



## IBIS Open Forum Minutes

Meeting Date: **January 26, 2024**

Meeting Location: **Teleconference**

### VOTING MEMBERS AND 2024 PARTICIPANTS

Altair	(JuneSang Lee)
AMD	(Bassam Mansour)
Ansys	Curtis Clark*
Applied Simulation Technology	(Fred Balistreri)
Aurora System	(Dian Yang)
Broadcom	(Yunong Gan)
Cadence Design Systems	Kyle Lake*
Celestica	(Sophia Feng)
Cisco Systems	(Stephen Searce)
Dassault Systemes	(Stefan Paret)
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*, Kinger Cai*
Keysight Technologies	(Ming Yan)
Marvell	(Steven Parker)
MathWorks	Graham Kus*
Micron Technology	(Justin Butterfield)
MST EMC Lab	Chulsoon Hwang, Zhiping Yang*
Siemens EDA	Weston Beal*, Arpad Muranyi*, Randy Wolff*
STMicroelectronics	(Olivier Bayet)
Synopsys	Ted Mido*, (Andy Tai)
Teraspeed Labs	Bob Ross*
Waymo	(Feng Wang), [Ji Zhang]
ZTE Corporation	(Zhongmin Wei), (Shunlin Zhu)
Zuken	(Ralf Brüning)
Zuken USA	Lance Wang*

### OTHER PARTICIPANTS IN 2024

SAE-ITC

Tammy Patton\*

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 declared quorum met with 9 member companies represented against the 7 minimum requirement for voting.

**CALL FOR PATENTS**

Lance Wang 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**

- November 17, 2023 IBIS Open Forum teleconference
  - o Randy Wolff motioned to approve. Zhiping Yang seconded. The motion passed.
  - o Lance Wang announced the minutes for November 17, 2023 were adopted.
- December 8, 2023 IBIS Open Forum teleconference
  - o Randy Wolff motioned to approve. Zhiping Yang seconded. The motion passed.
  - o Lance Wang announced the minutes for December 8, 2023 were adopted.
- January 5, 2024 IBIS Open Forum teleconference
  - o Curtis Clark motioned to approve, Bob Ross seconded. The motion passed.
  - o Lance Wang announced the minutes for January 5, 2024 were adopted.

ARs:

- Lance to send solicitation email for BIRD228 vote – done
- Lance to send solicitation email for Touchstone 2.1 vote – done
- Lance to update the approval status of BIRD227 on the website - done

**ANNOUNCEMENTS, CALL FOR ADDITIONAL AGENDA ITEMS**

Lance Wang called for any new announcements. None were announced.

**MEMBERSHIP STATUS AND TREASURER'S REPORT**

Bob Ross reported that fiscal year 2023 closes with 29 Voting Members. Currently there are 12 membership renewals for 2024. One member has dropped, so the total is 28, which brings the Quorum to 7. However, another member re-join is pending. One small DesignCon related expense was paid to Lance Wang. More payments are expected after DesignCon for other credit card expenses. We also expect an SAE ITC 2023 assessment to be entered after SAE ITC closes the accounting books. The amount is usually available around February 2024.

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**\$22,504** Balance for 2023

**\$19,904** Adjusted Balance for 2023 (with 2020 \$2000.00 ZTE sponsorship moved forward to 2023 and subtracting 2024 dues payments)

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**\$4,855** Balance for 2024

**\$12,516** Adjusted Balance for 2024 (adding the 2024 IBIS membership renewals received in 2023, indicated by "(7)")

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Lance Wang asked if there were questions. Bob responded to a query that the member that had dropped was SerDesDesign.com. There were no other questions.

## **WEBSITE ADMINISTRATION**

Lance Wang reported on behalf of Steve Parker that there are no updates.

## **MAILING LIST**

Curtis Clark reported there is a cleanup project in progress to clear up "bounce-back" messages from expired subscriber emails. A good number of those were 3-6 months without changing or updating to new emails. He reported that otherwise, things are going smoothly.

## **LIBRARY UPDATE**

Zhiping Yang reported that Samsung appears to have removed all IBIS related library from their public website, we do not know why or the reason for this change. Arpad Muranyi asked if it is removed or moved to a new address. Zhiping responded that the IBIS models appear to more difficult to find or behind a permission wall of some type and that using the normal search, there is no result for IBIS link.

Lance Wang showed via screen-share the Github IBIS library with the Open Forum attendees.

Reference Link: <https://github.com/IBIS-Library/>

## **UNIVERSITY RELATIONS**

Zhiping Yang reported on behalf of Professor Chulsoon Hwang there are no updates.

## **INTERNATIONAL/EXTERNAL ACTIVITIES**

- Conferences

SPI2024 – the 28th IEEE Workshop on Signal and Power Integrity will be held in Lisbon, Portugal on May 12-15, 2024. An IBIS Summit will be held after the event. More information is available at:

<https://spi2024.av.it.pt/>

- Press Update

Tammy Patton reported to please share SAE-ITC and IBIS activities on Linked-In. There are no planned activities on X (formerly Twitter).

- Related Standards: IEC 63055/IEEE 2401, JEITA "LPB"

Michael Mirmak reported there should be an update next week as the next upcoming meeting is immediately prior to the IBIS Summit next week February 2, 2024.

- University Relations

Lance Wang reported on behalf of Chulsoon Hwang there are no updates.

## **SUMMIT PLANNING AND REVIEW**

### DesignCon IBIS Summit 2024 (Santa Clara, CA)

Location:

- February 2, 2024, Mission Towers I, First Floor Training Room, 3975 Freedom Circle, Santa Clara, CA
- (Parking is complimentary in garage, Mention "MathWorks or IBIS Summit" for directions from building Security Desk if necessary).

Sponsors:

- IBIS Open Forum

Co-Sponsors:

- Cadence Design Systems
- Keysight Technologies
- The MathWorks, Inc.
- Siemens EDA
- Others to be determined.

Randy Wolff reported a full program is planned to run from 8:30am to 3:30pm. There are 12 presentations planned. An agenda will be sent out on Friday, January 26, 2024. Meanwhile, as for hospitality, a full breakfast buffet will be served 7:45am and there will be a lunch at approximately 12pm as well. If anyone wishes to request transportation from the conference hotel, please request on individual basis.

### European SPI IBIS Summit

Location:

- May 15 2024, Lisbon, Portugal. Wednesday afternoon, after SPI closes.  
<https://spi2024.av.it.pt/ibis-summit/>

Bob Ross reported regarding the upcoming European IBIS Summit in Lisbon, Portugal would need to be discussed regarding scheduling. Bob stated there would be need to be a motion for any monies spent. Randy Wolff concurred. Bob stated that IBIS Open Forum requires a motion for anything over \$500 to be approved.

### IEEE-EMC/SI-PI Symposium

Location:

- August 5-9, 2024, Phoenix Convention Center, Phoenix, AZ

Zhiping Yang would like to invite the IBIS Open Forum to the IEEE-EMC/SI-PI Symposium and plans to reserve a room for Friday, August 9, 2024. Lance Wang stated the specifics would be discussed in a future meeting due to handling of scheduling and logistics concerns.

## **QUALITY TASK GROUP**

Bob Ross stated that the items discussed will be covered a the IBISCHK and TSCHK Parser section later.

**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 we are discussion an example in IBIS spec there is a placeholder where EDA tool has to place default values, it is not in the AMI file but there is a placeholder- such as Integers and Booleans- right now, we do not have a official provision for that. For example, we have DC\_Offset, and zero is not a value- so a return value would be provided by an EDA tool and we need to be more clear this is not a value but a placeholder. Any comments please join to comment or send an email.

**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 this task groups meets Wednesday at 8am Pacific.

Michael stated the current topic is pole-residue for Touchstone. The overall format is beginning to settle. If anyone has feedback you are welcome to participate- once the IRD is pushed into the Open Forum will push into feature being identified for Touchstone 3. So after pole-residue is settles, it will be part of the TSIRD, it will be formalized in Interconnect. Then it will be discussion on port-ordering, which is the other major feature requested for Touchstone 3.

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

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

## **EDITORIAL TASK GROUP**

The group remains suspended.

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

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

## **NEW ADMINISTRATIVE ISSUES**

None.

## **ROLL CALL**

Mid-meeting roll call: Graham Kus reported 9 member companies in attendance with a quorum of 7 met.

## **TECHNICAL DISCUSSION**

No topics were proposed.

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

BIRD229: AMI Test Data Support

Link: <https://ibis.org/birds/bird229.docx>

No updates were reported.

## **IRDS SCHEDULED FOR VOTE**

BIRD228: Pin Name Field Extension

Link: <https://ibis.org/birds/bird228.docx>

Arpad Muranyi motioned to vote on approval of BIRD228. Kyle Lake seconded the motion. The motion passed.

Ballot results:

- Ansys – Yes
- Cadence – Yes
- Intel Corporation – Yes
- MathWorks – Yes
- Micron – Yes (via email vote)
- MST EMC Lab – Yes
- Siemens EDA – YES
- Synopsys – Yes
- Teraspeed Labs – Yes (via email vote)
- Zuken USA – Yes

Lance counted 10 yes, 0 no votes, 0 abstain. Graham Kus confirmed. The Ballot Motion was approved.

The Ballot Passed.

Lance Wang to update the approval status of BIRD228 on the website [AR].

Touchstone File Format Specification, Version 2.1

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

Michael Mirmak provided a summary of the update to Touchstone File Format 2.1. He stated there had been no additional comments for updates since the proposal.

Michael motioned to vote on approval of Touchstone Version 2.1. Arpad Muranyi seconded the motion. The motion was adopted.

Ballot results:

- Ansys – Yes
- Cadence – Yes
- Intel Corporation – Yes
- MathWorks – Yes
- Micron – Yes (via email vote)
- MST EMC Lab – Yes
- Siemens EDA – Yes
- Synopsys – Yes
- Teraspeed Labs – Yes (via email vote)
- Zuken USA – Yes

Lance Wang counted 10 yes, 0 no votes, 0 abstain. Graham Kus confirmed. The Ballot Motion was approved.

Lance Wang to update the approval status of Touchstone 2.1 on the website [AR].

## **IRDS ELIGIBLE FOR VOTE**

No IRDs reported as eligible for vote.

## **TABLED IRDS: (NO DISCUSSION WITHOUT MOTION TO "UNTABLE")**

BIRD220: Pre-driver PSIJ Sensitivity Keyword

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

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

Bob Ross reported we did temporarily discuss digital signature issue Michael Mirmak had mentioned, because we are deferring discussion until after DesignCon. Stefan from Dassault Systemes had issues compiling with Windows for 7.2.x but was able to resolve it. Bob still submitted the comments to the parser developer.

Bob requested vote on the TSCHK 7.2.0 parser contract and quote for \$2,200. This contract deals with the parser upgrade for the just approved, the Touchstone 2.1 document. The technical specs cover more than just one option line. Lance asked for Motion for TSCHK 2.1.0. Arpad Muranyi motioned to approve. Bob seconded the motion. The vote proceeded.

The Vote for \$2200 for TSCHK2.1.0 Parser Development Contract.

Ballot results:

- Ansys – Yes
- Cadence – Yes
- Intel Corporation – Yes
- MathWorks – Yes
- MST EMC Lab – Yes
- Siemens EDA – Yes
- Synopsys – Yes
- Teraspeed Labs – Yes (via email vote)
- Zuken USA – Yes

Lance counted 9 Yes votes, 0 No votes, 0 Abstain votes. Graham Kus confirmed. The Ballot Motion was approved.

A new BUG246 from Michael Mirmak was issued regarding using forward slash '/' delimiter in path: Weston Beal reports that the file is interrogated, but the path is utilized incorrectly. After some discussion, Randy Wolff motioned that BUG246 be classified as Moderate Severity and Medium Priority. Michael Mirmak seconded. The motion passed. Bob Ross stated that this would be implemented in a future release.

Michael discussed a topic concerning security, as to the matter of .dll and .so files: some recommendation was made regarding digital signing establishing provenance, as these are executable files. That matter being, a user would want to know before they run them on their system, as to where these files came from. In addition, there is a lot more concern in security community and that is a way to verify files such as .dll and .so files associated with IBIS-AMI may be no different. We may need to have discussion verification of some sort of digital signature authority. Michael offered that this could be more of a policy call IBIS Open Forum. Also, this is a compiling issue, so this discussion has to be somewhere else. It could be part of compiling. It is not a requirement. You can receive an executable from another source, but you can compile it.

There was discussion about various security issues, such as the following:

- Simple signature by the compiler/vendor of the AMI .dll and/or .so files
- Michael stated that companies including Intel would be requiring security integrity, and are now migrating to considering IBIS-AMI .dll files as security concerns.

- Escalated .dll and/or .so file registration with OS vendors such as Apple and Microsoft and Linux Vendors and those requisite cost in terms of monies for customers or model-makers.
- Legal and NDA concerns that arise from co-signature with Capital OS vendors holding repositories such as Apple and Microsoft and Linux Vendors.
- Other escalating costs as to monies or NDA/Legal/Paperwork overhead

The discussion continued with debate on these topics. Lance Wang asked to table discussion until future meetings due to time constraints.

## NEXT MEETING AGENDA AND SCHEDULING

The next meeting will be the DesignCon Hybrid IBIS Summit following DesignCon 2024 on February 2, 2024. The next IBIS Open Forum Teleconference meeting would be held on February 16, 2024.

Arpad Muranyi motioned to adjourn. Randy Wolff 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](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/bugsplt.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	Nov 17, 2023	Dec 8, 2023	Jan 5, 2024	Jan 26, 2024
Altair	User	Inactive	-	-	-	-
AMD (Xilinx)	Producer	Inactive	-	-	-	-
Ansys	User	Active	X	X	X	X
Applied Simulation Technology	User	Inactive	-	-	-	-
Aurora System	User	Inactive	-	-	-	-
Broadcom Ltd.	Producer	Inactive	-	-	-	-
Cadence Design Systems	User	Active	X	-	X	X
Celestica	User	Inactive	-	-	-	-
Cisco Systems	User	Inactive	-	-	-	-
Dassault Systemes	User	Inactive	-	-	-	-
GE Healthcare Technologies	User	Inactive	-	-	-	-
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	Inactive	-	-	-	-
Marvell	Producer	Inactive	-	-	-	-
MathWorks	User	Active	X	X	-	X
Micron Technology	Producer	Inactive	-	-	-	-
MST EMC Lab	User	Active	X	X	X	X
Siemens EDA	User	Active	X	X	X	X
STMicroelectronics	Producer	Inactive	X	-	-	-
Synopsys	User	Active	X	X	X	X
Teraspeed Labs	General Interest	Active	X	X	X	X
Waymo	User	Inactive	-	-	-	-
ZTE Corp.	User	Inactive	-	-	-	-
Zuken	User	Active	X	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.