow before it could be reported to freelists.

LIBRARY UPDATE

No update.

INTERNATIONAL/EXTERNAL ACTIVITIES

- Conferences

None.

- Press Update

None.

- Related standards

IEEE DASC at DVCon 2017

Michael Mirmak noted there is a DASC meeting at DVCon in Santa Clara on Thursday, March 2, 2017. Michael will attend, but there will not be an opportunity to present any IBIS related information.

SUMMIT PLANNING AND STATUS

- DesignCon 2017 IBIS Summit

The DesignCon IBIS Summit will be held in Santa Clara, California on Friday, February 3, 2017. Lance Wang reported we have 50 registered attendees so far. Radek Biernacki asked if we have a plan for paper copies. Mike LaBonte noted that the agenda will be printed and presentations will be posted on the web on the day of the Summit. Radek asked if the presentations could be posted one day ahead of time. Mike did not see an issue with doing this. Cadence Design Systems, CST, Keysight Technologies, Mentor Graphics and Synopsys are sponsors.

- SPI 2017 IBIS Summit

The European IBIS Summit at SPI will be on Wednesday afternoon, May 10, 2017. Bob Ross noted that planning will begin after DesignCon.

- Other Summits

Bob noted we are considering doing an IBIS Summit at EDICon. Mike added that we have a meeting arranged during DesignCon with Janine Love to discuss this idea.

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. The group's discussion focuses on achieving quality through the best IBISCHK code.

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 recently discussed the backchannel BIRD and is discussing the redriver BIRD flow.

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 majority of the work on the Interconnect BIRD is completed and will be introduced as BIRD189 in this meeting.

Task group material can be found at:

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

EDITORIAL TASK GROUP

Mike LaBonte reported that the group remains suspended. Meetings will resume once a new IBIS specification draft of IBIS 6.2 is ready to review. Some items that the group was looking into resolving were not BIRDS. One item was related to updating figures, and Mike will look into this after DesignCon. Once resumed, meetings will take place at 8:00am PT on Fridays that the IBIS Open Forum does not meet.

Task group material can be found at:

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

NEW ADMINISTRATIVE ISSUES

- Second revision of IBIS Policies and Procedures

Mike LaBonte reported that the latest revision of the IBIS Policies and Procedures document was submitted to SAE for legal review. Mike asked for the review to be completed by the end of February. This gives time to hopefully ratify it before the next officer elections.

The document can be found at:

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

BIRD147.5: BACK-CHANNEL SUPPORT

Bob Miller introduced the changes from the last draft. BIRD147.5 changes BCI_GetWave_Block_UI to BCI_Message_Interval_UI and the Type of both it and BCI_Training_UI from UI to Integer. It softens the linkage between it and the EDA-determined AMI_GetWave_block_size while retaining a mechanism for the model to inform the EDA tool of the optimal messaging interval. It expands how the EDA tool will interact with BCI_Message_Interval_UI to ultimately decide the size of the block size. Radek Biernacki commented this is a significant improvement. He noted one sentence in the description of the BCI_Training_UI describes a workaround when there is an issue. He is not particularly concerned, just thinking that sentence could be deleted. Mike LaBonte suggested this be moved to the ATM task group for discussion and potential update. Bob Miller commented that he is ok with the sentence removal, but he is disappointed with the BIRD not going into IBIS 6.2. Mike commented that the decision on which BIRDS will be in 6.2 and 7.0 has not yet been made.

BIRD187.2: FORMAT AND USAGE OUT CLARIFICATIONS

Michael Mirmak commented that changes incorporate comments by Curtis Clark and Radek Biernacki.

Bob Ross moved to schedule a vote on BIRD187.2 at the next Open Forum teleconference. Radek Biernacki seconded the motion. There were no objections.

BIRD188.1: EXPANDED RX NOISE SUPPORT FOR AMI

Mike LaBonte noted that a vote was held on BIRD188 in the last meeting. However, a revote is needed as there were agreed upon changes to the BIRD that were not incorporated before the vote. One minor change is removing capitalization on the word "where" after an equation and clarifying a sentence on Rx_GaussianNoise. Radek Biernacki commented that the changes were minor and probably didn't need a vote. Bob Ross commented that he thought the process should be followed for an official vote.

Bob Ross moved to schedule a vote on BIRD188.1 at the next Open Forum teleconference. Radek Biernacki seconded the motion. There were no objections.

BIRD189: INTERCONNECT MODELING USING IBIS-ISS AND TOUCHSTONE

Michael Mirmak introduced the BIRD. The BIRD adds the capability to use IBIS-ISS and Touchstone models for package and on-die interconnect. Some details will be introduced at the DesignCon IBIS Summit. There are a few minor editorial comments still to be made, so a revised BIRD is expected soon. Comments are welcome.

Bob Ross commented that he thought the author should be changed to “Walter Katz and the Interconnect Task Group”. Michael noted that Walter Katz was the original author of the BIRD in 2014.

Bob asked if the Interconnect task group might suspend meetings. Michael noted we will have comments to review as well as an update to Touchstone to discuss. Randy Wolff commented that the group can also start discussing an update to the EBD syntax.

Bob noted that some figures in the BIRD should be updated if possible. Michael responded that we want to show in the specification a physical representation of where the pins, pads and buffer connections are. Mike LaBonte commented that if anyone can contribute clearer figures those would be welcome.

BIRD158.3: AMI TOUCHSTONE ANALOG BUFFER MODELS

No discussion.

BIRD166: RESOLVING PROBLEMS WITH REDRIVER INIT FLOW

Bob Ross noted that this BIRD was discussed recently in the ATM task group. Mike LaBonte added that there is an alternate proposal from Fangyi Rao that has not been submitted for full discussion in the ATM task group. Eventually, one BIRD may be supported, but probably not both.

Bob moved to table discussion on BIRD166. Arpad Muranyi seconded the motion. There were no objections.

BIRD186: FILE NAMING RULES

Mike LaBonte stated that a decision on this BIRD could wait for a while. Bob Ross noted he has an AR to provide comments on changes to this BIRD. Mike asked if this BIRD is on the agenda for the ATM task group. Arpad Muranyi commented that the BIRD was discussed in ATM before it was submitted as an official BIRD. Bob noted that he will submit his changes for review to either the Open Forum or the ATM task group. Mike suggested the comments be submitted to the ATM task group.

Arpad moved to table discussion on BIRD186. Radek Biernacki seconded the motion. There

were no objections.

Michael Mirmak commented that some of the tabled BIRDs may be superseded by BIRD189, so he recommended these BIRDs be reviewed to see if they could be voted down in favor of BIRD189 or note if BIRD189 needs updates to address concepts in these BIRDs.

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.

IBISCHK6 PARSER AND BUG STATUS

Bob Ross reported that two bugs are being worked on but have not been issued as official bugs yet. The latest user guide for IBISCHK version 6.1.3 is uploaded on the IBIS website. Mike LaBonte noted that there are many comments on error codes that are missing still. It is a large task to add all the comments, and it may need to be a paid effort. Bob added that some comments are also incomplete.

NEW TECHNICAL ISSUES

None.

NEXT MEETING

The DesignCon IBIS Summit will be held February 3, 2017. No teleconference will be available. The next IBIS Open Forum teleconference meeting will be held February 17, 2017. Votes on BIRD187.2 and BIRD188.1 are scheduled. The following IBIS Open Forum teleconference meeting will tentatively be held March 10, 2017.

Bob Ross moved to adjourn. Arpad Muranyi seconded. The meeting adjourned.

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/bugspl.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	December	December	January 6,	January 27,
			2, 2016	16, 2016	2017	2017
ANSYS	User	Active	X	X	X	X
Broadcom Ltd.	Producer	Active	X	-	X	X
Cadence Design Systems	User	Active	X	X	X	X
Cisco Systems	User	Inactive	-	-	-	-
CST	User	Inactive	-	-	-	-
Ericsson	Producer	Inactive	-	-	-	-
GLOBALFOUNDRIES	Producer	Inactive	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
Maxim Integrated	Producer	Inactive	-	-	-	-
Mentor Graphics	User	Active	X	X	X	X
Micron Technology	Producer	Active	-	X	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
Xilinx	Producer	Inactive	-	-	-	-
ZTE	User	Inactive	-	-	-	-
Zuken	User	Inactive	-	-	-	-

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.