IBIS Open Forum Minutes

Meeting Date: August 09, 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, Longfei Bai
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	Antonio Ciccomancini
Futurewei Technologies	Albert Baek
IBM	Michael Cohen*, Greg Edlund
Infineon Technologies AG	Anke Sauerbrey, Pietro Brenner, Francesco Settino
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 Schäder
Zuken USA	Lance Wang*

OTHER PARTICIPANTS IN 2019

Apollo Giken Co.	Satoshi Endo
AVL	Wolfgang Röhrner
Carleton University	Ram Achar
Continental	Stefanie Schatt
Hitachi	Norio Chujo
IO Methodology	[Lance Wang]
John Baprawski, Inc.	John Baprawski
Hamburg University of Technology	Til Hillebrecht
KEI Systems	Shinichi Maeda
Marvell	Johann Nittmann
OmniVision	Sirius Tsang
Politecnico di Torino	Stefano Grivet-Talocia, Paolo Manfredi
	Alessandro Zanco
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
STMicroelectronics	Olivier Bayet, Aurora Sanna
Toshiba	Imi Hitoshi
Toshiba Electronic Devices & Storage Corp.	Atsushi Tomishima
Université de Bretagne Occidentale	Mihai Telescu
University of Cassino	Antonio Maffucci
University of Toronto	Fadime Bekmambetova
University of Zagreb	Adrijan Baric

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
September 06, 2019	624 227 121	IBISfriday11

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

http://tinyurl.com/IBISfriday

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
Curtis Clark declared that a quorum was reached.

CALL FOR PATENTS
Randy Wolff called for declaration of any patents or pending patents related to the IBIS, IBIS-ISS, ICM, or Touchstone 2.0 specifications. No patents were declared.

REVIEW OF MINUTES AND ARS
Randy Wolff called for comments on the minutes of the July 19, 2019 IBIS Open Forum teleconference. Michael Mirmak moved to approve the minutes. Mike LaBonte seconded the motion. There were no objections.

Randy reviewed ARs from the previous meeting.

1. Steve Parker to remove numbers from "IBISCHK6 Bugs" and "TSCHK2 Bugs" on home page [AR].
   Steve Parker was unable to attend the meeting. Mike LaBonte reported that this had been done.

ANNOUNCEMENTS, CALL FOR ADDITIONAL AGENDA ITEMS
None.

MEMBERSHIP STATUS AND TREASURER'S REPORT
Bob Ross reported that we have 26 members.

We have $16,368 cash flow for 2019 and a $19,118 adjusted balance for 2019.   The $3,000 increase relative to the previous report is the result of one new parser license purchase.

WEBSITE ADMINISTRATION
Steve Parker was unable to attend the meeting. Mike LaBonte reported that in addition to the

resolved [AR] noted previously, the website contained approximately a dozen similar links that included revision numbers. Mike had changed all of them. Mike also noted that based on a previous [AR] he had created an ibischk@ibis.org email address, which routes directly to Bob Ross. This had been added to the page for ibischk6. Mike also noted that he had removed the link to ibischk version 6.1.5 from the home page. He hoped this would make it more obvious to people later when the link to version 7.0 is added to the home page.

MAILING LIST ADMINISTRATION
Mike LaBonte noted that he had unsubscribed a few addresses that were bouncing. He noted that our sender score is still good, and things are running properly.

LIBRARY UPDATE
No update.

INTERNATIONAL/EXTERNAL ACTIVITIES
- Conferences
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
Nothing new was reported.

- Related standards
IEC 63055/IEEE 2401, JEITA "LPB"
Michael Mirmak reported that the latest revision of this LSI, package, board unified standard has been through technical and editorial reviews and is now in the balloting phase. Six entities are participating in the balloting, which closes on August 21, 2019, and at least three of them are IBIS members. Michael encouraged people to make sure members of their organizations were aware of the voting, and he noted that he will give an update once the balloting closes.

Michael noted a related standard from JEDEC, JEP30, which has a similar xml-based format. It may be a bit more focused on manufacturing, but it also includes electrical descriptions and apparently can includes IBIS. He noted that we may want to see if IBIS should be involved with JEP30 (committee JC-11.2) at all. Randy Wolff noted that Micron is JEDEC member, and he could take a look at JEP30 [AR].

Walter Katz asked about access to the two standards. Michael noted that there is a JEP30 website, but he wasn't sure how much information was available to non-members. Michael noted that he would check to see if IEEE 2401 was going to be available via the IEEE Get Program [AR].

SUMMIT PLANNING AND STATUS
- Asia Summits
Asian IBIS Summits are scheduled in Shanghai on November 1, 2019, Taipei on November 4, 2019, and Tokyo on November 8, 2019.

Bob Ross noted that the rooms had been reserved. Bob introduced a new sponsorship policy for the summits in Shanghai and Taipei. The official IBIS Open Forum Summits will end earlier than they have in the past, and after the summits have officially closed we will permit vendor-specific presentations. Presentations during the official summits are still required to be vendor-neutral. The sponsorship levels for the Shanghai and Taipei summits are:

Bronze($500): A vendor table but no vendor-specific presentation after the summit.
Silver($1,000): A vendor table and a 15-minute vendor-specific presentation after the summit.
Gold($1,500): A vendor table and a 30-minute vendor-specific presentation after the summit.
Platinum($2,000): A vendor table and a 45-minute vendor-specific presentation after the summit.

Randy Wolff and Bob reiterated that vendor-specific talks will be presented after the summits are officially closed. Arpad asked when the vendor-specific talks are scheduled to begin, and he noted that people often leave the summits early to catch return flights. Bob said he expected the summits to end by 3PM, and vendor-specific presentations would then begin. Bob and Mike LaBonte said that most attendees of the Shanghai and Taipei summits are local commuters. The goal of the new policy is to bring in more sponsors who want to talk about their products and to encourage their customers to attend the summits and the presentations. They noted that people in Shanghai and Taipei had been asking for this.

Walter Katz noted that this was a profound change in the way summits are run, and he asked if the IBIS officers made this decision or if we need an Open Forum vote. Walter noted that he wasn't objecting and considered it a clever idea. Bob and Randy said the sponsorship documents had already been approved by SAE's legal team. Arpad Muranyi asked if it required an IBIS policy change. Bob noted that the official IBIS summit portion is still vendor-neutral, so it's just a question of scheduling the vendor-specific presentations after the summits.

Arpad asked if we would consider extending this policy to the US and Europe too, if it were successful. Bob said the situations for other summits were different. The summit in Europe with SPI already had vendor tables, and it was unclear whether attendees would want to stay for vendor-specific presentations. In addition, that summit is only a half-day summit in the afternoon, and people often leave for return flights as Arpad had earlier mentioned. The summit at DesignCon is also unlikely to need this new sponsorship agreement. There are already vendor-sponsored sessions and a trade show at DesignCon. Mike noted that the DesignCon Summit typically has a full program, where Shanghai and Taipei typically had trouble filling two-thirds of the program with presentations.

Arpad asked if sponsorship solicitation emails for Taipei and Shanghai would contain the information about the new sponsorship levels and benefits. Bob said they would and noted that he and Lance Wang would be contacting previous sponsors. He noted that sponsorship emails

would explain that the vendor-specific presentations are not mandatory, and organizations can sponsor at the higher levels without exercising their option to give vendor-specific presentations.

- DesignCon 2020 Summit

Randy noted that we want to get moving on this, so we can formalize discussions with UBM. Bob Ross moved to schedule a vote to hold an all-day summit at DesignCon 2020 on Friday, January 31, 2020 at a cost not to exceed $10,000. Walter seconded. There were no objections to scheduling the vote. Randy said he would send an email soliciting votes on holding the summit for the next Open Forum teleconference. [AR]

QUALITY TASK GROUP

Mike LaBonte reported that the group is meeting on Tuesdays at 8:00 a.m. PT. The group continues to focus on ibischk 7.0.

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 had recently been discussing Michael Mirmak's proposal to separate high and low frequency components of jitter. At the previous meeting the group had also discussed development of an IBIS-ISS parser. Walter Katz had listed four levels of parsing we might consider. The simplest (Level 1) would parse each line independently and simply ensure that only legal elements of the IBIS-ISS subset of SPICE were used. The most complicated (Level 4) would provide full parsing of the entire circuit, subcircuit scoping rules, consistency checking, etc. A straw poll on whether to get a quote for a Level 1 parser had passed unanimously. A straw poll on whether it was worthwhile to consider a Level 4 parser was not unanimous, but a majority voted in favor. So, Bob Ross will ask the ibischk parser developer for quotes on Level 1 and Level 4 IBIS-ISS parsers. This request will not be made until after ibischk 7.0 is completed.

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. The group had been focusing on the EMD proposal, which was in draft 12 and undergoing revisions to the Pin Lists section. A draft 13 was expected soon, and the proposal was expected to move from technical to editorial review shortly. The next topic was expected to be the Touchstone Survey results and how to summarize and present them publicly. Bob Ross noted that some syntax rules related to Aggressor_Only in IBIS Version 7.0 will also be discussed.

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

None.

BIRD197.4: NEW AMI RESERVED PARAMETERS DC_OFFSET AND NRZ_Threshold

Walter Katz reviewed the newly submitted BIRD. He noted that the basic change from BIRD197.3 was that DC_Offset can now be In or InOut. If it is InOut, then the value returned by Rx AMI_Init should be added to the output of Rx AMI_GetWave by the EDA tool to form the complete waveform at the Rx algorithmic model output. The NRZ_Threshold parameter can specify the threshold to be used with the complete waveform. Randy Wolff noted that this proposal had been reviewed extensively in the ATM task group.

Walter moved to schedule a vote on this BIRD at the next Open Forum meeting. Bob seconded. There were no objections to scheduling the vote. Randy said he would send an email soliciting votes on BIRD197.4 for the next Open Forum teleconference. [AR]

BIRD200: C_COMP MODEL USING IBIS-ISS OR TOUCHSTONE

Randy Wolff noted that the BIRD had been introduced during the previous meeting, and he had received no comments. Bob Ross noted that this BIRD was more complicated, and we might want to give it more time for review. Mike LaBonte suggested that scheduling the vote might be what prompts people to read the BIRD. Radek Biernacki noted that he would prefer to have more time and not have two BIRDs to vote on at the next meeting (with BIRD197.4 already scheduled). He noted that there was no particular rush since this would go into IBIS 7.1. Radek preferred scheduling a vote for the meeting after the next one. Bob said he was ok with this as long as it was clear to everyone that things could change by then. Mike moved to schedule a vote on this BIRD at the meeting after the next Open Forum meeting. Radek seconded. There were no objections to scheduling the vote. Randy said he would send an email soliciting votes on BIRD200 for the teleconference after the next Open Forum teleconference. [AR]

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.

BIRD198: KEYWORD ADDITIONS FOR ON DIE PDN (POWER DISTRIBUTION NETWORK) MODELING
Discussion was tabled.

IBISCHK PARSER AND BUG STATUS
Bob Ross reported no new BUGs. Bob noted that source code license agreements had been sent to 14 organizations. We received responses from six, and three have signed licenses. We expect more to come in after their organizations' legal processes are completed.

Bob noted that we had received what was supposed to be ibischk 7.0.0, but he had found several issues. Some were trivial, with questionable errors being reported or other errors not reported. About eight test cases had exposed those types of issues. Bob noted that at the previous meeting he had referred to a problem with improper mixing of interfaces for reference terminals within Example 6 in the [Interconnect Model] section of IBIS 7.0. The example with the problem is actually Example 8, not Example 6.

Bob noted that BIRD186.4 had introduced references to files that were in subdirectories. He hadn't seen any test cases checking for existence of a file in the expected subdirectory, so he had asked the developer to add some.

Bob noted that he wasn't sure if there was an ambiguity with respect to Aggressor_Only lines. If an I/O pin, say A1, is declared Aggressor_Only at one interface does it have to be explicitly declared Aggressor_Only at other interfaces, or is it implied? Bob said he had asked the parser developer to make sure it was specified at each interface. Randy Wolff asked if it was going to be an error or a warning if that Aggressor_Only tag was not listed on the second terminal as well. Bob said he had mentioned it as an error. Arpad Muranyi noted that he thought we had decided that if one terminal was listed as Aggressor_Only then the entire line is Aggressor_Only. Walter Katz agreed, and said he was fairly certain that was stated in the specification. Walter said he didn't think it was an error or a warning, and he suggested we take up the discussion in ATM or Interconnect. Arpad agreed to add it to the agenda for ATM. Randy said we could take it up in either task group as time permitted, so we could get the feedback to the developer.

NEW TECHNICAL ISSUES
None.

NEXT MEETING
The next IBIS Open Forum teleconference meeting will be held on September 6, 2019. Votes

are scheduled for this meeting for BIRD197.4 and for holding the IBIS Summit at DesignCon2020. The following teleconference meeting is tentatively scheduled for September 27, 2019. A vote on BIRD200 is scheduled for this meeting. Randy Wolff noted that he may not be able to attend the next meeting, but the group agreed to hold the meeting and have Randy designate someone else to run the meeting if necessary.

Arpad Muranyi moved to adjourn. Curtis Clark seconded the motion. The meeting adjourned.

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NOTES

IBIS CHAIR: Randy Wolff (208) 363-1764
       rrwolff@micron.com
       Principal Engineer, Silicon SI Group, Micron Technology, Inc.
       8000 S. Federal Way
       P.O. Box 6, Mail Stop: 01-711
       Boise, ID 83707-0006

VICE CHAIR: Lance Wang (978) 633-3388
       lance.wang@ibis.org
       Solutions Architect, Zuken USA
       238 Littleton Road, Suite 100
       Westford, MA 01886

SECRETARY: Curtis Clark
       curtis.clark@ansys.com
       ANSYS, Inc.
       150 Baker Ave Ext
       Concord, MA 01742

TREASURER: Bob Ross (503) 246-8048
       bob@teraspeedlabs.com
       Engineer, Teraspeed Labs
       10238 SW Lancaster Road
       Portland, OR 97219

LIBRARIAN: Anders Ekholm (46) 10 714 27 58, Fax: (46) 8 757 23 40
       ibis-librarian@ibis.org
       Digital Modules Design, PDU Base Stations, Ericsson AB
       BU Network
       Färögatan 6
       164 80 Stockholm, Sweden

WEBMASTER: Steven Parker (845) 372-3294
       steven.parker@averasemi.com
       Principal Member of Technical Staff, GLOBALFOUNDRIES M/S 5E1
       2070 Route 52

Hopewell Junction, NY 12533-3507

POSTMASTER: Mike LaBonte
　　　　mlabonte@sisoft.com
　　　　IBIS-AMI Modeling Specialist, SiSoft
　　　　1 Lakeside Campus Drive
　　　　Natick, MA 01760

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

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SAE STANDARDS BALLOT VOTING STATUS

Organization	Interest Category	Standards Ballot Voting Status	June 21, 2019	June 28, 2019	July 19, 2019	August 9, 2019
ANSYS	User	Active	-	X	-	X
Applied Simulation Technology	User	Inactive	-	-	-	-
Broadcom Ltd.	Producer	Inactive	-	-	-	-
Cadence Design Systems	User	Inactive	-	-	X	-
Cisco Systems	User	Inactive	-	-	-	-
Dassault Systemes	User	Inactive	X	-	-	-
Ericsson	Producer	Inactive	-	-	-	-
GLOBALFOUNDRIES	Producer	Active	-	X	X	-
Google	User	Inactive	-	-	-	-
Huawei Technologies	Producer	Inactive	-	-	-	-
Infineon Technologies AG	Producer	Inactive	X	-	-	-
Instituto de Telecomunicações	User	Inactive	-	-	-	-
IBM	Producer	Active	-	X	X	X
Intel Corp.	Producer	Active	-	X	X	X
Keysight Technologies	User	Active	-	X	X	X
Maxim Integrated	Producer	Inactive	-	-	-	-
Mentor, A Siemens Business	User	Active	-	X	X	X
Micron Technology	Producer	Active	-	X	X	X
NXP	Producer	Inactive	-	-	-	-
SiSoft	User	Active	-	X	X	X
SPISim	User	Inactive	-	-	-	-
Synopsys	User	Active	-	-	X	X
Teraspeed Labs	General Interest	Active	-	X	X	X
Xilinx	Producer	Inactive	-	-	-	-
ZTE Corp.	User	Inactive	-	-	-	-
Zuken	User	Active	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.