



## IBIS Open Forum Minutes

Meeting Date: **August 25, 2023**

Meeting Location: **Teleconference**

### VOTING MEMBERS AND 2023 PARTICIPANTS

Altair	(JuneSang Lee)
AMD (Xilinx)	(Bassam Mansour)
Ansys	Curtis Clark*, Wei-hsing Huang
Applied Simulation Technology	(Fred Balistreri)
Aurora System	Dian Yang, Raj Raghuram
Broadcom	(Yunong Gan)
Cadence Design Systems	Kyle Lake*, Jared James, John Philips, Kristoffer Skytte
Celestica	(Sophia Feng)
Cisco Systems	(Stephen Searce), Hong Wu
Dassault Systemes	Stefan Paret, BAI Longfei
GE Healthcare Technologies	(Balaji Sankarshanan)
Google	(Hanfeng Wang)
Honeywell	Bavish Vazhayil
Huawei Technologies	Danilo Di Febo, Marco De Stefano, (Hang (Paul) Yan)
Infineon Technologies AG	(Christian Sporrer)
Instituto de Telecomunicações	(Abdelgader Abdalla), Joana Catarina Mendes
Intel Corporation	Chi-te Chen, Kinger Cai*, Michael Mirmak*, Hsinho Wu*
Keysight Technologies	Ming Yan, Douglas Burns, Fangyi Rao, Pegah Alavi, Hee-Soo Lee, Heidi Barnes
Marvell	Steven Parker
MathWorks	Graham Kus, Walter Katz, Kerry Schotz
Micron Technology	[Randy Wolff], Justin Butterfield, Akshay Shivaji Chaudhari, Dragos Dimitriu
MST EMC Lab	Chulsoon Hwang*, Zhiping Yang
SerDesDesign.com	John Baprawski
Siemens EDA	Arpad Muranyi*, Weston Beal*, Matthew Leslie, Mikael Stahlberg, Todd Westerhoff, Scott Wedge, Randy Wolff*
STMicroelectronics	Olivier Bayet, Rahul Kumar, Raushan Kumar, Manish-FTM Bansal, Sameer Vashishtha
Synopsys	Ted Mido*, (Tushar Pandey), Wael Dghais
Teraspeed Labs	Bob Ross*
Waymo	[Zhiping Yang], (Ji Zhang)
ZTE Corporation	(Shunlin Zhu)
Zuken	[Michael Schäder], Markus Bücken, Ralf Brüning
Zuken USA	Lance Wang*

## OTHER PARTICIPANTS IN 2023

Alphawave Semi	Adrien Auge, Todd Bermensolo
Ciena	Hugues Tournier
Hitachi Ltd.	Yutaka Uematsu
Honeywell	Bavish Vazhayil
India Institute of Technology	Jai Narayan Tripathi, Vinod Verma
Nokia	Ramiro Guzman
OMNIVISION	Sirius Tsang
Signal Edge Solutions	Ben Dannan
SI Guys	Donald Telian
Socionext, Inc.	Raymond Yakura
University of Illinois Urbana-Champaign	Jose Schutt-Aine
University of Tunisia, Electronic Laboratory	Malek Souilem
Unaffiliated	Will Hobbs, Mike LaBonte, Jon Powell, Stephen Peters

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#

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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

Lance Wang opened the meeting.

Roll Call: 10 attendees and quorum was reached.

## **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. No patents were declared.

## **REVIEW OF MINUTES AND ARS**

Lance Wang called for review of minutes, as follows:

- July 14, 2023 IBIS Open Forum teleconference

Curtis Clark moved to approve. Weston seconded the motion. There were no objections.

ARs:

- Update Website for University Relations and DASC Liaison

Lance reported that he and Randy Wolff needed to discuss this. The AR stays open.

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

None.

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

Bob Ross reported 29 voting members with a quorum of 8. This includes 2 new members. A web hosting payment is expected from Steve Parker of about \$350. Payments are expected from sponsors for the Shanghai IBIS Summit. One sponsor, Ansys, is planning to pay the hotel directly.

The account balance is \$17,245 with a \$22,295 adjusted balance that includes sponsorship from ZTE paid in 2020 that will be applied to the upcoming China IBIS Summit.

## **WEBSITE ADMINISTRATION**

Lance Wang reported for Steven Parker that he did a minutes update. The August 4 EMC+SIPI IBIS Summit page needs some additional links added.

The TSIRDS page was updated using a Python scripting tool, and now the .docx versions of the TSIRDS are included. Lance noted that with the new capability, some pages like the ATM task group documents archive could be updated by specific people given upload permissions.

Randy asked why there were .txt file versions of the newer TSIRDS, since these were written as Word documents. Lance said there was a conversion utility used to create the .txt files. Randy thought these could be removed. Bob requested addition of vertical lines in the table if possible. PDFs may need to be recognized for certain pages.

## **MAILING LIST**

Curtis Clark reported only a few new subscriptions of current members subscribing to additional lists.

## **LIBRARY UPDATE**

Lance Wang reported for Zhiping Yang there were no requests for updates to the model library.

## **UNIVERSITY RELATIONS**

Professor Chulsoon Hwang reported in the last IBIS Summit there were 3 presentations from academia. Lance thanked Chulsoon for his contributions to the IBIS Summit.

## **INTERNATIONAL/EXTERNAL ACTIVITIES**

### Conferences:

No updates were reported.

### Press Updates

No updates were reported.

### Related Standards

Michael Mirmak reported the next DASC update is September 7, 2023.

### IBIS Summits:

#### IEEE EMC+SIPI IBIS Summit, August 4, 2023

Lance Wang reported there were 29 attendees and 9 presentations. Lance thanked Weston Beal for his help running the meeting onsite.

#### Asian IBIS Summit (Shanghai) November 10, 2023:

The meeting will be a full day meeting at the Parkyard Hotel in Shanghai. This will be an on-site meeting only. Lance will send out the first announcement soon. In 2019 a new sponsor package was created that allowed higher paying sponsors to give presentations in a sponsorship session at the end of the day. Ansys is a platinum level sponsor. ZTE is at the same level using a pre-payment from 2020 that was not used yet for other Summits. Lance noted that additional sponsors are welcome, and more sponsorship is needed to cover the meeting costs. Bob noted that we are waiting to hear back from several potential sponsors. Participants are free to do their presentations in Chinese. Slides need to be in English.

#### Asian IBIS Summit (Tokyo, organized by JEITA), November 14, 2023:

The meeting will be a half-day and hybrid format for attendees in Tokyo and online. Lance asked Ted Mido if he was aware of any planned educational meetings before or after the Summit meeting. Ted was not aware of any plans yet.

## **QUALITY TASK GROUP**

Bob Ross reported the group has completed a new draft of the Quality specification that will be reviewed in the meeting.

**Note:** 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 the group has completed review of Kingler Cai's PSIJ BIRD, submitted as BIRD226. The group has also been discussing Michael Mirmak's AMI Test Load and Test Data BIRD proposal.

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

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

### **INTERCONNECT TASK GROUP**

Arpad Muranyi reported the group has been discussing his pole-residue modeling format proposal for Touchstone, and a draft TSIRD is in progress. There are a few more questions to address. The group is also discussing port mapping syntax for Touchstone. There is no TSIRD started yet for port mapping. Arpad requested review and feedback on the pole-residue TSIRD posted on the Interconnect task group email reflector.

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

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

### **EDITORIAL TASK GROUP**

No update. The group is suspended.

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

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

### **NEW ADMINISTRATIVE ISSUES**

Mid-meeting roll call: 11 attendees noted.

### **QUALITY SPECIFICATION 3.0 REVIEW**

Weston Beal moved to vote on approval of the specification at the next Open Forum meeting. Bob Ross seconded the motion. There were no objections.

Arpad Muranyi asked what would happen after approval. Weston said the 2.0 specification is a bit buried on the Quality task group page. If Version 3.0 is approved, the intention is to post the document at the same level on the website as other specifications for improved visibility.

Lance noted there is an accompanying spreadsheet for model makers to use to document the quality level of models.

Lance to send vote solicitation email [AR]

[https://www.ibis.org/quality\\_ver3.0\\_wip/quality\\_ver3.0\\_draft10.docx](https://www.ibis.org/quality_ver3.0_wip/quality_ver3.0_draft10.docx)

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

BIRD226: PSIJ Sensitivity

<https://IBIS.org/birds/bird226.docx>

Kinger Cai noted BIRD226 has gone through extensive review and about 15 drafts.

## **IRDS SCHEDULED FOR VOTE**

None

## **IRDS ELIGIBLE FOR VOTE**

BIRD225: Clarification for bus\_label rules

<https://IBIS.org/birds/bird225.docx>

Arpad Muranyi noted BIRD225 adds a correction to the EMD portion of the specification to align the specification with the IBISCHK parser.

Bob Ross moved to schedule a vote on BIRD225 at the next Open Forum meeting. Arpad seconded the motion. There were no objections.

Lance Wang to send vote solicitation email [AR]

TSIRD5.1: Per Port Reference Resistance on the Option Line

<https://IBIS.org/tsirds/tsird5.1.docx>

Arpad Muranyi summarized that TSIRD5.1 adds per port referencing to the Touchstone 1 syntax.

Arpad Muranyi moved to schedule a vote on TSIRD5.1 at the next Open Forum meeting. Weston Beal seconded the motion. There were no objections.

Arpad added that approval of this TSIRD will allow the Interconnect task group to move forward with a new Version 2.1 of Touchstone.

Lance Wang to send vote solicitation email [AR]

TSIRD6: Clarify File Extension Rule for Touchstone 1.0 and 1.1 Files

<https://IBIS.org/tsirds/tsird6.docx>

Arpad Muranyi summarized that TSIRD6 clarifies the recommended file extensions for Touchstone 1.0/1.1 files. This TSIRD is intended for inclusion in Touchstone Version 2.1.

Bob Ross moved to schedule a vote on TSIRD6 at the next Open Forum meeting. Arpad Muranyi seconded the motion. There were no objections.

Lance Wang to send vote solicitation email [AR]

Bob asked Ted Mido if his tool normalizes Y and Z-parameters for Touchstone 1.0 files. Bob said the TSCHK parser referenced the original Agilent documentation related to normalization. Ted said for Y and Z-parameters, the normalization is assumed as 1.

Arpad showed where the Touchstone 2.0 specification says that for Touchstone 1.0 data, the reference resistance defines the system reference for the S-parameter data and the normalization used on G-, H-, Y-, and Z-parameter data. For Touchstone 2.0 files, network data for G-, H-, Y- and Z-parameters is not normalized.

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

BIRD220: Pre-driver PSIJ Sensitivity Keyword (Ding et al)

<https://IBIS.org/birds/bird220.docx>

Arpad Muranyi moved to untable BIRD220 for future discussion. Bob Ross seconded the motion. There were no objections.

**IBISCHK AND TSCHK PARSER AND BUG STATUS**

IBISCHK Parser:

Bob Ross reported no new bugs. In the last Quality task group meeting, there was discussion on creating a new IBISCHK 7.2.1 version to fix the 6 open BUG reports. The next step is to write a parser specification and get a quote and expected development time from the parser developer.

**NEW TECHNICAL ISSUES**

Bob Ross noted there were some issues with BIRD223 that were discussed recently. Arpad Muranyi found some editorial issues that may require a BIRD223.1 revision. Changes include a typo of a new keyword, a repeat of a sentence, and addition of a keyword tree diagram. Arpad added that a top-level keyword needs a better description of its level in the keyword hierarchy.

Randy noted we have used the known issues document to track BIRD changes in the past.

Arpad will add this topic to the ATM list for the next meeting [AR]

**NEXT MEETING AGENDA AND SCHEDULING**

Lance Wang proposed the next Open Forum meeting to be scheduled for September 15, 2023. There were no objections. The following meeting is tentatively scheduled for October 6, 2023.

Arpad Muranyi moved to adjourn. Ted Mido 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:

<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>

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

Organization	Interest Category	Standards Ballot Voting Status	June 23, 2023	July 14, 2023	Aug 4, 2023	Aug 25, 2023
Altair	User	Inactive	-	-	-	-
AMD (Xilinx)	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	Active	X	X	-	X
Celestica	User	Inactive	-	-	-	-
Cisco Systems	User	Inactive	-	-	X	-
Dassault Systemes	User	Inactive	-	-	X	-
GE Healthcare Technologies	User	Inactive	-	-	-	-
Google	User	Inactive	-	-	-	-
Honeywell	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	X	-	-	-
Marvell	Producer	Inactive	X	X	-	-
MathWorks	User	Active	X	X	X	-
Micron Technology	Producer	Active	-	-	-	-
MST EMC Lab	User	Active	X	X	X	X
SerDesDesign.com	User	Inactive	-	-	-	-
Siemens EDA	User	Active	X	X	X	X
STMicroelectronics	Producer	Inactive	-	-	X	-
Synopsys	User	Active	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	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.