



## IBIS Open Forum Minutes

Meeting Date: **May 31, 2024**

Meeting Location: **Teleconference**

### VOTING MEMBERS AND 2024 PARTICIPANTS

Altair	(JuneSang Lee)
AMD (Xilinx)	(Bassam Mansour)
Analog Devices	Jermaine Lim-Abroguena, Toni Rose Racelis, Christine Bernal, Prachi Shukla, Aprille Hernandez-Loyola, Francis Ian Calubag, Marvin Sinues, Vincent Paul Sabillo, Esther Grace Falate, Keshav Mehrotra
Ansys	Curtis Clark*, Marco Occhiali
Ansys Japan	Satoshi Endo
Applied Simulation Technology	(Fred Balistreri)
Aurora System	(Dian Yang), Raj Raghuram
Broadcom	(Yunong Gan)
Cadence Design Systems	Kyle Lake*, Ambrish Varma, Jared James, John Phillips, Kristoffer Skytte
Celestica	(Sophia Feng)
Cisco Systems	(Stephen Searce), Hong-Man Wu
Dassault Systemes	Stefan Paret, David Duque
GE Healthcare Technologies	(Balaji Sankarshanan)
Google	(Hanfeng Wang)
Huawei Technologies	(Hang (Paul) Yan)
Infineon Technologies AG	(Christian Sporrer)
Instituto de Telecomunicações	(Abdelgader Abdalla)
Intel Corporation	Michael Mirmak*, Hsinho Wu*, Kingler Cai, Chi-te Chen
Keysight Technologies	Pegah Alavi, Ming Yan, David Banas, Fangyi Rao, HeeSoo Lee, Heidi Barnes
Marvell	Steven Parker
MathWorks	Graham Kus*, Walter Katz
Micron Technology	Justin Butterfield
MST EMC Lab	Chulsoon Hwang, Zhiping Yang*, Jiahuan Huang
SAE ITC	Tammy Patton, Rich Demary*
SI-Clarity	Doug Burns*
Siemens EDA	Weston Beal, Arpad Muranyi, Randy Wolff, Matt Leslie, Scott Wedge, Todd Westerhoff, Zhichao Deng
STMicroelectronics	Anil-Kumar Dwivedi, Bhupendra Singh, Harsh Saini, Hemant Kumar Gangwar, Manda Padma Sindhuja, Manish Bansal, Nitin Kumar, Olivier Bayet, Pawan Verma, Pranav Singh, Rahul Kumar, Raushan Kumar, Shivam Soni, Gaurav Goel, Manisha Bisht, Charul Sharma, Manish Bansal, Mihir Pratap
Synopsys	Ted Mido*, (Andy Tai), Luis Simoes, Pedro Monteiro, Luis Neves, António Eustáquio, Diogo Coelho, Nuno Lima, Alexandre Brito
Teraspeed Labs	(Tom Dagastino), [Bob Ross]
Waymo	(Feng Wang), [Ji Zhang]
ZTE Corporation	(Zhongmin Wei), (Shunlin Zhu)
Zuken	(Ralf Brüning), Markus Bucker
Zuken USA	Lance Wang*

## OTHER PARTICIPANTS IN 2024

Alphawave Semi	Adrien Auge, Todd Bermensolo
Anacom	Filipe Saraiva
Applied Logix	Dan Chirpich
Ciena	Hugues Tournier
Hirel Logic	Jason Riddley
HRL Laboratories	John Carlson
Hitachi Ltd.	Yutaka Uematsu
KEI Systems	Shinichi Maeda
KT Smart Future-Creations	Keita Miyasato
Meta	Ashkan Hashemi
Northrop Grumman Corp.	Will McCaffrey
Samsung Electronics	Jun-Bae Kim
Signal Edge Solutions	Benjamin Dannan
Si-Guys	Donald Telian
Socionext America	Futoshi Terasawa
Teraspeed Labs	[Bob Ross]
Toyobo Co.	Saki Kawano
University of Illinois Urbana-Champaign	Jose Schutt-Aine

In the list above, attendees present at the meeting are indicated by “\*.” Those submitting an email ballot for their member organization for a scheduled vote 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 connection information for future IBIS teleconferences is as follows:

Microsoft Teams meeting

**Join on your computer or mobile app**

[Click here to join the meeting](#)

**Join with a video conferencing device**

[106010980@teams.bjn.vc](mailto:106010980@teams.bjn.vc)

Video Conference ID: 114 666 897 5

[Alternate VTC dialing instructions](#)

**Or call in (audio only)**

[+1 267-768-8015,554664847#](tel:+12677688015554664847) United States, Philadelphia

Phone Conference ID: 554 664 847#

[Find a local number](#) | [Reset PIN](#)

[Learn More](#) | [Meeting options](#)

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**

Roll Call: Graham Kus announced a total of 7 organization members attending with quorum of 7 met.

## **CALL FOR PATENTS**

Lance Wang invited Richard Demary to introduce himself. Richard Demary represents SAE-ITC for reference. Lance called for declaration of any patents or pending patents related to the IBIS, IBIS-ISS, ICM, or Touchstone 2.0 specifications.

None were announced.

## **REVIEW OF MINUTES AND ARs**

- May 10, 2024 Minutes
- Michael Mirmak motioned to approve; Curtis Clark seconded. There were no objections. The motion passed.
- May 15, 2024 Hybrid IBIS summit at SPI 2024
- The minutes were not available and would be in next meeting.
- Lance discussed model review committee would be discussed next meeting. Basically, this would be welcome to all EDA vendors to join with opportunity to provide feedback on models.

## **ANNOUNCEMENTS, CALL FOR ADDITIONAL AGENDA ITEMS**

Lance Wang called for any new announcements.

## **MEMBERSHIP STATUS AND TREASURER'S REPORT**

Randy Wolff reported we have 2 more member renewals completed for a total of 24. 2 payments are awaiting confirmation. 3 current members do not plan to renew for 2024.

As of May 31, 2024, we still have 29 members with a quorum of 8. Memberships will expire Monday, June 3 if payment is not received by then, we anticipate membership count moving to 27, with a quorum of 7.

The SAE ITC 2023 assessment has not been reported yet. A payment for SPI IBIS Summit was sent to IEEE SPI. A payment to Steve Parker for website expenses is in progress.

**\$8,218** Balance for 2024

**\$17,668** Adjusted Balance for 2024 (adding the 2024 IBIS membership renewals received in 2023, indicated by "(7)")

There was discussion on IBIS budgeting:

- Consider designated Officer to attend summits with paid or at least partial expenses
- Budgeting for sites and catering for summits
- Lance Wang may call an Officer's meeting after election for 2024-2025 term, this can be on the discussion topic of Summit budget.

## **WEBSITE ADMINISTRATION**

Lance Wang reported on behalf of Steven Parker that the summit pages have been updated.

Lance Wang asked for any questions. None were asked.

Link: <https://ibis.org/>

## **MAILING LIST**

Curtis Clark reported no new subscribers and no stale addresses, everything is normal.

Lance Wang asked for any questions. None were asked.

## **LIBRARY UPDATE**

Zhiping Wang reported that there is an issue with EDA company that dropped IBIS-AMI models from download availability. Trying to work with that vendor to see if the library can be brought back.

Randy Wolff stated that GitHub has been brought up as a topic, perhaps as a place-to-place links for models.

## **INTERNATIONAL/EXTERNAL ACTIVITIES**

IEC 63055/IEEE 2401, JEITA "LPB:"

- Michael Mirmak reported no updates, next meeting is anticipated next week.
- Zhiping Yang reported there is some discussion for 3D-EM simulation standard with IEEE-SA. This way it would be imported/exported by different EDA tools.

Press Updates:

- No updates reported.

University Relations:

- No updates reported.

## **SUMMIT PLANNING AND REVIEW**

### IEEE EMC+SIPI 2024 IBIS Summit

Location:

- 8-12pm August 9, 2024 in Phoenix, AZ (GMT-7, Note: Arizona does not observe US daylight time)

Notes:

- Estimate approximately half-day Summit, similar count of 7-10 presentations.

IBIS Summit Sponsors:

- Sponsors to be announced.

More information is available at the following link:

<https://www.emc2024.org/>

## **QUALITY TASK GROUP**

Randy Wolff reported as acting Chair of this group that there have not been meetings due to no agenda items. New topics for discussion are welcome and a meeting would be scheduled at that point.

Normally, the Quality Task Group meets every Tues Morning at 9am Pacific. Meetings are currently suspended.

Lance Wang asked if there were questions. None were asked.

**Note:** The Quality Task Group checklist and other documentation can be found at:

[https://ibis.org/quality\\_wip/](https://ibis.org/quality_wip/)

## **ADVANCED TECHNOLOGY MODELING TASK GROUP**

Arpad Muranyi reported no new updates.

Lance Wang asked if there were questions. None were asked.

**Note:** Task group material can be found at:

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

## **INTERCONNECT TASK GROUP**

Michael Mirmak reported that port mapping is the main topic of discussion at present. The archive of the interconnect reflector has issues listed over the previous week. If any should need to be reclassified please let us know.

Lance Wang asked for questions. None were asked.

## **EDITORIAL TASK GROUP**

Lance Wang reported that this TG is still suspended.

**Note:** Task group material can be found at:

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

## **NEW ADMINISTRATIVE ISSUES**

Lance Wang started there is an officer election process at present. He asked Arpad Muranyi to speak. Arpad said the nomination period ends today May 31, 2024. There was a reminder to nominate individuals to officers.

## **ROLL CALL**

Mid-meeting roll call: Graham Kus reported 8 member attendees with 1 email vote received.

## **TECHNICAL DISCUSSION**

No new items.

## **NEW AND REVISED \*IRDS**

No new items.

## **\*IRDS ELIGIBLE FOR VOTE SCHEDULING**

TSIRD7.1: Standardized Pole-Residue Representation of Touchstone Data

Arpad Muranyi reported there was a request to show one of the parameters in the form of an equation to aid in understanding what it does. Arpad also stated there was a lot of editorial cleanup rather than technical changes.

Arpad IEEE 370 there is mention of pole residue. Arpad reviewed it and basically it is identical with exception to convention of mathematical notation style. Michael Mirmak stated this reference is in the IEEE 370 under Appendix U, in the final 2 pages. Arpad stated he would prefer to make sure members had opportunity to review this before voting to adopt.

Link: <https://app.ibis.org/tsirds/>

### **\*IRDS SCHEDULED FOR VOTE**

#### **BIRD230.1: Adding a Definitions Section to IBIS**

Lance Wang invited Michael Mirmak to express an introduction. Michael stated there are concepts in the AMI portion of IBIS in bit-by-bit or time-domain processing of IBIS GetWave, we refer to a block of data or UI symbols, we do not really defined those. This BIRD started out with the goal to be consistent with usage of block and similar concepts. It was deemed to add a definition section to IBIS in the chapters, so we did not just have formal but to have additional definitions. This adds an existing section to the chapter to prevent re-ordering of the entire document.

Lance asked if there was a motion to vote.

Arpad motioned to start the voting. Kyle seconded.

Yes is accept, No is reject, and Abstain is an option.

Anys - Yes

Cadence - Yes

Intel - Yes

MathWorks - Yes

Micron – Yes (vote provided via email)

MST EMC Lab - Yes

Siemens EDA - Yes

Synopsys – Yes

Zuken USA – Yes

Graham Kus confirmed that 9 Yes votes are received. 0 No, 0 abstains. There were no objections. The motion carried. Lance Wang announced BIRD230.1 was adopted.

Link: <https://ibis.org/birds/>

#### **BIRD231: Clarifications on AMI Block Concepts**

Lance Wang asked for motion

Arpad motioned to start the vote. Curtis Clark seconded. There were no objections. The motion carried.

Anys - Yes

Cadence - Yes

Intel - Yes

MathWorks - Yes

Micron – Yes (vote provided via email)

MST EMC Lab - Yes

Siemens EDA - Yes

Synopsys – Yes

Zuken USA – Yes

Graham confirmed that 9 Yes votes are received. 0 No, 0 abstains. There were no objections. The motion carried. Lance Wang announced BIRD231 was adopted.

Link: <https://ibis.org/birds/>

## **TABLED \*IRDS**

BIRD220: Pre-driver PSIJ Sensitivity keyword.

Link: <https://ibis.org/birds/bird220.docx>

## **IBISCHK AND TSCHK PARSER AND BUG STATUS**

Randy Wolff reported that there are no new bugs reported for IBISCHK or TSCHK. There is an updated Mac with Apple-silicon executable reported as available. There is no Intel-silicon Mac option at present.

Lance asked if there were questions.

None were asked.

## **NEW TECHNICAL ISSUES**

### IBIS 8.0

Michael Mirmak shared a screen-shot of the draft for IBIS 8.0 BIRD motions. The motion is to consider a flock of BIRDS (223.1, 224, 225, 226, 227, 228, 229.1, 230.1, 231). The policy in the past is that the major revisions cause significant work for the Parser Developer, so we ask for licensing reset, for example of IBISCHK8 and its source code. If some of these BIRDS are added, they would represent significant Parser Development, and it would motivate a new major revision. These BIRDS are all approved except BIRD220, which needs additional discussion. The approval on BIRD220 is not known, so it would be considered at a later time, if it becomes ready. Lance Wang stated there is no approved timeline for BIRD220, so asked Michael if we would be waiting. Michael confirmed he is leaving BIRD220 out of the list on purpose, but if it were to move forward from

ATM Task Group, then we could revise the motion to include it. Arpad asked, would Michael summarize in a few words, which are technical and which are editorial.

Michael stated clarifications vs. parser update required by BIRDs as follows:

223.1 – Large technical Change

224 – basically some minor updates to AMI parameter but requires parser change

225 – editorial, no parser change required

226 – does add keywords, so does require parser change

227 – does add AMI parameter, does require parser change

228 – small change but to many portion of the spec

229.1 – does require parser change

230.1 – editorial, no parser change

231 – editorial, no parser change

Lance asked if there was a motion to schedule a vote for IBIS 8.0. Randy Wolff moved to schedule the vote. Graham Kus seconded. There were no objections. Lance stated that IBIS 8.0 and BIRDs would be scheduled for vote the next IBIS Open Forum meeting.

Link: <https://www.ibis.org>

#### **NEXT MEETING AGENDA AND SCHEDULING**

Lance Wang stated the next IBIS Open Forum meeting would be held as a teleconference meeting on June 21, 2024. The following meeting would be held July 12, 2024.

Michale Mirmak motioned to adjourn. Arpad Muranyi seconded the motion. The meeting adjourned.



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## NOTES

IBIS CHAIR: Lance Wang (978) 633-3388

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This meeting was conducted in accordance with SAE ITC guidelines.

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 or unsubscribe from 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)):
  - <https://www.freelists.org/list/ibis>
  - <https://www.freelists.org/list/ibis-users>
- To subscribe to or unsubscribe from 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), [ibis-editorial@freelists.org](mailto:ibis-editorial@freelists.org), or [ibis-quality@freelists.org](mailto:ibis-quality@freelists.org):
  - <https://www.freelists.org/list/ibis-macro>
  - <https://www.freelists.org/list/ibis-interconn>
  - <https://www.freelists.org/list/ibis-editorial>
  - <https://www.freelists.org/list/ibis-quality>
- 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: ibischk7, tschk2, icmchk1, s2IBIS, s2IBIS2 and s2iplt.

The BUG Report Form for ibischk resides along with reported BUGs at:

<https://ibis.org/bugs/ibischk/>  
<https://ibis.org/bugs/ibischk/bugform.txt>

The BUG Report Form for tschk2 resides along with reported BUGs at:

<https://ibis.org/bugs/tschk/>  
<https://ibis.org/bugs/tschk/bugform.txt>

The BUG Report Form for icmchk resides along with reported BUGs at:

<https://ibis.org/bugs/icmchk/>  
[https://ibis.org/bugs/icmchk/icm\\_bugform.txt](https://ibis.org/bugs/icmchk/icm_bugform.txt)

To report s2IBIS, s2IBIS2 and s2iplt bugs, use the Bug Report Forms which reside at:

<https://ibis.org/bugs/s2IBIS/bugs2i.txt>  
<https://ibis.org/bugs/s2IBIS2/bugs2i2.txt>  
<https://ibis.org/bugs/s2iplt/bugspl.txt>

Information on IBIS technical contents, IBIS participants and actual IBIS models are available on the IBIS Home page:

<https://ibis.org/>

Check the IBIS file directory on IBIS.org for more information on previous discussions and results:

<https://ibis.org/directory.html>

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

## SAE STANDARDS BALLOT VOTING STATUS (attendee X; absent -)

Organization	Interest Category	Standards Ballot Voting Status	Apr 19, 2024	May 10, 2024	May 15, 2024	May 31, 2024
Altair	User	Inactive	-	-	-	-
AMD (Xilinx)	Producer	Inactive	-	-	-	-
Analog Devices	Producer	Inactive	-	-	-	-
Ansys	User	Active	-	X	X	X
Applied Simulation Technology	User	Inactive	-	-	-	-
Aurora System	User	Inactive	-	-	-	-
Broadcom Ltd.	Producer	Inactive	-	-	-	-
Cadence Design Systems	User	Inactive	X	-	-	X
Celestica	User	Inactive	-	-	-	-
Cisco Systems	User	Inactive	-	-	-	-
Dassault Systems	User	Inactive	-	-	X	-
GE Healthcare Technologies	User	Inactive	-	-	-	-
Google	User	Inactive	-	-	-	-
Huawei Technologies	Producer	Inactive	-	-	-	-
Infineon Technologies AG	Producer	Inactive	-	-	-	-
Instituto de Telecomunicações	User	Inactive	-	-	-	-
Intel Corp.	Producer	Active	X	X	X	X
Keysight Technologies	User	Inactive	-	-	-	-
Marvell	Producer	Active	X	X	-	-
MathWorks	User	Active	X	X	-	X
Micron Technology	Producer	Inactive	-	-	-	-
MST EMC Lab	User	Active	-	X	X	X
Siemens EDA	User	Active	X	X	-	X
STMicroelectronics	Producer	Inactive	-	-	X	-
Synopsys	User	Active	X	X	-	X
Teraspeed Labs	General Interest	Inactive	-	-	-	-
Waymo	User	Inactive	-	-	-	-
ZTE Corp.	User	Inactive	-	-	-	-
Zuken	User	Active	-	X	-	X

= Temporarily not a voting member

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 (voting by email counts as attendance)

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.