



## IBIS Open Forum Minutes

Meeting Date: **September 21, 2018**

Meeting Location: **Teleconference**

### VOTING MEMBERS AND 2018 PARTICIPANTS

ANSYS	Curtis Clark*
Applied Simulation Technology	(Fred Balistreri)
Broadcom	(Yunong Gan)
Cadence Design Systems	Brad Brim, Ken Willis, Ambrish Varma, Zhen Mu
Cisco Systems	Stephen Searce, Cassie Yan, Baosh Xu
CST	Stefan Paret
Ericsson	Anders Ekholm, Zilwan Mahmod, Guohua Wang
GLOBALFOUNDRIES	Steve Parker*
Huawei Technologies	(Hang (Paul) Yan)
IBM	Greg Edlund, Luis Armenta, Hubert Harrer
Infineon Technologies AG	(Christian Sporrer)
Intel Corporation	Hsinho Wu*, Michael Mirmak*, Nilesh Dattani
	Fernando Mendoza Hernandez, Varun Gupta
	Subas Bastola, Hansel Dsilva, Gianni Signorini
IO Methodology	Lance Wang*
Keysight Technologies	Radek Biernacki*, Ming Yan, Heidi Barnes
	Pegah Alavi
Maxim Integrated	Joe Engert, Yan Liang
Mentor, A Siemens Business	Arpad Muranyi*, Weston Beal, Raj Raghuram
	Carlo Bleu, Mikael Stahlberg, Yasushi Kondou
	Vladimir Dmitriev-Zdorov, Nitin Bhagwath
Micron Technology	Randy Wolff*, Justin Butterfield
NXP	(John Burnett)
Raytheon	Joseph Aday
SiSoft	Mike LaBonte*, Walter Katz*, Todd Westerhoff
Synopsys	Ted Mido, Adrien Auge, Scott Wedge
Teraspeed Labs	Bob Ross*
Xilinx	Ravindra Gali
ZTE Corporation	(Shunlin Zhu)
Zuken	Michael Schaefer, Takayuki Shiratori

### OTHER PARTICIPANTS IN 2018

Google	Zhiping Yang
Haskware	David Banas
John Baprawski, Inc.	John Baprawski

KEI Systems	Shinichi Maeda
Lattice Semiconductor	Dinh Tran, Maryam Shahbazi
OmniVision	Sirius Tsang
Politecnico di Milano	Flavia Grassi, Xinglong Wu
Politecnico di Torino	Tommaso Bradde, Marco De Stefano, Paulo Manfredi Riccardo Trincherio, Stefano Grivet-Talocia
Qualcomm	Kevin Roselle, Tim Michalka
Ricoh	Kazuki Murata
RITA Electronics Ltd.	Kenichi Higashiura, Hiroyuki Motoki
SAE ITC	(Jose Godoy)
Signal Metrics	Ron Olisar
Socionext	Megumi Ono
SPISim	Wei-hsing Huang
Stanford University	Tom Lee
STMicroelectronics	Aurora Sanna, Olivier Bayet
Toshiba	Yasuki Torigoshi, Yoshinori Fukuba
Université de Bretagne Occidentale	Mihai Telescu, Charles Canaff
University of Illinois	José Schutt-Aine
University of Siegen	Elmar Griesse
University of Technology Hamburg	Torben Wendt

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
October 12, 2018	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.

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## 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**

Mike LaBonte called for comments on the minutes of the August 31, 2018 IBIS Open Forum teleconference. Curtis Clark moved to approve the minutes. Bob Ross seconded the motion. There were no objections.

Mike reviewed ARs from the previous meeting.

1. Mike LaBonte to update the website to reflect BIRD195.1 as approved [AR].  
Mike 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. There is \$23,209 in our account accumulated for 2018. There is some activity pending related to sponsorships.

## **WEBSITE ADMINISTRATION**

Mike LaBonte reported that normal maintenance has happened. He noted that there is a model review service. The webpage specifically lists support for reviewing IBIS-AMI models. Bob Ross commented there is little activity, and he doesn't mind opening the service to review of non-IBIS-AMI models. Another option is to close down the service completely.

## **MAILING LIST ADMINISTRATION**

Curtis Clark reported everything is going smoothly. He thinks the issue with Arpad Muranyi getting bounce backs from a particular user on the ATM reflector has been resolved. Curtis ended up unsubscribing the user after they did not respond to emails asking if they wanted to stay on the list.

## **LIBRARY UPDATE**

No update.

## **INTERNATIONAL/EXTERNAL ACTIVITIES**

- Conferences

EPEPS – The 27<sup>th</sup> IEEE Conference on Electrical Performance of Electronic Packaging and Systems will be held in San Jose, CA on October 14-17, 2018. More information is available at:

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

EDI CON – Electronic Design Innovation Conference & Exhibition will be held in Santa Clara, CA on October 17-18, 2018. More information is available at:

<http://www.ediconusa.com>

- Press Update  
None.

- Related standards

IEC 63055/IEEE 2401, JEITA “LPB”

Michael Mirmak reported that the 2401 group met on Tuesday to review Draft 1 of the 2401 update. There were about 20-25 comments to review. The JEITA group taking up the document change process has a few policy issues they need to settle. IBIS was well represented. There were questions about if LPB will support particular versions of IBIS and Touchstone, as well as the level of support for S-parameters and other network parameter formats. 2401 is aware of some of the parser changes ongoing with IBIS. There will be a Draft 2 open for comment sometime after Draft 1 is updated in October. Mike LaBonte asked about access to the draft, as he doesn't have it currently. Michael Mirmak noted that Jonathan Goldberg could answer questions about IBIS participation and access to the draft documents. Comments on the draft would be very valuable.

Bob Ross asked if Michael was a member of 2401 as a representative of Intel. Michael confirmed this is correct. Bob asked if there are any other attendees that are knowledgeable about IBIS. Michael noted there is a strong EDA representation. Outside of JEITA participants, he doesn't recognize very many of the other participants, so he doesn't know their exposure to IBIS or interconnect modeling.

## **SUMMIT PLANNING AND STATUS**

- Asian IBIS Summit (Tokyo)

An IBIS Summit will be held at the Akihabara UDX building from 12:30 p.m. to 5:00 p.m. on November 12, 2018. Bob Ross noted JEITA is handling the Summit arrangements. There is a separate JEITA event in the morning which is open but conducted in Japanese. The topic is S-parameters. We will find out later on who the sponsors are from JEITA.

- Asian IBIS Summit (Shanghai)

An IBIS Summit will be held at the Parkyard Hotel Shanghai from 8:30 a.m. to 5:00 p.m. on November 14, 2018. Huawei Technologies is the primary sponsor, and ZTE and Synopsys are additional sponsors. Bob noted we are expecting more sponsor commitments. One presentation is scheduled so far. A link to the Chinese version of the Summit announcement needs to be added to the IBIS website.

- Asian IBIS Summit (Taipei)

An IBIS Summit will be held at the Sherwood Hotel from 9:00 a.m. to 4:30 p.m. on November

16, 2018. Cadence Design Systems, KairosTech Innovation (SPISim), and Synopsys are sponsors.

Announcements for the three Summits will start going out next week. Mike LaBonte will update the IBIS events page with links to the Chinese and Japanese language Summit announcements [AR].

- DesignCon 2019 IBIS Summit

Mike noted he has contacted UBM to begin negotiations for the barter agreement.

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 focus is about IBISCHK. They have considered a new bug recently. They are making preparations for an IBISCHK6.1.5 and an IBISCHK7 parser.

The Quality task group checklist and other documentation can be found at:

[http://www.ibis.org/quality\\_wip/](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 a question from the Editorial task group related to file naming rules. Arpad submitted a BIRD196 draft for discussion next Tuesday. He hopes to submit it to the IBIS Open Forum next week for review.

Task group material can be found at:

[http://www.ibis.org/macromodel\\_wip/](http://www.ibis.org/macromodel_wip/)

### **INTERCONNECT TASK GROUP**

Michael Mirmak reported that the group usually meets at 8:00 a.m. PT on Wednesdays. The group remains suspended.

Task group material can be found at:

[http://www.ibis.org/interconnect\\_wip/](http://www.ibis.org/interconnect_wip/)

### **EDITORIAL TASK GROUP**

Michael Mirmak reported that the group is meeting at 8:00 a.m. PT on Wednesdays and on

Fridays when there is no Open Forum teleconference. He reported that they are trying to move through all the new BIRDS proposed for IBIS 7.0. They looked at the details of the issues later captured in BIRD196 written by Arpad Muranyi. There are more editorial passes for spelling and consistency to go through. They hope to have a draft for review by the Open Forum before the end of the year.

Task group material can be found at:

[http://www.ibis.org/editorial\\_wip/](http://www.ibis.org/editorial_wip/)

## **NEW ADMINISTRATIVE ISSUES**

None.

### **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.

## **IBISCHK PARSER AND BUG STATUS**

Bob Ross noted a vote is pending to approve IBISCHK6.1.5 funding. There is a new possible bug related to a segmentation fault with respect to Linux only and .so files compiled with different versions of libraries. The bug fix is not obvious yet, so it is unclear if the bug can be slipped into the parser contract. Mike LaBonte commented that if anyone has seen any IBISCHK crashes, additional information might help. When IBISCHK runs on the .so files for both a TX and RX model, there is a crash occurring. The files load and simulate fine in tested simulators. The issue is related to loading both models for IBISCHK parsing, as the issue does not occur with a single model.

Bob moved to spend \$1,000 to develop an IBISCHK6.1.5 parser update. Michael Mirmak seconded the motion. There were no objections.

The roll call vote tally was:

ANSYS – yes

GLOBALFOUNDRIES – yes

Infineon – yes (by email)

Intel – yes

IO Methodology – yes

Keysight – yes  
Mentor – yes  
Micron – yes  
SiSoft – yes  
Teraspeed Labs – yes

The roll call vote concluded with a vote tally of Yes – 10, No – 0, Abstain – 0. The vote passed.

Bob noted that the contract for the IBISCHK7.0 parser is in progress.

### **NEW TECHNICAL ISSUES**

Arpad Muranyi asked if a vote could be tentatively scheduled for BIRD196 for the next IBIS Open Forum meeting. Bob Ross commented it would need to be submitted two weeks before the meeting. Arpad noted we usually only schedule a vote in the meeting after it is introduced for the next meeting. Mike added the BIRD would need to be sent to him to be announced in the next week.

Bob moved to schedule a vote on BIRD196 for the next meeting. He noted it is a minor clarification BIRD that should not be contentious. Radek Biernacki seconded the motion. There were no objections.

### **NEXT MEETING**

The next IBIS Open Forum teleconference meeting will be held on October 12, 2018. A vote is scheduled on BIRD196. The following IBIS Open Forum teleconference meeting is tentatively scheduled on November 2, 2018.

Mike LaBonte thanked all the officers, task group chairs, and meeting minutes takers for their involvement in IBIS. Bob Ross and Michael Mirmak expressed their appreciation for Mike as well.

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

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### **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](mailto: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](mailto:ibis@freelists.org) and/or [ibis-users@freelists.org](mailto:ibis-users@freelists.org) email lists (formerly [ibis@eda.org](mailto:ibis@eda.org) and [ibis-users@eda.org](mailto:ibis-users@eda.org)).
- To subscribe to one of the task group email lists: [ibis-macro@freelists.org](mailto:ibis-macro@freelists.org), [ibis-interconn@freelists.org](mailto:ibis-interconn@freelists.org), or [ibis-quality@freelists.org](mailto: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](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	July 20, 2018	August 10, 2018	August 31, 2018	September 21, 2018
ANSYS	User	Active	X	X	X	X
Applied Simulation Technology	User	Inactive	-	-	-	-
Broadcom Ltd.	Producer	Inactive	-	-	-	-
Cadence Design Systems	User	Active	X	X	X	-
Cisco Systems	User	Inactive	-	-	-	-
CST	User	Inactive	-	-	-	-
Ericsson	Producer	Inactive	-	-	-	-
GLOBALFOUNDRIES	Producer	Active	-	-	X	X
Huawei Technologies	Producer	Inactive	-	-	-	-
IBM	Producer	Inactive	-	-	-	-
Infineon Technologies AG	Producer	Active	X	-	X	X
Intel Corp.	Producer	Active	X	X	X	X
IO Methodology	User	Active	-	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	-	-	-	-
Raytheon	User	Inactive	-	-	-	-
SiSoft	User	Active	X	X	X	X
Synopsys	User	Active	X	-	X	-
Teraspeed Labs	General Interest	Active	X	X	X	X
Xilinx	Producer	Inactive	-	-	-	-
ZTE Corp.	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.