IBIS Open Forum Minutes

Meeting Date: **June 7, 2019**
Meeting Location: **Teleconference**

VOTING MEMBERS AND 2019 PARTICIPANTS

ANSYS	Curtis Clark*, Marko Marin, Miyo Kawata Toru Watanabe, Akira Ohta
Applied Simulation Technology	(Fred Balistreri)
Broadcom	(Yunong Gan)
Cadence Design Systems	[Brad Brim], Ambrish Varma, Ken Willis Yingxin Sun, Zhen Mu*
Cisco Systems	(Stephen Scearce)
Dassault Systemes (CST)	Stefan Paret
Ericsson	Anders Ekholm, Anders Vennergrund, Felix Mbairi Hui Zhou, Inmyung Song, Mattias Lundqvist Wenyan Xie, Zilwan Mahmod
GLOBALFOUNDRIES	Steve Parker*
Google	Zhiping Yang, Songping Wu
Huawei Technologies Futurewei Technologies	Antonio Ciccomancini Albert Baek
Infineon Technologies AG	Anke Sauerbrey
Instituto de Telecomunicações	(Abdelgader Abdalla)
Intel Corporation	Hsinho Wu, Michael Mirmak*, Nhan Phan Kinger Cai, Eddie Frie, Wendem Beyene Yuanhong Zhao
Keysight Technologies	Radek Biernacki*, Hee-Soo Lee, Stephen Slater Jian Yang, Ming Yan, Pegah Alavi
Maxim Integrated	Joe Engert, Yan Liang, Charles Ganal
Mentor, A Siemens Business	Arpad Muranyi*, Raj Raghuram, Weston Beal Vladimir Dmitriev-Zdorov, Mikael Stahlberg Todd Westerhoff, Ed Bartlett, Nitin Bhagwath
Micron Technology	Randy Wolff*, Justin Butterfield
NXP	(John Burnett)
SiSoft (MathWorks)	Mike LaBonte*, Graham Kus, Walter Katz
SPISim	Wei-hsing Huang*
Synopsys	Ted Mido, Adrien Auge, John Ellis, Sam Sim Scott Wedge
Teraspeed Labs	Bob Ross*
Xilinx	Ravindra Gali
ZTE Corporation	(Shunlin Zhu)
Zuken	(Michael Schaeder)

Zuken USA   Lance Wang

OTHER PARTICIPANTS IN 2019

Apollo Giken Co.	Satoshi Endo
Hitachi	Norio Chujo
IBM	Michael Cohen*, Greg Edlund
IO Methodology	[Lance Wang]
John Baprawski, Inc.	John Baprawski
KEI Systems	Shinichi Maeda
Marvell	Johann Nittmann
OmniVision	Sirius Tsang
Qualcomm	Kevin Roselle
Raytheon	Joseph Aday
Renesas	Genichi Tanaka
Ricoh Co.	Kazuki Murata
SAE ITC	(Jose Godoy)
Seagate	Alex Tain
Signal Metrics	Ron Olisar
Silvaco Japan Co.	Yoshiharu Furui
Socionext	Megumi Ono, Motoaki Matsumura, Yuji Nakagawa
Toshiba	Imi Hitoshi
Toshiba Electronic Devices & Storage Corp.	Atsushi Tomishima

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 28, 2019	624 227 121	IBISfriday11

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

  http://tinyurl.com/y7yt7buz

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

Mike LaBonte declared that a quorum was reached.

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

Mike LaBonte called for comments on the minutes of the May 17, 2019 IBIS Open Forum teleconference. Radek Biernacki moved to approve the minutes. Curtis Clark seconded the motion. There were no objections.

Mike reviewed ARs from the previous meeting.

1. Michael Mirmak to find out if the IEEE P2401 meeting at DAC is open to anyone [AR]. Michael reported the meeting would not be open. If you have not attended an IEEE meeting before, you can only use one free meeting attendance. So, you should not attend more than once without becoming a member. So, in essence, the meeting was closed.
2. Mike to add tentative dates for the Asian IBIS Summits to website [AR]. Mike reported this as done. Bob Ross noted the years changed but not the dates.
3. Mike to send vote solicitation for Asian IBIS Summits [AR]. Mike reported this was sent out.
4. Mike to send vote solicitation for IBISCHK parser source code price increase [AR]. Mike reported this as done. Michael Cohen said he did not see the email. Mike suggested Michael go to the freelists archive for the mailing list to compare the list of emails sent out to the emails Michael actually received. Curtis noted that Michael is subscribed.
5. Mike to send vote solicitation for BIRD199 [AR]. Mike reported this as done.
6. Bob Ross to alert current licensees of IBISCHK6 parser source code regarding price vote [AR]. Bob reported he sent out the message. He will send out a message if the price increase is approved.
7. Bob Ross to update BUG203 to specify using a caution message [AR]. Bob reported this as done.
8. Bob Ross to update BUG204 to specify using a caution message [AR]. Bob reported this as done.
9. Bob Ross to update BUG205 to specify IBIS version applicability of the new check [AR]. Bob reported this as done.

ANNOUNCEMENTS, CALL FOR ADDITIONAL AGENDA ITEMS

None.

MEMBERSHIP STATUS AND TREASURER'S REPORT

Bob Ross reported that we have 25 members as of June 1, dropped from 28. IO Methodology has been dropped. Raytheon is dropped. Temporarily, IBM has been moved to a non-voting status until the payment is received. The payment is in progress, so voting status should be restored next week. We have $12,546 cash flow for 2019 and a $15,296 adjusted balance for 2019. We made a payment for the European IBIS Summit. The voting quorum remains at 7.

Michael Cohen noted he expects to see payment made for IBM by June 12.

WEBSITE ADMINISTRATION

Mike LaBonte reported that the Touchstone survey was posted on the webpage, but the link is now removed since the survey is closed. The keyword tree diagram for IBIS Version 7.0 was corrected for some small mistakes.

MAILING LIST ADMINISTRATION

Curtis Clark reported a couple of Yahoo email addresses start failing simultaneously, but the accounts seem to have gone inactive. So, there is no indication of any issues.

LIBRARY UPDATE

No update.

INTERNATIONAL/EXTERNAL ACTIVITIES

- Conferences

SPI2019 – the 23rd IEEE Workshop on Signal and Power Integrity will be held in Chambéry, France on June 18-21, 2019. An IBIS Summit will be held after the event. More information is available at:

https://spi2019.sciencesconf.org/

EDI CON is a web-based conference held September 10-12, 2019. The third day has some SI/PI content with some prominent experts giving presentations. More information is available at:

https://www.edicononline.com/

- Press Update

Mike LaBonte reported that Eric Bogatin interviewed him about Touchstone. Eric wrote an article about Touchstone that is somewhat historical but also discusses IBIS efforts on determining the future of Touchstone. The article will be in the Signal Integrity Journal, but it is not published yet.

Mike also wrote an article about the release of IBIS 7.0 for the Signal Integrity Journal. The

article has been submitted, but he does not know if/when it will be published.

- Related standards
IEC 63055/IEEE 2401, JEITA "LPB"
Michael Mirmak reported this week is DAC in Las Vegas. On Thursday, the Design Automation Standards committee met. On Monday, there was a meeting of P2401 with a brief review of LPB draft 4. The draft was approved to forward to IEEE. The Editorial changes are closed from P2401. The Mandatory Editorial Committee of IEEE will now review the document. It will then go to the balloting phase, where it will open up for further comments, then eventual IEEE approval. The final document may be approved in early 2020.

Michael did inform the P2401 team that editorial work on IBIS was still taking place. LPB does support the Interconnect syntax and EBD. He made them aware of work on EMD. They are also now aware of the IBIS Summit meeting in Tokyo in November. P2401 is planning on a presentation at the Summit about the new content in LPB.

Bob Ross asked if LPB references IBIS 7.0. Michael confirmed it does. Bob asked if LPB references Touchstone 2.0. Michael confirmed it does. Touchstone, IBIS EBD and IBIS package can be called out by name in LPB. Terminals and terminal types from IBIS 7.0 can be called out. Mike noted one of their formats is parallel to EBD. Michael described how the document attempts to reference hierarchical flavors of models and multiple formats to accomplish similar things in different contexts. It may be helpful to ask for an example of 2401 LPB syntax to be shared at the IBIS Summit in Tokyo, since it is difficult to obtain the complete document. If an example can be shown, it may become clearer to people how it is used.

SUMMIT PLANNING AND STATUS
- IEEE SPI Summit
SPI will be held in Chambéry, France on June 18-21, 2019. An IBIS Summit is planned in the afternoon of June 21, 2019. The conference will be held in Room B of Le Manège. Mentor and Zuken are sponsors.

Bob Ross noted SPI has put our program into their booklet. The last two programs are longer than anticipated, so our program may be different from what is published in their booklet. The final agenda should be sent out early next week. Mike noted the conference organizer Mihai Telescu has been very helpful to us.

- Asia Summits
Mike will fix the dates shown on the website [AR]. Bob noted rooms have been reserved for Shanghai on November 1, 2019, Taipei on November 4, 2019 $8,000, and Tokyo on November 8, 2019.

Bob moved to vote for the Asian IBIS Summits with Shanghai on November 1, 2019 with costs not to exceed $8,000, Taipei on November 4, 2019 with costs not to exceed $8,000, and Tokyo on November 8, 2019 with costs not to exceed $500. Randy Wolff seconded the motion. There were no objections.

The roll call vote tally was:

ANSYS – yes
Cadence – yes
GLOBALFOUNDRIES – yes
Infineon Technologies AG – yes (by email)
Intel – yes
Keysight – yes
Mentor – yes
Micron – yes
SiSoft – yes
SPISim – yes
Synopsys – yes (by email)
Teraspeed Labs – yes
Zuken – yes (by email)

The roll call vote concluded with a vote tally of Yes – 13, No – 0, Abstain – 0. The vote passed.

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 topic of discussion is IBISCHK. There are also discussions about the possibility of an IBIS-ISS parser.

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 meets on Tuesdays at 12:00 p.m. PT. The group discussed the DC_Offset BIRD and Randy Wolff has given an update on his C_comp improvement BIRD.

Task group material can be found at:

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

INTERCONNECT TASK GROUP
Michael Mirmak reported that the group meets at 8:00 a.m. PT on Wednesdays. There was not a meeting this week; however, the group will resume next week. There will be some finalizing of Touchstone survey results. There will be further discussion of EMD drafts. There will be some discussion of IBIS-ISS parser options as well.

Task group material can be found at:

EDITORIAL TASK GROUP
Michael Mirmak reported the task group remains suspended.

Task group material can be found at:

NEW ADMINISTRATIVE ISSUES
- Annual election of officers
Radek Biernacki reported that we are in the voting period. The announcement went out May 17 for the nomination period. We received nominations for all the officer positions. The ballot went out June 3, and a correction was sent out after that. In the last minutes, June 17 was reported as the date for announcement of results. However, June 17 is the last voting day, and June 18 will be the announcement of results. 7 votes have been received so far. Radek will send a reminder email next week.

- IBISCHK parser source code purchase price
Bob Ross noted a no vote will be to keep the price of the IBISCHK7.x parser at $2,500. Over the years, we have added incremental functionality and complexity of checking that warrants an increase of price. Over the lifecycle of the parser, we may spend $20,000 to $40,000 on bug fixes and other things not anticipated. We expect 8 parser license sales, which will put us at $24,000 income for the next parser version. We may need to change the price later if we add significantly more features with the EMD update or other updates.

Bob moved to vote to increase the price of the parser license for IBISCHK7.x from $2,500 to $3,000. Michael Mirmak seconded the motion. There were no objections.

The roll call vote tally was:

ANSYS – yes
Cadence – yes
GLOBALFOUNDRIES – yes
Infineon Technologies AG – yes (by email)
Intel – yes
Keysight – abstain
Mentor – yes
Micron – yes
SiSoft – yes
SPISim – yes
Synopsys – yes (by email)

Teraspeed Labs – yes
Zuken – yes (by email)

The roll call vote concluded with a vote tally of Yes – 12, No – 0, Abstain – 1. The vote passed.

BIRD199: FIX RX_RECEIVER_SENSITIVITY INCONSISTENCIES

Arpad Muranyi noted he has not received any updates or corrections for the BIRD. This is a minor fix for the example and descriptive text of the Rx_Receiver_Sensitivity parameter.

Arpad moved to vote on the BIRD. Curtis Clark seconded the motion. There were no objections.

The roll call vote tally was:

ANSYS – yes
Cadence – yes
GLOBALFOUNDRIES – yes
Intel – yes
Keysight – yes
Mentor – yes
Micron – yes
SiSoft – yes
SPISim – yes
Synopsys – yes (by email)
Teraspeed Labs – yes
Zuken USA – yes (by email)

The roll call vote concluded with a vote tally of Yes – 12, No – 0, Abstain – 0. The vote passed.

Mike LaBonte will update the status on the website [AR].

BIRD198: KEYWORD ADDITIONS FOR ON DIE PDN (POWER DISTRIBUTION NETWORK) MODELING

Mike LaBonte noted this BIRD came from a group of people representing JEITA. The ATM task group sent a letter to them asking for clarifications and potential additions to the BIRD. Mike has not seen any updates since then. Arpad Muranyi added the authors did say they are planning to make changes to the BIRD.

BIRD166.4: RESOLVING PROBLEMS WITH REDRIVER INIT FLOW

Discussion was tabled.

BIRD181.1: I-V TABLE CLARIFICATIONS

Discussion was tabled.

BIRD190: CLARIFICATION FOR REDRIVER FLOW
Discussion was tabled.

BIRD197.2: NEW AMI RESERVED PARAMETER DC_OFFSET
Discussion was tabled.

IBISCHK PARSER AND BUG STATUS
Bob Ross reported the parser development for Version 7.0 is progressing. We have had questions from the parser developer a while ago, but nothing recent. The target date for delivery of the parser in the agreement is June 21, 2019. Those who want to receive the source code need to go through the signature process for the license and make the payment. Bob sent an email to the previous parser license purchasers about the upcoming parser delivery. Executables will become available sometime after the source code is stable and released.

NEW TECHNICAL ISSUES
None.

NEXT MEETING
The next IBIS Open Forum teleconference meeting will be held on June 28, 2019. The following teleconference meeting is tentatively scheduled for July 19, 2019.

Curtis Clark moved to adjourn. Michael Mirmak seconded the motion. The meeting adjourned.

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NOTES

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This meeting was conducted in accordance with SAE ITC guidelines.

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 5, 2019	April 26, 2019	May 17, 2019	June 7, 2019
ANSYS	User	Active	X	-	X	X
Applied Simulation Technology	User	Inactive	-	-	-	-
Broadcom Ltd.	Producer	Inactive	-	-	-	-
Cadence Design Systems	User	Inactive	-	X	-	X
Cisco Systems	User	Inactive	-	-	-	-
Dassault Systemes	User	Inactive	-	-	-	-
Ericsson	Producer	Inactive	-	-	-	-
GLOBALFOUNDRIES	Producer	Inactive	-	-	-	X
Google	User	Inactive	-	-	-	-
Huawei Technologies	Producer	Inactive	-	-	-	-
Infineon Technologies AG	Producer	Inactive	-	-	-	X
Instituto de Telecomunicações	User	Inactive	-	-	-	-
Intel Corp.	Producer	Active	X	X	X	X
Keysight Technologies	User	Active	X	X	X	X
Maxim Integrated	Producer	Inactive	-	-	-	-
Mentor, A Siemens Business	User	Active	X	X	X	X
Micron Technology	Producer	Active	X	X	X	X
NXP	Producer	Inactive	-	-	-	-
SiSoft	User	Active	X	X	X	X
SPISim	User	Active	-	-	X	X
Synopsys	User	Inactive	-	-	-	X
Teraspeed Labs	General Interest	Active	X	X	X	X
Xilinx	Producer	Inactive	-	-	-	-
ZTE Corp.	User	Inactive	-	-	-	-
Zuken	User	Active	X	X	X	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.